

SUSTAINABILITY PLAN GUIDELINES

PRELIMINARY DRAFT - NOVEMBER 29, 2017





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1 INTRODUCTION



Overview of Metro's Sustainability Program

Since 2008, the Los Angeles County Metropolitan Transportation Authority (Metro) has focused on the design and construction of rail projects in a sustainable manner. This effort has been led by Metro's Environmental Compliance and Sustainability Department (ECSD) and continues to evolve. This Guidebook highlights the key steps and work products prepared by the project contractors and ECSD staff

in the implementation of Metro's Sustainability Program. This Guidebook includes the following:

- > Metro Sustainability Program
- > Program Documents
- > Regulatory Requirements
- > Monthly Process, including Forms and Deliverables
- > Annual requirements

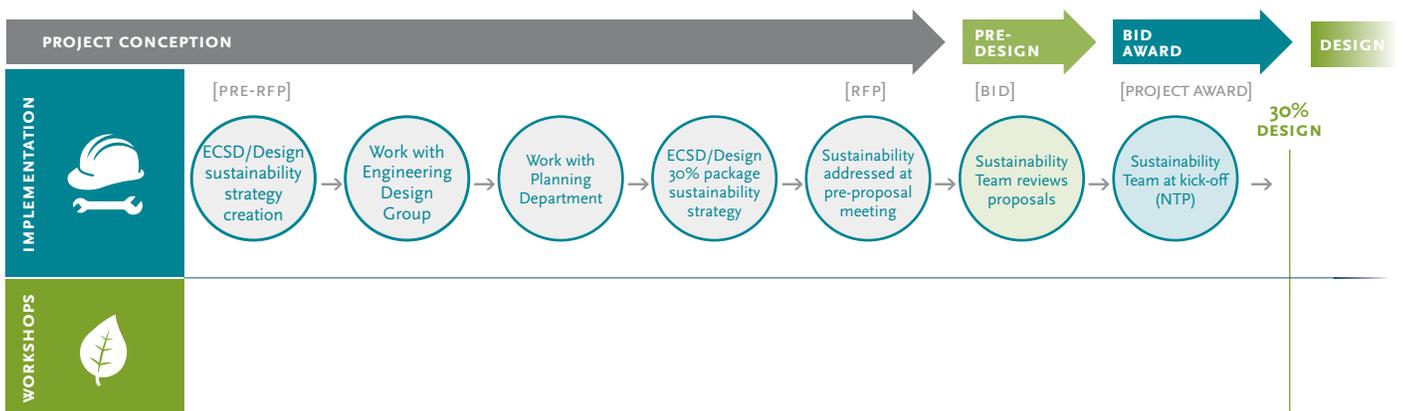


Figure 1: Metro's Sustainability Plan Program Process up to 30% Design

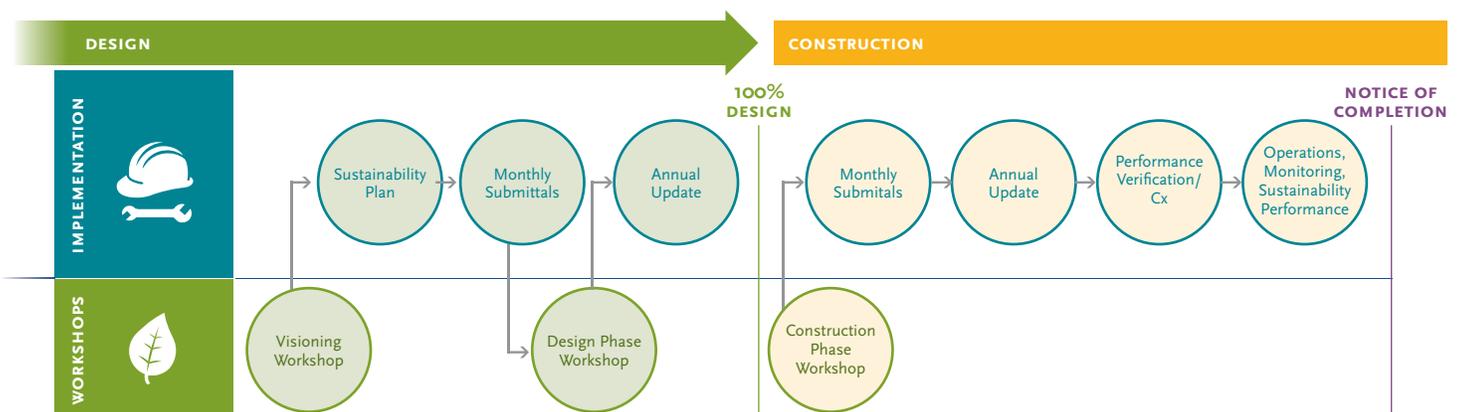


Figure 2: Metro's Sustainability Plan Program Process after 30% Design

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Figures 1 and 2 present an overview of Metro’s sustainability process that is initiated at a project’s conception, incorporated into the project’s design, and addressed during the project’s construction. As shown in Figure 2, at key milestones during design and construction, ECSD and their consultant team present workshops on Metro’s sustainable practices and periodically review the contractor’s progress in the completion of sustainability elements committed to in the project’s Sustainability Plan.

The key components of Metro’s Sustainability Program include, but are not limited to, the following:

- > Design and construction of world-class projects
- > Serve as a leader in:
 - > Renewable energy
 - > Emissions reduction
 - > Climate resiliency
 - > Reduction of adverse effects on Disadvantaged Communities

- > Meeting regional and local standards and regulations and the requirements for compliance;
- > Identification and implementation off federal and State regulatory requirements. Particular attention should be paid to those tied to transportation funding;
- > Continually striving to improve the design and construction processes that are both internal and external;
- > Coordination with all engineering disciplines during the design and construction phases; and
- > Certify projects as sustainable via Envision and/or LEED.

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Table 1: Sources of Sustainability Requirements

JURISDICTION TYPE AND AGENCIES	SUSTAINABILITY REQUIREMENT SOURCES
Local	
Cities	> Municipal Code
County of Los Angeles	> General Plan and Zoning Ordinance > Other Relevant Ordinances including the local adoption of the California Green Building Standards Code (CALGreen)
Regional	
South Coast Air Quality Management District (SCAQMD)	> South Coast Air Quality Management Plans and Rules
Regional Water Quality Control Boards (RWQCBs)	> Regional Basin Plan(s)
State	
California Building Standards Commission	> California Green Building Standards Code (CALGreen), Title 24, Part 11
California Air Resources Board (CARB)	> State Implementation Plan (SIP) > California Ambient Air Quality Standards > Emission Inventories > Regulation of Toxic Air Contaminants
State Water Resources Control Board (SWRCB)	> 401 Certification Program > Discharge to Surface Water and Groundwater > National Pollutant Discharge Elimination System > Stormwater Discharge from Construction, Industrial, and Municipal Activities
Federal	
U.S. Environmental Protection Agency	> Federal Clean Air Act including Regulation of Greenhouse Gas Emissions > Ambient Air Quality Standards for Mobile and Stationary Sources at Federal and State Levels

Metro's Sustainability Documents and Requirements

Metro has developed several documents, approved by the management team or the Board of Directors, that have led to improved sustainable practices for the entire Agency. Many of these documents are listed below:

- > Construction and Demolition Debris Recycling and Reuse Policy
- > Green Construction Policy
- > Renewable Energy Policy
- > Sustainability and Energy Policy
- > Sustainability Implementation and Plan, June 2008
- > Water Use and Conservation Policy

Further, there are several documents that Metro has developed that are in addition to the Sustainability Plan Specification. These documents are to be referenced during the project's design and construction activities. These documents are the Sustainability Technical Requirement, General Construction Policy and Metro Rail Design Criteria (MRDC) Section 2 Environmental Requirements.

Related Regulatory Requirements

The primary requirements and practices incorporated into Metro's Sustainability Program are provided by the following Local ordinances and municipal codes (City and/or County);

- > Regional agency requirements, codes, and standards
- > State Agencies
- > Federal Agencies

The following table summarizes the key sources of sustainability requirements.

Thinking Big And Going Beyond

Metro realizes that, while there is a need for cost effective transportation infrastructure in the Los Angeles region, there are sustainability opportunities to stretch above and beyond the regulatory requirements of the current laws, codes, and standards for design and construction. For certain projects, there are new technologies, construction techniques, and/or equipment for consideration by Metro, especially if it passes the Life Cycle Cost Analysis (LCCA), is technically sound, and approved by Metro engineers. In certain cases, it benefits both the project contractor and Metro to explore opportunities for design and construction practices potentially above and beyond the original contract bid documents. Metro's sustainability team is always willing to pursue innovation and new approaches and will work with project contractors to pursue opportunities that are "Thinking Big and Going Beyond." Examples include:

- > Last mile strategies
- > The latest in renewables- membranes, walls, and other similar construction techniques
- > "Ultra" energy efficient systems
- > Enhanced commissioning approaches, such as technology that integrates known concerns or addresses typical pitfalls in the industry, that result in efficiency and implementation rate increased due to approach.
- > Resiliency: Planning for climate change impacts that is more than earthquake preparedness
- > Commitment to 'Responsible Construction'
- > Net zero
- > Energy Positive
- > Living Building Challenge
- > Buildings that Educate Users
- > WELL Building Certification

Summary

The Sustainability Program plays an important role and function for Metro. Not only does it provide proof that Metro projects are complying with sustainable practices, but it also demonstrates how effective and reliable the contractors are in working with Metro to meet their sustainability goals and the objectives to the community in which they operate.

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METRO'S SUSTAINABILITY TEAM is always willing to **PURSUE INNOVATION AND NEW APPROACHES** and willing to listen to opportunities presented for **'THINKING BIG AND GOING BEYOND'**



2 NUTS AND BOLTS: SUSTAINABILITY PLAN PREPARATION



Sustainability Plan Process and Contents

The preparation of the project’s Sustainability Plan (SP) should follow the *Sustainability Plan Outline* provided in Appendix A to this Guidebook. A preliminary first draft of the project’s Sustainability Plan should be provided to the Metro Sustainability Manager for an “over the shoulder” review (which can include an informal working meeting) rather than submittal through the more formal submittal process. This will allow for the preliminary first draft of the Sustainability Plan to be quickly reviewed and returned to the Contractor, so that the formal process can begin on schedule.

After revisions are made, the contractor can submit the Draft Sustainability Plan to Document Control for distribution to the appropriate Metro staff for review and comment. Comments from Metro staff will be provided to the Metro Sustainability Manager, who will in turn compile the appropriate comments into a Submittal Review Form and have this Form transmitted to the contractor through the Document Control process. *The Submittal Review Form* (which will also be used for the review of the contractor’s Sustainability Plan monthly progress update) is provided in Appendix F-1 to this Guidebook.

Sustainability Plan Elements

In addition to the *Sustainability Plan Outline*, the contractor would be expected to use the following resources in the preparation of the project-specific Sustainability Elements defined in the Sustainability Plan:

- > the Project’s contract documents, (including the designs, MRDCs, specifications, and Environmental Documents including the Environmental Impact Report and/or Environmental Impact Statement)
- > CALGreen requirements including those defined in the local ordinances for the respective jurisdiction(s) for the project; and

- > Agency requirements listed in Table 1 - Sources of Sustainability Requirements in this Guidebook.,

The Contractor should be able to ascertain the SP elements for the project. It is recognized that each project is unique and the SP elements will vary accordingly.

Requirements for Contractors – What’s Expected

Metro has worked to simplify what is required of the Contractor to meet and comply with the SP. This Guidebook is an example of the simplification along with many of the forms that assist in clarifying what is required of the Contractor.

Resources in Appendices

This Guidebook provides the following documents that serve as references for the preparation of the Sustainability Plan:

- > Appendix B CALGreen and Metro Rail Design Criteria Summaries
- > Appendix C Sustainability Plan Monthly Update Supporting Documentation

Appendix C is an important Appendix as the supporting documents that are expected have been identified. Consistent with the Los Angeles County Metropolitan Transportation Authority (Metro) Sustainability Specification, the Monthly Submittal shall include a comprehensive matrix indicating the status of the Project’s sustainability components accompanied by Supporting Documentation that provide evidence of the component’s completion. The purpose of the table in Appendix C is to define the required Supporting Documentation to be provided in response to the California Green Building Standards Code (CALGreen).

The Supporting Documentation shall include, but not limited to, the following:

- > Plans consisting of design drawings, details, floor plans, legends, etc. **Only submit the specific plan sheet(s) referenced in the Sustainability Plan Monthly Submittal’s matrix;**

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- > Studies and reports providing alternative analyses, technical studies, narrative summaries;
- > Calculations and technical reports addressing specific topics; and
- > Correspondence from or plans approved by responsible State, regional or local agencies (only submit signature page and title page of written plans approved by these agencies).

In addition, the following Appendices provide information that may be useful for the Contractor's team. The Information Sheets were developed to assist in understanding what was required by CALGreen.

- > Appendix D Sustainability Information Sheets
- > Appendix E Local Jurisdictions – Sustainability Requirements

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Metro has worked **TO SIMPLIFY** what is required of the Contractor to meet and comply with the SP. **THIS GUIDEBOOK IS AN EXAMPLE ALONG WITH MANY OF THE FORMS.**

3 STAYING ON TRACK: SUSTAINABILITY PLAN REVIEW



This section discusses what is expected related to the monthly and annual review processes during project design and construction, and Metro’s review and approval process.

The Monthly Review

By the 30th of each month, the project contractor is required to submit their Sustainability Plan Monthly Update report through the Document Control process. The contractor’s submittal shall include the documents and forms that are to be turned in as part of the status review. In addition, based on the type of work completed for that month, there may be supplemental documents that are required as part of the submittal. These supplemental documents are listed in Appendix C which will be reviewed for that month’s submittal.

The Sustainability Plan Monthly Update report will consist, at a minimum, of:

- > Monthly Matrix – See Appendix F
- > Summary table of the sustainability elements that indicates the elements that are completed for the month addressed and a summary discussion of the supporting documentation that provides evidence that the sustainability element that has been completed (see Appendix F); and
- > Supporting documentation in an electronic format that addresses the sustainability element that has been indicated as complete (refer to Appendix C for a list of Supporting Documentation required for the sections in 2013 CALGreen and 2016 CALGreen)- see Appendix C.

Contractor’s Role and Submittals

The Contractor is responsible via their Sustainability Designee, to submit all of the required forms and documentation for the previous month. It is expected that there is sufficient time to collect all of the information on what was completed during the previous month, as well as collect and provide copies of all of the supporting documentation for the submittal.

Metro Review and Approval Process

There is a formal submittal process that has been developed for Metro’s review of the Sustainability Plan Monthly Update report. The key steps of this process are presented in Figure 3.

The first form to be turned in is the Monthly form and it is submitted to Document control which then forwards it to the Metro Sustainability Manager for the project. This form is turned in by the Contractor as part of the monthly submittal and it is this form that is used as the basis for the initial Metro review. Once the initial Metro review is completed, then a Response matrix is sent back to the Contractor. If additional documentation is required and/or explanation, that will be requested of the Contractor in order to finalize the submittal.

Another option that the Contractor always has available is what is called an ‘Over The Shoulder (OTS). It is possible to request an OTS from the Metro Sustainability Manager that does not go through Doc Control.

The Metro Sustainability Manager will compile comments into a Submittal Review Form and this Form would be transmitted to the contractor through the Document Control process. *The Submittal Review Form* is provided in F-1 to this Guidebook.

If there are comments provided by Metro on the Submittal Review Form (for example a request for additional information, corrections, or missing or alternative supporting documentation) the contractor will be required to provide this information along with responses on the Submittal Review Form in order to finalize the submittal. The return of the Submittal Review Form that responds to the comments shall

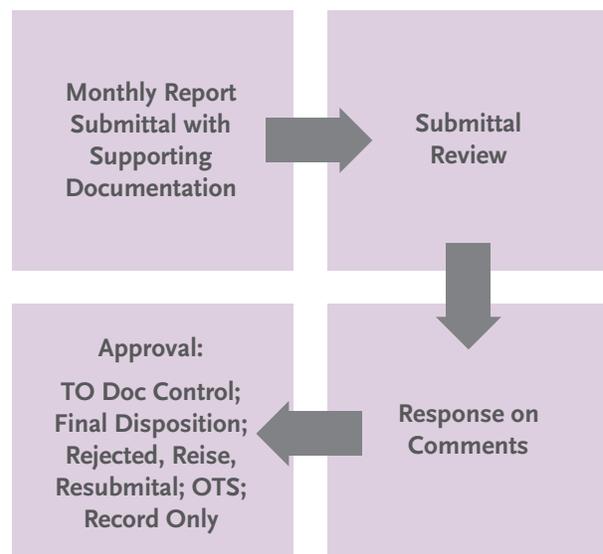


Figure 3: Metro’s Review and Approval Process

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be submitted to Metro through the Documentation Control process for the final review. If needed, an “over the shoulder” review (including an informal working meeting) can be requested by the contractor prior to the return of the Submittal Review Form and requested information through Document Control for final review.

It is important to note that every review will be accompanied by a final disposition. The possible types of disposition that could be given are listed below. The project-specific types of disposition are defined in sustainability specifications for each project.

- > Approved
- > Approved As Noted (no resubmittal required)
- > Rejected - Revise and Resubmit
- > Record Only (submittal for information only)

Annual Board Report

Each year, ECSD provides an update to the Board of Directors related to sustainability-related progress made on Metro projects that are in compliance with and following a Sustainability Plan. Many of those projects are Design/Build projects. The progress is based on calendar year, January – December. The type of data that would be requested from the contractor may change from year to year, but with adequate Sustainability Plan Monthly Updates, sufficient tracking and recordkeeping of project design and construction activities, the contractor should be able to summarize the information. This information that would be requested should only be a matter of pulling the information together at the end of the year. If a project begins mid-year, then the data provided is for the months that the sustainability process was underway.

Per the Sustainability Plan specification, 01 35 63, each year, the Contractor shall submit this data that is requested by Metro. Since all projects will be in different stages of design and construction, some of the requested data may not be possible to obtain. For example, in 2016, it was requested that data on the lbs of waste diverted from the construction site be summarized for the annual year. Those projects that had not yet begun construction, could not complete that request for data and therefore did not complete that section.

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The Contractor is responsible via their **SUSTAINABILITY DESIGNEE**, to submit **ALL OF THE REQUIRED FORMS AND DOCUMENTATION** for the previous month.



4 METRO'S LIFE-CYCLE COST ANALYSIS



The Life-Cycle Cost Analysis

The Life Cycle Cost Analysis (LCCA) is a critical component of any project that qualifies as “Sustainable.” It is important that all aspects of the life of equipment, materials used, and durability evaluated, particularly when considering that Metro’s greater Los Angeles area program, and Measure M, will be only completed once. Some of a project’s components designed and constructed are expected to last 100 years.

Thus, completing a life-cycle costs analysis has been made a mandatory requirement in the Sustainability Plan specification, Technical Requirement, and Section 2.0 Environmental MRDC.

COST EFFECTIVE OPTIONS

Performing a LCCA gives the total cost of a system or piece of equipment, including all expenses incurred over its life. This analysis can be applied when comparing systems and/or equipment to determine the most cost effective options. There are two reasons to do an LCCA:

- > To compare different systems.
- > To determine the most cost-effective system or piece of equipment.

For some systems, one of two situations may exist:

- > The initial cost may be high but the lifetime energy costs will be low.
- > The initial cost to buy a system or a piece of equipment and the energy or the maintenance costs may be low, but the useful life may be short.

In the latter case, we may have to replace the appliance several times to get the same useful life as the other option. Therefore, a LCCA can be helpful for comparing the total costs incurred over the lifetime of a system or a piece of equipment. It is, in essence, calculating all the costs incurred to buy, maintain, and run the system over its lifetime.

Completing a **LIFE-CYCLE COSTS ANALYSIS** has been made a **MANDATORY REQUIREMENT** in the Sustainability Plan specification.

CALCULATING THE LIFE-CYCLE COSTS

All costs associated with acquiring, operating, maintaining, and disposing of a building, building systems and/or equipment are to be determined. These costs usually fall into the following categories:

- > Initial Costs – Purchases, Acquisition, Construction Costs
- > Replacement (Repl) Costs
- > Residual Values – Resale or Salvage Values or Disposal Costs
- > Fuel Costs
- > Operation, Maintenance, and Repair (OM&R) Costs
- > Finance Charges – Loan Interest Payments
- > Non-Monetary Benefits or Costs
- > Other (O) Costs

The formula to use includes individually identifying each cost by year and amount and discount using the Net Present Value Method; the sum of present values (PV) for each category is the Life Cycle Cost (LCC). This analysis shall be performed for each proposed alternative:

$$LCC = I + Repl - Res + E + W + OM\&R + O$$

Where:

LCC = Total LCC in present-value (PV) dollars of a given alternative

I = Initial Cost

Repl = PV capital replacement costs

Res = PV residual value (resale value, salvage value) less disposal costs

E = PV of energy costs

W = PV of water costs

OM&R = PV of non-fuel operating, maintenance and repair costs

O = PV of other costs (e.g., contract administration costs, financing costs, employee salaries and benefits, etc.)

The LCCA calculation is to be provided in an Excel document, clearly depicting at minimum the calculation inputs, discount rates, and Net Present Value Method. **Any assumption made in the calculation shall be explicitly disclosed and supported with reasoning behind said assumption.**

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APPENDIX A

Sustainability Plan Outline

APPENDIX A

Sustainability Plan Outline

1.0 INTRODUCTION AND BASIS

- 1.1 Overview of Project Location and Components
- 1.2 Objectives & Purpose of Sustainability Plan (specific to this project)
- 1.3 Summary of Related Regulatory Requirements
 - 1.3.1 Metro [Metro goals, policies, and objectives, Metro Rail Design Criteria, Specs]
 - 1.3.2 State Regulations [California Green Building Standards Code (CALGreen), California Air Resource Board Requirements]
 - 1.3.3 Regional Requirements [South Coast Air Quality Management District plans and rules, Regional Water Quality Control Board plans and policies]
 - 1.3.4 Local Requirements [Local Ordinances (review each City), Local CALGreen Requirements]

2.0 GOALS

- 2.1 Definition of Project's Metro Sustainability Goals, Policies, Board Objectives, and Steps to Implement (this includes completing a CalGreen Form which checks off the relevant project Calgreen components)
 - 2.1.1 Design
 - 2.1.2 Construction
 - 2.1.3 Commissioning

3.0 SUSTAINABILITY DESIGN AND CONSTRUCTION COMPONENTS

- 3.1 List of Sustainability Elements [include applicable regulatory requirement(s) including Metro goals, policies, and objectives, State and Local Codes (CALGreen), Metro Rail Design Criteria, Agency rules and regulations, local ordinances; and indicate if Element is above and beyond the regulatory requirement(s) and how the Element addresses Metro sustainability and environmental goals, policies, and objectives]
 - 3.1.1 Design
 - 3.1.2 Construction
 - 3.1.3 Commissioning

4.0 IMPLEMENTATION PROCESS AND RESPONSIBILITIES

- 4.1 Implementation Process and Procedures [Reference and provide in table format the following information:
 - > Sustainability Element (full text of element including all components)
 - > Regulatory Requirement(s)
 - > Implementation Timeframe
 - > Party Responsible for Implementation
 - > Monitoring/Reporting Schedule
 - > Documentation Required to Prove compliance, monitoring, and/or report
- 4.2 Responsibilities [Define the project sustainability coordinator's roles and responsibilities]

5.0 MONITORING IMPLEMENTATION, MEASUREMENT, REPORTING, AND VERIFICATION (PROVIDE BACKUP CALCULATIONS, DOCUMENTATION, APPROVALS FROM LOCAL JURISDICTIONS, FRONT PAGE OF APPROVED REPORT, ETC.)

6.0 REFERENCES (SEE SUSTAINABILITY SPEC 01 35 63)

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

B-1 2016 CALGreen and Metro Rail Design Criteria Summary

B-2 2013 CALGreen and Metro Rail Design Criteria Summary

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2016 CALGREEN, PLANNING & DESIGN

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
5.106.1 Storm water pollution prevention. Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of stormwater runoff from the construction activities through local ordinance in Section 5.106.1.1 or Best management practices (BMP) in Section 5.106.1.2. [2016 CALGreen]	2.11.2 Hydrology and Water Quality 3.8.1 Drainage, General 3.3.2.C. Storm Drains	M	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit) No. 184692 (2016 CALGreen): Section 99.5.106.1 Defers to 2016 CALGreen M.M.	
5.106.1.1 Local ordinance. Comply with a lawfully enacted stormwater management and/or erosion control ordinance. [2013 CALGreen]	2.11.2 Hydrology and Water Quality 3.8.1 Drainage, General 3.3.2.C. Storm Drains 3.8.5 Drainage, Surface Drainage 6.8.7 Drainage in Stations	M	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
5.106.1.2 Best management practices (BMP). Prevent the loss of topsoil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP. 1. Soil loss BMP that should be considered for implementation as appropriate for each project include, but are not limited to, the following: a. Scheduling construction activity. b. Preservation of natural features, vegetation and soil. c. Drainage swales or lined ditches to control water flow. d. Mulching or hydroseeding to stabilize disturbed soils. e. Erosion control to protect slopes. f. Protection of storm drain outlets (gravel bags or catch basin inserts). g. Perimeter sediment control (perimeter silt fence, fiber rolls). h. Sediment trap or sediment basin to retain sediments on site. i. Stabilized construction exits. j. Wind erosion control. k. Other soil loss BMP acceptable to the enforcing agency. 2. Good housekeeping BMP to manage construction equipment, materials and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following: a. Material handling and waste management. b. Building materials stockpile management. c. Management of washout areas (concrete, paints, stucco, etc.). d. Control of vehicle/equipment fueling to contractor's staging area. e. Vehicle and equipment cleaning performed off site. f. Spill prevention and control. g. Other housekeeping BMP acceptable to the enforcing agency. [2013 CALGreen]	2.11.2 Hydrology and Water Quality 3.8.1 Drainage, General 3.8.5 Drainage 6.8.7 Drainage in Stations	M	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 403 (Fugitive Dust Emissions)
A5.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section A5.106.2.1 and storm water runoff quality by Section A5.106.2.2 or by local requirements, whichever are stricter. [2016 CALGreen]	2.11.2 Hydrology and Water Quality 3.3.2.C. Storm Drains 3.8.1 Drainage, General 3.8.2 Hydrology 3.8.3 Design Storm Drainage Area 3.8.4 Rainfall Intensity 3.8.5 Surface Drainage 3.8.6 Drainage Structures 3.8.7 Storm Drains 3.8.8 Flood Control	V	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit) No. 184692 (2016 CALGreen) No CALGreen M.M. required for LAGBC	
A5.106.2.1 Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions. Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity. [2010 CALGreen]	3.3.2.C. Storm Drains 3.8.1 Drainage, General 3.8.2 Hydrology 3.8.3 Design Storm Drainage Area 3.8.4 Rainfall Intensity 3.8.5 Surface Drainage 3.8.6 Drainage Structures 3.8.7 Storm Drains 3.8.8 Flood Control	V	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit) No. 184692 (2016 CALGreen) No CALGreen M.M. required for LAGBC	

APPENDIX B

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
		MANDATORY/ VOLUNTARY	ORDINANCE INFO	
A5.106.2.2 Storm water runoff quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs). [2010 CALGreen]	2.11.2 Hydrology and Water Quality 3.3.2.C. Storm Drains 3.8.1 Drainage, General	V	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in Section A5.106.3 [2010 CALGreen]	2.11.2 Hydrology and Water Quality 3.3.2.C. Storm Drains 3.8.1 Drainage, General	V	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.106.4 Bicycle parking. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2. [2016 CALGreen]	6.12.5.B.2. Bicycle Access, Bicycle Parking	M	MRDC 6.12.5.B.2.a No. 182849 (2013 CALGreen) No. 182386 (Bicycle Parking Requirements) No. 184692 (2016 CALGreen) Defers to CALGreen 2016 M.M	
5.106.4.1 Bicycle parking. [BSC-CG] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter. [2016 CALGreen]	6.12.5.B.2. Bicycle Access, Bicycle Parking	M	MRDC 6.12.5.B.2.a No. 182849 (2013 CALGreen) No. 182386 (Bicycle Parking Requirements) No. 184692 (2016 CALGreen) Defers to CALGreen 2016 M.M.	
5.106.4.1.1 Short-term bicycle parking. If the new project or addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack. Exception: Additions or alterations which add nine or fewer visitor vehicular parking spaces. [2016 CALGreen]	6.12.5.B.2. Bicycle Access, Bicycle Parking	M	MRDC 6.12.5.B.2.a No. 182849 (2013 CALGreen) No. 182386 (Bicycle Parking Requirements) No. 184692 (2016 CALGreen) Defers to CALGreen 2016 M.M	
5.106.4.1.2 Long-term bicycle parking. For new buildings with over 10 or more tenant-occupants or for additions or alterations that add 10 or more tenant vehicular parking spaces, provide secure bicycle parking for 5 percent of tenant vehicle parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall meet one of the following: 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; or 3. Lockable, permanently anchored bicycle lockers. Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates. [2016 CALGreen]	6.12.5.B.2. Bicycle Access, Bicycle Parking	M	MRDC 6.12.5.B.2.a No. 182849 (2013 CALGreen) No. 182386 (Bicycle Parking Requirements) No. 184692 (2016 CALGreen) Defers to CALGreen 2016 M.M	
A5.106.4.3 Changing rooms. For buildings with over 10 tenant-occupants, provide changing/shower facilities for tenant-occupants only in accordance with Table A5.106.4.3 or document arrangements with nearby changing/shower facilities. [2013 CALGreen]	[Not addressed in MRDC]	V	No. 182849 (2013 CALGreen) No. 182386 (Bicycle Parking Requirements) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.106.5.1 Designated parking for clean air vehicles. Provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table A5.106.5.1.1 or A5.106.5.1.2. [2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.106.5.1.1 Tier 1. Ten percent of total spaces. [BSC-CG] Provide 10 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as follows [in Table A5.106.5.1.1]. Note: Vehicles bearing Cleaning Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces[2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.106.5.1.2 Tier 2. Provide 12 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as follows [in Table A5.106.5.1.2]. A5.106.5.1.3 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/, VANPOOL/ EV Note: Vehicles bearing Cleaning Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. [2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
<p>A5.106.5.1.4 Vehicle designations. Building managers may consult with local community Transit Management Associations (TMAs) for methods of designating qualifying vehicles, such as issuing parking stickers.</p> <p>Notes:</p> <ol style="list-style-type: none"> Information on qualifying vehicles, car labeling regulations and DMV CAV decals may be obtained from the following sources: <ol style="list-style-type: none"> California DriveClean. California Air Resources Board. U.S. EPA fuel economy regulations and standards. DMV Registration Operations. Purchasing policy and refueling sites for low emitting vehicles for state employees use can be found at the Department of General Services. [2016 CALGreen] 	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.106.5.2 Designated parking for clean air vehicles. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2. [2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>5.106.5.2.1 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/ VANPOOL/EV</p> <p>Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. [2013 CALGreen]</p>	2.1.3 Metro Sustainability and Energy Policy	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
5.106.5.3 Electric Vehicle (EV) Charging. [N] Construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code and as follows: [2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Section 99.05.106.5.3 Defers to 2016 CALGreen M.M for all sections in this row LAMC Section 99.05.106.5.3.1 or LAMC Section 99.05.106.5.3.2	
<p>5.106.5.3.1 Single charging space requirements. [N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:</p> <ol style="list-style-type: none"> The type and location of the EVSE. A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. The raceway shall not be less than trade size 1". The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent. The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE. [2016 CALGreen] 	2.1.3 Metro Sustainability and Energy Policy	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Section 99.05.106.5.3 Defers to 2016 CALGreen M.M LAMC Section 99.05.106.5.3.1 or LAMC Section 99.05.106.5.3.2	
A5.106.5.3.1 Tier 1. Table A5.106.5.3.1 shall be used to determine the number of multiple charging spaces required for future installation of EVSE. Refer to Section 5.106.5.3.2 for design space requirements.	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Section 99.05.106.5.3 No CALGreen M.M. required for LAGBC	
<p>5.106.5.3.2 Multiple charging space requirements. [N] When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:</p> <ol style="list-style-type: none"> The type and location of the EVSE. The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent. Plan design shall be based upon 40-ampere minimum branch circuits. Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE. [2016 CALGreen] 	2.1.3 Metro Sustainability and Energy Policy	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Section 99.05.106.5.3 Defers to 2016 CALGreen M.M LAMC Section 99.05.106.5.3.1 or LAMC Section 99.05.106.5.3.2	
A5.106.5.3.2 Tier 2. Table A5.106.5.3.2 shall be used to determine if single or multiple charging space requirements apply for future installation of EVSE. When a single charging space is required, refer to Section 5.106.5.3.1 for design requirements. When multiple charging spaces are required, refer to Section 5.106.5.3.2 for design requirements. [2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Section 99.05.106.5.3 No CALGreen M.M. required for LAGBC	
<p>5.106.5.3.3 EV charging space calculation. [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.</p> <p>Exceptions: On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:</p> <ol style="list-style-type: none"> Where there is insufficient electrical supply. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project. [2016 CALGreen] 	2.1.3 Metro Sustainability and Energy Policy	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Section 99.05.106.5.3 Defers to 2016 CALGreen M.M LAMC Section 99.05.106.5.3.1 or LAMC Section 99.05.106.5.3.2	
5.106.5.3.4 Identification [N]. The service panel or subpanel circuit directory shall identify the reserved over-current protective device space(s) for future EV charges as "EV CAPABLE." The raceway termination location shall be permanently and visibly marked as "EV CAPABLE." [2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
A5.106.5.3.3 Identification. The service panel or subpanel circuit directory shall identify the reserved over-current protective device space(s) for future EV charges as “EV CAPABLE.” The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.”	2.1.3 Metro Sustainability and Energy Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.106.5.3.5 [N] Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles. Notes: 1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf . 2. See Vehicle Code Section 22511 EV charging spaces signage in offstreet parking facilities and for use of EV charging spaces. 3. The Governor’s Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents, and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf . [2016 CALGreen]	2.1.3 Metro Sustainability and Energy Policy	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M LAMC 99.05.106.5.3	
A5.106.6 Parking capacity. Design parking capacity to meet but not exceed minimum local zoning requirements. [2010 CALGreen]	3.9.6 Parking General	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.106.6.1 Reduce parking capacity. With the approval of the enforcement authority, employ strategies to reduce on-site parking area by: 1. Use of on street parking or compact spaces, illustrated on the site plan or 2. Implementation and documentation of programs that encourage occupants to carpool, ride share or use alternate transportation. Note: Strategies for programs may be obtained from local TMAs. [2010 CALGreen]	3.9.6 Parking General	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.106.7 Exterior wall shading. Meet requirements in the current edition of the California Energy Code and comply with either Section A5.106.7.1 or A5.106.7.2 for wall surfaces. If using vegetative shade, plant species documented to reach desired coverage within 5 years of building occupancy. [2013 CALGreen]	2.10.3 Energy Efficiency Building Features and Design	V	2.10.3 Energy Efficiency Building Features and Design No CALGreen M.M required for LAGBC	
A5.106.7.1 Fenestration. Provide vegetative or man-made shading devices for all fenestration on east-, south-, and west-facing walls. [2013 CALGreen]	2.10.3 Energy Efficiency Building Features and Design	V	2.10.3 Energy Efficiency Building Features and Design No CALGreen M.M required for LAGBC	
A5.106.7.1.1 East and west walls. Shading devices shall have 30-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. Calculate shade coverage on the summer solstice at 10AM fro east-facing walls and at 3PM for west-facing walls. [2013 CALGreen]	2.10.3 Energy Efficiency Building Features and Design	V	2.10.3 Energy Efficiency Building Features and Design No CALGreen M.M required for LAGBC	
A5.106.7.1.2 South walls. Shading devices shall have 60-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. [2013 CALGreen]	2.10.3 Energy Efficiency Building Features and Design	V	2.10.3 Energy Efficiency Building Features and Design No CALGreen M.M required for LAGBC	
A5.106.7.2 Opaque wall areas. Use wall surfacing with minimum SRI 25 (aged), for 75-percent of opaque wall areas. Exception: Use of vegetated shade in Wildland-Urban Interface Areas as defined in Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) of the California Building Code shall meet the requirements of that chapter. Note: If not available from the manufacturer, aged SRI value calculations may be found at the California Energy Commission’s website at www.energy.ca.gov . [2013 CALGreen]	2.10.3 Energy Efficiency Building Features and Design	V	2.10.3 Energy Efficiency Building Features and Design No CALGreen M.M required for LAGBC	
5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following: 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent. Exceptions: [N] 1. Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code. 2. Emergency lighting. [Refer to Table 5.106.8 (N)] 3. Building façade meeting the requirements of Table 140.7-B of the California Energy Code, Part 6. 4. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction. Note: [N] See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways. [2016 CALGreen]	2.7.3 Light and Glare 7.13.1 General 7.13.2 Normal Illuminance Values 7.13.3 Light Contrast 7.13.4 Emergency Illuminance Values 7.13.5 Emergency Lighting 7.13.8 Egress 7.13.9 Calculations	M	MRDC 2.7.3 No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	

APPENDIX B

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
		MANDATORY/ VOLUNTARY	ORDINANCE INFO	
<p>5.106.10 Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:</p> <ol style="list-style-type: none"> 1. Swales. 2. Water collection and disposal systems. 3. French drains. 4. Water retention gardens. 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. <p>Exception: Additions or alterations not altering the drainage path. [2016 CALGreen]</p>	<p>3.3.1.C. Utilities, General 3.7.1 Streets, General 3.7.4 Paving 3.8.1 Drainage, General 3.8.2 Hydrology 3.8.3 Design Storm Drainage Area 3.8.4 Rainfall Intensity 3.8.5 Surface Drainage 3.8.6 Drainage Structures 3.8.7 Storm Drains 3.8.8 Flood Control 3.9.1 Site Work and Parking Facilities 6.6.2 Landscaping Design Criteria</p>	M	<p>MRDC 3.8.3 No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M</p>	
<p>A5.106.11 Heat island effect. Reduce nonroof heat islands by Section A5.106.11.1 and roof heat islands by Section A5.106.11.2. [2013 CALGreen]</p>	<p>2.10.3 Energy Efficiency Building Features and Design</p>	V	<p>No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC</p>	
<p>A5.106.11.1 Hardscape alternatives. Use one or a combination of strategies 1 through 2 for 50 percent of site hardscape or put 50 percent of parking underground.</p> <ol style="list-style-type: none"> 1. Use light colored materials with an initial solar reflectance value of at least .30 as determined in accordance with ASTM Standards E 1918 or C 1549. 2. Use open-grid pavement system or previous or permeable pavement system. [2013 CALGreen] 	<p>2.10.3 Energy Efficiency Building Features and Design</p>	V	<p>No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC</p>	
<p>A5.106.11.2 Cool roof for reduction of heat island effect. Use roofing materials having a minimum aged solar reflectance and thermal emittance complying with Sections A5.106.11.2.1 and A5.106.11.2.2 or a minimum aged of Solar Reflectance Index (SRI) complying with Section A5.106.11.2.3 and as shown in Table A5.106.11.2.2 for Tier 1 or Table A5.106.11.2.2 for Tier 1 or Table A5.106.11.2.3 for Tier 2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot. 2. Roof area covered by building integrated solar photovoltaic and building integrated solar thermal panels. [2013 CALGreen] 	<p>2.10.3 Energy Efficiency Building Features and Design</p>	V	<p>No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC</p>	
<p>A5.106.11.2.1 Solar Reflectance. Roofing materials shall have a minimum aged solar reflectance equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2. If Cool Roof Rating Council (CRRC) testing for aged reflectance is not available for any roofing products, the aged value shall be determined using the CRRC certified initial value using the equation $aged = [0.2 + (initial - 0.2) \times soiling\ resistance]$, where initial = the initial solar reflectance and soiling resistance, listed by product type in Table A5.106.11.2.1.w</p> <p>Solar reflectance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code. [2013 CALGreen]</p>	<p>2.10.3 Energy Efficiency Building Features and Design</p>	V	<p>No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC</p>	
<p>A5.106.11.2.2 Thermal emittance. Roofing materials shall have a CRRC initial or aged thermal emittance as determined in accordance with ASTM E 408 or C 1371 equal to or greater than those specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2.</p> <p>Thermal emittance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code. [2013 CALGreen]</p>	<p>2.10.3 Energy Efficiency Building Features and Design</p>	V	<p>No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC</p>	
<p>A5.106.11.2.3 Solar reflectance index alternative. Solar Reflectance Index (SRI) equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2 may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.</p> <p>SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E 1980-01 as specified in the California Energy Code, Section 118(1)3. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A5.106.11.2.1 if the CRRC certified aged solar reflectance are not available. Certified Thermal emittance used in the SRI-WS may be either the initial value or the aged value listed in the CRRC.</p> <p>Solar reflectance and thermal emittance may also be certified by other supervisory entities approved by the Commission pursuant to Title 24, Part 1, California Administrative Code.</p> <p>Note: The Solar Reflectance Index Calculation Worksheet (SRI-WS) is available by contacting the Energy Standard Hotline at 1-800-772-3300, website at www.energy.ca.gov or by email at Title24@energy.state.ca.us. [2013 CALGreen]</p>	<p>2.10.3 Energy Efficiency Building Features and Design</p>	V	<p>No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC</p>	
<p>A5.106.11.3 Verification of Compliance. If no documentation is available, an inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values. [2013 CALGreen]</p>	<p>2.10.3 Energy Efficiency Building Features and Design</p>	V	<p>No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC</p>	

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2016 CALGREEN, ENERGY EFFICIENCY

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		CALIFORNIA ENERGY CODE
		MANDATORY/ VOLUNTARY	ORDINANCE INFO	
5.201.1 Scope [BSC-CG]. California Energy Code [DSA-SS]. For the purposes of mandatory energy efficient standards in this code, the California Energy Commission will continue to adopt mandatory building standards. [2016 CALGreen]	2.1.3.3. Metro Sustainability and Energy Policy 2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>Defers to 2016 CALGreen M.M.</i>	Title 24 Division 5.2
A5.203.1 Energy efficiency. Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and either A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings, as well as additions and alterations, are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Sections A5.203.1.1.2 or A5.203.1.2. [2013 CALGreen]	2.1.3.3. Metro Sustainability and Energy Policy 2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.203.1.1. Tier 1 and Tier 2 prerequisites. Each of the following efficiency measures is required for all applicable components of the building project. [2016 CALGreen]	2.1.3.3. Metro Sustainability and Energy Policy 2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.203.1.1.1 Outdoor lighting. Newly installed outdoor lighting power shall be no greater than 90 percent of the Allowed Outdoor Lighting Power. The Allowed Outdoor Lighting Power calculation is specified in Title 24, Part 6, Section 140.7 "Requirements For Outdoor Lighting." [2016 CALGreen]	2.1.3.3. Metro Sustainability and Energy Policy 2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.203.1.1.2 Service water heating in restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater installed a solar water-heating system with a minimum solar savings fraction of 0.15 or meet one of the exceptions. [2013 CALGreen]	[Not applicable]	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.203.1.2 Performance standard. Comply with one of the advanced efficiency levels indicated below. [2016 CALGreen]	2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.203.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building or addition does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required. 1. For building projects that include indoor lighting or mechanical systems, but not both: No greater than 95 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. 2. For building projects that include indoor lighting and mechanical systems: No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. [2016 CALGreen]	2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.203.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building or addition does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required. 1. For building systems that include indoor lighting or mechanical systems, but not both: No greater than 90 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. 2. For building projects that include indoor lighting and mechanical systems: No greater than 85 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. Note: For Energy Budget calculations, high-rise residential and hotel/motel buildings are considered nonresidential buildings. [2016 CALGreen]	2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.211.1 On-site renewable energy. Use on-site renewable energy sources such as solar, wind, geothermal, low-impact hydro, biomass and bio-gas for at least 1 percent of the electric power calculated as the product of the building service voltage and the amperage specified by the electrical service overcurrent protection device rating or 1kW, (whichever is greater), in addition to the electrical demand required to meet 1 percent of the natural gas and propane use. The building project's electrical service overcurrent protection device rating shall be calculated in accordance with the 2016 California Electrical Code. Natural gas or propane use is calculated in accordance with the 2016 California Plumbing Code. [2016 CALGreen]	2.1.3. Code and Standards 2.1.3.3. Metro Sustainability and Energy Policy 2.10.4. Green or Renewable Energy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.211.1.1 Documentation. Using a calculation method approved by the California Energy Commission, calculate the renewable on-site energy system to meet the requirements of Section A5.211.1, expressed in kW. Factor in net-metering, if offered by a local utility, on an annual basis. [2016 CALGreen]	2.1.3. Code and Standards 2.1.3.3. Metro Sustainability and Energy Policy 2.10.4. Green or Renewable Energy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.211.3 Green power. If offered by local utility provider, participate a renewable energy portfolio program that provides a minimum of 50-percent electrical power from renewable sources. Maintain documentation through utility billings. [2013 CALGreen]	2.10.4 Green or Renewable Energy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.212.1 Elevators and escalators. In buildings with more than one elevator or two escalators, provide systems and controls to reduce the energy demand of elevators and escalators as follows. Document systems operation and controls in the project specifications and commissioning plan. [2013 CALGreen].	6.14.6 Escalators 6.14.16 Elevators	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	

APPENDIX B

2016 CALGREEN, ENERGY EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		CALIFORNIA ENERGY CODE
		MANDATORY/ VOLUNTARY	ORDINANCE INFO	
A5.212.1.1 Elevators. Traction elevators shall have a regenerative drive system that feeds electrical power back into the building grid when the elevator is in motion. [2013 CALGreen].	6.14.6 Escalators 6.14.16 Elevators	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.212.1.1.1 Car lights and fan. A parked elevator shall turn off its car lights and fan automatically until the elevator is called for use. [2013 CALGreen].	6.14.6 Escalators 6.14.16 Elevators	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.212.1.2 Escalators. An escalator shall have a variable voltage variable frequency (VVVF) motor drive system that is fully regenerative when the escalator is in motion. [2013 CALGreen]	6.14.6 Escalators	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	
A5.212.1.4 Controls. Controls that reduce energy demand shall meet requirements of CCR, Title 8, Chapter 4, Subchapter 6 and shall not interrupt emergency operations for elevators required in CCR, Title 24, Part 2, California Building Code. [2013 CALGreen]	6.14.7 Elevators	V	<i>No CALGreen M.M required for LAGBC</i>	
A5.213.1 Steel Framing. Design for and employ techniques to avoid thermal bridging. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) <i>No CALGreen M.M required for LAGBC</i>	

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2016 CALGREEN, WATER EFFICIENCY & CONSERVATION

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		CALIFORNIA ENERGY CODE
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
<p>5.303.1 Meters. Separate submeters or metering devices shall be installed for the uses described in Sections 5.303.1.1 and 5.303.1.2.</p> <p>5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters or metering devices shall be installed as follows:</p> <ol style="list-style-type: none"> For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s). Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s). Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW). <p>5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or an addition that is projected to consume more than 1,000 gal/day. [2016 CALGreen]</p>		M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters shall be installed as follows:</p> <ol style="list-style-type: none"> For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s). Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s). Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW). [2016 CALGreen] 		M	Defers to 2016 CALGreen M.M.	
<p>5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day. [2016 CALGreen]</p>		M	Defers to 2016 CALGreen M.M.	
<p>A5.303.2.3.1 Tier 1 – 12 percent savings. [BSC] A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 12 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Standards Code. The 12-percent reduction in potable water use shall be demonstrated by one of the following methods:</p> <ol style="list-style-type: none"> Prescriptive method. Each plumbing fixture and fitting shall not exceed the maximum flow rate at greater than or equal to 12-percent reduction as specified in Table A5.303.2.3.1; or Performance method. A calculation demonstrating a 12-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided. [2013 CALGreen] 	TBD	TBD	TBD	
<p>A5.303.2.3.2 Tier 2 – 20-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. A calculation demonstrating a 20-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided. [2013 CALGreen]</p>	6.8 Toilet and Drainage Systems	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>A5.303.2.3.3 – 25-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 25 percent shall be provided. A calculation demonstrating a 25-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided. [2013 CALGreen]</p>	6.8 Toilet and Drainage Systems	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>A5.303.2.3.4 Nonpotable water systems for indoor use. Utilizing nonpotable water systems (such as captured rainwater, treated graywater, and recycled water) intended to supply water closets, urinals, and other allowed uses, may be used in the calculations demonstrating the 12-, 20- or 25-percent reduction. The nonpotable water systems shall comply with the current edition of the California Plumbing Code. [2013 CALGreen]</p>		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following: [2016 CALGreen]</p>	6.8 Toilet and Drainage Systems	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets. Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. [2016 CALGreen]</p>	6.8 Toilet and Drainage Systems	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>5.303.3.2.1 Wall mounted urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush. 5.303.3.2.2 Floor mounted urinals. The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush. [2016 CALGreen]</p>	6.8 Toilet and Drainage Systems	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads. [2016 CALGreen]</p>	6.8 Toilet and Drainage Systems	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
<p>5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time. Note: A hand-held shower shall be considered a showerhead. [2016 CALGreen]</p>	6.8 Toilet and Drainage Systems	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	

APPENDIX B

2016 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		CALIFORNIA ENERGY CODE
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
<p>A5.303.3 Appliances and fixture commercial application. Appliances and fixtures shall meet the following:</p> <ol style="list-style-type: none"> 1. Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the California Code of Regulations. 2. Dishwashers shall meet the following water use standards: <ol style="list-style-type: none"> a. Residential – ENERGY STAR <ol style="list-style-type: none"> i. Standard Dishwashers – 4.25 gallons per cycle. ii. Compact Dishwashers – 3.5 gallons per cycle. b. Commercial – Shall be in accordance with ENERGY STAR requirements. Refer to Table A5.303.3. 3. Ice makers shall be air cooled. 4. Food steamers shall be connectionless or boilerless - and shall consume no more than 2 gallons of water per pan per hour, including condensate water, for batch type steamers, and no more than 5 gallons water per pan per hour, including condensate water, for cook to order steamers. 5. The use and installation of water softeners that discharge to the community sewer system may be limited or prohibited by local agencies if certain conditions are met. 6. Combination ovens shall use a maximum of 1.5 gallons of water per hour per pan, including condensate water. 7. Commercial pre-rinse spray valves manufactured on or after January 1, 2006 shall function at equal to or less than 1.6 gpm (0.10 L/s) at 60 psi (414 kPa) and <ol style="list-style-type: none"> a. Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate b. Be equipped with an integral automatic shutoff c. Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gpm (0.08 L/s) or less. 8. Food waste pulping systems shall use no more than 2 gpm of potable water. <p>8.1 Note: potable water excludes on-site graywater use, such as dishwasher discharge water. [2016 CALGreen]</p>	[Not applicable.]	V	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi. [2013 CALGreen]	6.8 Toilet and Drainage Systems	V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction. [2013 CALGreen]	6.8 Toilet and Drainage Systems	V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi]. [2013 CALGreen]	6.8 Toilet and Drainage Systems	V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle. [2013 CALGreen]	6.8 Toilet and Drainage Systems	V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/20 [rim space (inches) at 60 psi]. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction. [2013 CALGreen]	6.8 Toilet and Drainage Systems	V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>5.303.4 Commercial kitchen equipment.</p> <p>5.303.4.1 Food waste disposers. Disposers shall either modulate the use of water to no more than 1 gpm when the disposer is not in use (not actively grinding food waste/no-load) or shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water. Note: This code section does not affect local jurisdiction authority to prohibit or require disposer installation. [2016 CALGreen]</p>	[Not applicable]	V	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.303.4 Water conserving plumbing fixtures and fittings.</p> <p>A5.303.4.1 Nonwater supplied urinals. Nonwater supplied urinals are installed in accordance with the California Plumbing Code. Where approved, hybrid urinals, as defined in Chapter 2, shall be considered waterless urinals. [2016 CALGreen]</p>		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.303.5 Areas of addition or alteration. For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Sections 5.303.3 and 5.303.4 shall apply to new fixtures in additions or areas of alteration to the building. [2016 CALGreen]	6.8 Toilet and Drainage Systems	M	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.303.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems for toilet flushing when recycled water is available as determined by the enforcement authority. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		CALIFORNIA ENERGY CODE
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
5.303.6 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code and in Chapter 6 of this code. [2016 CALGreen]	6.8. Toilet and Drainage Systems	V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.304.1 Scope. The provisions of Section 5.304, Outdoor Water Use reference the mandatory Model Water Efficiency Landscape Ordinance (MWELO) contained within Chapter 2.7, Division 2, Title 23, California Code of Regulations. [2016 CALGreen]	6.6.4.J. Landscaping, Design Criteria, Irrigation	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
5.304.2 Outdoor water use in landscape areas equal to or greater than 500 square feet. When water is used for outdoor irrigation for new construction projects with an aggregate landscape area equal to or greater than 500 square feet requiring a building or landscape permit, plan check or design review, one of the following shall apply: 1. A local water efficient landscape ordinance that is, based on evidence in the record, at least as effective in conserving water as the updated model ordinance adopted by the Department of Water Resources (DWR) per Government Code Section 65595 (c). The California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, California Code of Regulations. [2016 CALGreen]	6.6.4.J. Landscaping, Design Criteria, Irrigation	V	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.304.2 Outdoor potable water use. For new water service not subject to the provisions of Water Code Section 535, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas of at least 500 square feet but not more than 1,000 square feet (the level at which Section 5.304.2 applies). [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.304.3 Outdoor water use in rehabilitated landscape projects equal to or greater than 2,500 square feet. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review shall comply with Section 5.304.2, Items 1 or 2. [2016 CALGreen]	2.12.1 Biological, Flora 6.6.4.J. Landscaping, Design Criteria, Irrigation	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
5.304.4 Outdoor water use in landscape areas of 2,500 square feet or less. Any project with an aggregate landscape area of 2,500 square feet or less may comply with the performance requirements of MWELO or conform to the prescriptive compliance measures contained in MWELO's Appendix D. [2016 CALGreen]	2.12.1 Biological, Flora 6.6.4.J. Landscaping, Design Criteria, Irrigation	M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
5.304.5 Graywater or rainwater use in landscape areas. For projects using treated or untreated graywater or rainwater captured on site, any lot or parcel within the project that has less than 2,500 square feet of landscape and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with treated or untreated graywater or through stored rainwater captured on site is subject only to Appendix D Section (5). Notes: 1. DWR's Model Water Efficient Landscape Ordinance, definitions and supporting documents are available at the following link: http://water.ca.gov/wateruseefficiency/landscapeordinance/ 2. A water budget calculator is available at the following link: http://water.ca.gov/wateruseefficiency/landscapeordinance/ 3. The MWELO prescriptive compliance measure Appendix D may be found at the following link: http://water.ca.gov/wateruseefficiency/landscapeordiance/ . In addition, a copy of MWELO Appendix D may be found in Chapter 8 of this code. [2016 CALGreen]		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	
A5.304.5 Potable water elimination. Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in Section A5.304.5. [2013 CALGreen] [Excluded from 2016 CALGreen]		V	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan) No CALGreen M.M required for LAGBC	
5.304.6 Outdoor potable water use in landscape areas [DSA-SS]. For public schools and community colleges, landscape projects as described in Sections 5.304.6.1 and 5.304.6.2 shall comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, California Code of Regulations, except that the evapotranspiration adjustment factor (ETAF) shall be MRDC 6.6.4.J. Landscaping, Design Criteria, Irrigation 0.65 with an additional water allowance for special landscape areas (SLA) of 0.35. Exception: Any project with an aggregate landscape area of 2,500 square feet or less may comply with the prescriptive measures contained in Appendix D of the MWELO. [2016 CALGreen]		V	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.304.6.1 Newly constructed landscapes. [DSA-SS] New construction projects with an aggregate landscape area equal to or greater than 500 square feet. [2016 CALGreen]		V	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.304.6.2 Rehabilitated landscapes. [DSA-SS] Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 1,200 square feet. [2016 CALGreen]		V	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.304.6 Restoration of areas disturbed by construction. Restore all areas disturbed during construction by planting with local native and/or noninvasive vegetation. [2013 CALGreen]	6.6.2. Landscaping, Objectives 6.6.4. Landscaping, Design Criteria	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.304.7 Previously developed sites. On previously developed or graded sites, restore or protect at least 50 percent of the site area with adaptive and/or noninvasive vegetation. Projects complying with Section A5.106.3, Item 3 may apply vegetated roof surface to this calculation if the roof plants meet the definition of adaptive and noninvasive. Exception: Area of the building footprint is excluded from the calculation.. [2016 CALGreen]	6.6.2. Landscaping, Objectives 6.6.4. Landscaping, Design Criteria	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.304.8 Graywater irrigation system. Install graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins and laundry water. See California Plumbing Code. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		CALIFORNIA ENERGY CODE
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
<p>5.305.1 Graywater Ready. Waste piping shall be arranged to permit the discharge from the clothes washer, bathtub, showers, and bathroom/restroom wash basins to be used for a future graywater irrigation system. The flow from the fixtures shall be piped separately, and shall, at a minimum, be adequate to supply the irrigation demand. The point of connection between the graywater piping and other waste piping shall be accessible (as defined in LAMC Section 99.02.202) and provided with signage that is satisfactory to the Department. [2016 CALGreen/LAMC Language]</p> <p>*NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.</p>		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.-CALGreen code description based on version edited for LAGBC.	
<p>A5.305.1 Nonpotable water systems. Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the California Plumbing Code. [2013 CALGreen]</p>		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>5.305.2 Recycled Water Supply to Fixtures. When City-recycled water is available within 200 feet of the property line, 100% of water for water closets, urinals, floor drains, and process cooling and heating in that building shall come from City-recycled water. Recycled water systems shall be designed and installed in accordance with the Los Angeles Plumbing Code. A5.305.2 Irrigation systems. Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo) shall use recycled water. [2016 CALGreen]</p> <p>*NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.</p>	6.6.2. Landscaping, Objectives 6.6.4. Landscaping, Design Criteria	M	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M -CALGreen code description based on version edited for LAGBC.	
<p>A5.305.2 Irrigation systems. Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo) shall use recycled water. [2016 CALGreen]</p>	6.6.2. Landscaping, Objectives 6.6.4. Landscaping, Design Criteria	V	No. 182849 (2013 CALGreen) No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>5.305.3 Cooling Towers. Cooling towers shall comply with one of the following: 1. Cooling towers shall have a minimum of 6 cycles of concentration (blowdown); or 2. A minimum of 50% of makeup water supply shall come from non-potable water sources, including treated backwash. [2016 CALGreen]</p> <p>*NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.</p>	TBD	M	No. 184250 (Modify Requirements of Water Conservation Plan) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M CALGreen code description based on version edited for LAGBC.	
<p>5.305.4 Groundwater Discharge. Where groundwater is being extracted and discharged, a system for onsite reuse of the groundwater, shall be developed and constructed. Alternatively, the groundwater may be discharged to the sewer. [2016 CALGreen] *NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.</p>	TBD	M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M CALGreen code description based on version edited for LAGBC.	

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		METRO SUSTAINABILITY SPEC
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
A5.404.1 Wood framing. Employ advanced wood framing techniques or OVE, as recommended by the U.S. Department of Building Technology, State and Community Programs and as permitted by the enforcing agency. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.404.1.1 Wood framing. The OVE selected shall not conflict with structural framing methods or fire-rated assemblies required by the California Building Code. [2016 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.404.1.2 Framing specifications. Advanced framing techniques include the following: 1. Building design using 2-foot modules; 2. Spacing wall studs up to 24 inches on center; 3. Spacing floor and roof framing members up to 24 inches on center; 4. Using 2-stud corner framing and drywall clips or scrap lumber for drywall backing; 5. Eliminating solid headers in non-load-bearing walls; 6. Using in-line framing, aligning floor, wall and roof framing members vertically for direct transfer of loads; and 7. Using single lumber headers and top plates where appropriate. Note: Additional information can be obtained from the U.S. DOE Energy Efficiency and Renewable Energy (EERE) website. [2016 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.405.1 Regional materials. Compared to other products in a given product category, select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site. 1. For those materials locally manufactured, select materials manufactured using low embodied energy or those that will result in net energy savings over their useful life. 2. Regional materials shall make up at least 10 percent, based on cost, of total materials value. 3. If regional materials make up only part of a product, their values are calculated as percentages based on weight. 4. Provide documentation of the origin, net projected energy savings and value of regional materials. [2016 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.405.2 Bio-based materials. Select bio-based building materials and products made from solid wood, engineered wood, bamboo, wool, cotton, cork, straw, natural fibers, products made from crops (soy-based, corn-based) and other bio-based materials with at least 50-percent bio-based content. [2016 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.405.2.1 Certified wood products. Certified wood is an important component of green building strategies and the California Building Standards Commission will continue to develop a standard through the next code cycle. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.405.2.2 Rapidly renewable materials. Use materials made from plants harvested within a ten-year cycle for at least 2.5 percent of total materials value, based on estimated cost. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.405.3 Reused materials. Use salvaged, refurbished, refinished or reused materials for a minimum of 5 percent of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values. Note: Sources of some reused materials can be found at CalRecycle. See also Appendix A5, Division A5.1, Section A5.105.1 for on-site materials reuse. [2016 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.405.4 Recycled content. Use materials, equivalent in performance to virgin materials with a total (combined) recycled content value (RCV) of: Tier 1. The RCV shall not be less than 10 percent of the total material cost of the project, or use two products which meet the minimum recycled content levels in Table A5.405.4 for at least 75%, by cost, of all products in that category in the project. Required Total RCV (dollars) = Total Material Cost (dollars) × 10 percent (Equation A5. 4-1) Tier 2. The RCV shall not be less than 15 percent of the total material cost of the project, or use three products which meet the minimum recycled content levels in Table A5.405.4 for at least 75%, by cost, of all products in that category in the project. Required Total RCV (dollars) = Total Material Cost (dollars) × 15 percent (Equation A5. 4-2) For the purposes of this section, materials used as components of the structural frame shall not be used to calculate recycled content. The structural frame includes the load bearing structural elements such as wall studs, plates, sills, columns, beams, girders, joists, rafters and trusses. Notes: 1. Sample forms which allow user input and automatic calculation are located at www.hcd.ca.gov/CALGreen.html and may be used to simplify documenting compliance with this section and for calculating recycled content value of materials or assembly products. 2. Sources and recycled content of some recycled materials can be obtained from CalRecycle if not provided by the manufacturer. [2016 CALGreen]		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.405.4.1 Total material cost. Total material cost is the total estimated or actual cost of materials and assembly products used in the project. The required total recycled content value for the project (in dollars) shall be determined by Equation A5.4-1 or A5.4-2. Total material cost shall be calculated by using one of the methods specified below: 1. Simplified method. To obtain the total cost of the project multiply the square footage of the structure by the square foot valuation established by the enforcing agency. The total material cost is 45 percent of the total cost of the project. Use Equations A5.4-3A or A5.4-3B to determine total material costs using the simplified method. Total material costs = Project square footage × square foot valuation × 45 percent (Equation A5.4-3A) Total estimated or actual cost of project × 45 percent (Equation A5.4-3B) 2. Detailed method. To obtain the total cost of the project, add the estimated and/or actual costs of materials used for the project including the structure (steel, concrete, wood or masonry); the enclosure (roof, windows, doors and exterior walls); the interior walls, ceilings and finishes (gypsum board, ceiling tiles, etc.). The total estimated and/or actual costs shall not include fees, labor and installation costs, overhead, appliances, equipment, furniture or furnishings..5 Alternate method for concrete. [2016 CALGreen]		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		METRO SUSTAINABILITY SPEC
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
<p>A5.405.4.2 Determination of total recycled content value (RCV). Total RCV may be determined either by dollars or percentage as noted below.</p> <p>1. Total recycled content value for the project (in dollars). This is the sum of the recycled content value of the materials and/or assemblies considered and shall be determined by Equation A5.4-4. The result of this calculation may be directly compared to Equations A5.4-1 and A5.4-2 to determine compliance with Tier 1 or Tier 2 prerequisites. Total Recycled Content Value (dollars) = (RCVM + RCVA) (Equation A5.4-4)</p> <p>2. Total recycled content value for the project (by percentage). This is expressed as a percentage of the total material cost and shall be determined by Equations A5.4-4 and A5.4-5. The result of this calculation may be directly compared for compliance with Tier 1 (10 percent) or Tier 2 (15 percent) prerequisites.</p> <p>Total Recycled Content Value (percent) = [Total Recycled Content Value (dollars) ÷ Total Material Cost (dollars)] × 100 (Equation A5.4-5) [2016 CALGreen]</p>		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.4.3 Determination of recycled content value of materials (RCVM). The recycled content value of each material (RCVM) is calculated by multiplying the cost of material, as defined by the recycled content. See Equations A5.4-6 and A5.4-7. RCVM (dollars) = Material cost (dollars) × RCM (percent) (Equation A5.4-6)</p> <p>RCM (percent) = Postconsumer content percentage + (1/2) Preconsumer content percentage (Equation A5.4-7)</p> <p>Notes:</p> <p>1. If the postconsumer and preconsumer recycled content is provided in pounds, Equation A5.4-7 may be used, but the final result (in pounds) must be multiplied by 100 to show RCM as a percentage.</p> <p>2. If the manufacturer does not separately identify the pre-consumer and post-consumer recycled content of a material but reports it as a total single percentage, the total amount shall be considered preconsumer recycled material. [2016 CALGreen]</p>		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.4.4 Determination of recycled content value of assemblies – (RCVA). Recycled content value of assemblies is calculated by multiplying the total cost of assembly by the total recycled content of the assembly (RCA), and shall be determined by Equation A5.4-8. RCVA (dollars) = Assembly cost (dollars) × Total RCA (percent) (Equation A5.4-8)</p> <p>If not provided by the manufacturer, Total RCA (percent) is the sum (Σ) of the Proportional Recycled Content (PRCM) of each material in the assembly. RCA shall be determined by Equation A4.4-9. RCA = Σ PRCM (Equation A5.4-9)</p> <p>PRCM of each material may be calculated by one of two methods using the following formulas:</p> <p>Method 1: Recycled content (Postconsumer and Preconsumer) of each material provided in percentages PRCM (percent) = Weight of material (percent) × RCM (percent) (Equation A5.4-10) Weight of material (percent) = [Weight of material (lbs) ÷ Weight of assembly (lbs)] × 100 (Equation A5.4-11) RCM (percent) = Postconsumer content percentage + (1/2) Preconsumer content percentage (See Equation A5.4-7)</p> <p>Method 2: Recycled content (Postconsumer and Preconsumer) provided in pounds PRCM (percent) = [RCM (lbs) Weight of material (lbs)] × 100 (Equation A5.4-12) RCM (lbs) = Postconsumer content (lbs) + (1/2) Preconsumer content (lbs) (Equation A5.4-13)</p> <p>Note: If the manufacturer does not separately identify the pre-consumer and post-consumer recycled content of a material but reports it as a total single percentage, the total amount shall be considered preconsumer recycled material. [2016 CALGreen]</p>		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.4.5 Alternate method for concrete. When Supplementary Cementitious Materials (SCMs), such as fly ash or ground blast furnace slag cement, are used in concrete, an alternate method of calculating and reporting recycled content in concrete products shall be permitted. When determining the recycled content value, the percent recycled content shall be multiplied by the cost of the cementitious materials only, not the total cost of the concrete. [2016 CALGreen]</p>		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.5 Cement and concrete. Use cement and concrete made with recycled products and complying with the following sections: [2010 CALGreen]</p>		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.5.1 Cement. Cement shall comply with one of the following standards:</p> <ol style="list-style-type: none"> Portland cement shall meet ASTM C 150. Blended hydraulic cement shall meet ASTM C 595. Other Hydraulic Cements shall meet ASTM C 1157. [2010 CALGreen] 		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.5.2 Concrete. Unless otherwise directed by the Engineer of Record, use concrete manufactured with cementitious materials in accordance with Sections A5.405.5.2.1 and A5.405.5.2.1.1, as approved by the enforcing agency. [2010 CALGreen]</p>		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.5.2.1 Supplementary cementitious materials (SCMs). Use concrete made with one or more supplementary cementitious materials (SCM) conforming to the following standards:</p> <ol style="list-style-type: none"> Fly ash conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete. Slag cement (GGBFS) conforming to ASTM C989, Specification for Use in Concrete and Mortars. Silica fume conforming to ASTM C1240, Specification for Silica Fume Used in Cementitious Mixtures. Natural pozzolan conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete. Blended supplementary cementitious materials conforming to ASTM C1697, Standard Specification for Blended Supplementary Cementitious Materials. The amount of each SCM in the blend will be used separately in calculating Equation A5.4-1. If Class C fly ash is used in the blend, it will be considered to be "SL" for the purposes of satisfying the equation. Ultra-fine fly ash (UFFA) conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete and the chemical and physical requirements found in table A5.405.5.2.1.A Metakaolin conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete, and the chemical and physical requirements found in table A5.405.5.2.1.B Other materials with comparable or superior environmental benefits, as approved by the Engineer of Record and enforcing authority. [2016 CALGreen] 		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.5.2.1.1 Mix design equation. Use any combination of one or more SCMs, satisfying Equation A4.5-14.</p> <p>Exception: Minimums in mix designs approved by the Engineer of Record may be lower where high early strength is needed. $F/25 + SL/50 + UF/12 \geq 1$ (Equation A5.4-14) where:</p> <p>F = Fly ash, natural pozzolan or other approved SCM as a percent of total cementitious material for concrete on the project.</p> <p>SL = GGBFS, as a percent of total cementitious material for concrete on the project.</p> <p>UF = Silica fume, metakaolin or UFFA, as a percent of total cementitious material for concrete on the project. [2016 CALGreen]</p>		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>A5.405.5.3 Additional means of compliance. Any of the following measures shall be permitted to be employed for the production of cement or concrete, depending on their availability and suitability, in conjunction with Section A5.405.5.2. [2010 CALGreen]</p>		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
<p>A5.405.5.3.1 Cement. The following measures may be used in the manufacture of cement. [2010 CALGreen]</p>		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		METRO SUSTAINABILITY SPEC
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
A5.405.5.3.1.1 Alternative fuels. Where permitted by state or local air quality standards. [2010 CALGreen]		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
A5.405.5.3.1.2 Alternative power. Use alternate electric power generated at the cement plant and/or green power purchased from the utility meeting the requirements of Section A5.211. [2010 CALGreen]		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
A5.405.5.3.1.3 Alternative ingredients. Use inorganic processing additions and limestone meeting ASTM C 150. [2010 CALGreen]		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
A5.405.5.3.2 Concrete. The following measures may be used in the manufacture of concrete, [2010 CALGreen]		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
A5.405.5.3.2.1 Alternative energy. Renewable or alternative energy meeting the requirements of Section A5.211. [2010 CALGreen]		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
A5.405.5.3.2.2 Recycled aggregates. Concrete made with one or more of the materials listed in Section A5.405.5.3.2.2. [2010 CALGreen]		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
A5.405.5.3.2.3 Mixing water. Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C 1602. [2010 CALGreen]		V	No. 182849 (CALGreen 2013) No CALGreen M.M required for LAGBC	
A5.405.5.3.2.4 High strength concrete. Concrete elements designed to reduce their total size compared to standard 3,000 psi concrete, as approved by the Engineer of Record. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.406.1 Choice of materials. Compared to other products in a given product category, choose materials proven to be characterized by one or more of the following. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.406.1.1 Service life. Select materials for longevity and minimal deterioration under conditions of use. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.406.1.2 Reduced maintenance. Select materials that require little, if any, finishing. For those with surface protection, choose materials that do not require frequent applications of toxic or malodorous finishes. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.406.1.3 Recyclability. Select materials that can be re-used or recycled at the end of their service life. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code, Section 1403.2 (Weather Protection) and California Energy Code, Section 150 (Mandatory Features and Devices), manufacturer's installation instructions or local ordinance, whichever is more stringent. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.407.2 Moisture Control. Employ moisture control measures by the following methods. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent irrigation spray on structures. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following: 1. An installed awning at least 4 feet in depth. 2. The door is protected by a roof overhang at least 4 feet in depth. 3. The door is recessed at least 4 feet. 4. Other methods which provide equivalent protection. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	

APPENDIX B

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		METRO SUSTAINABILITY SPEC
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent. [2016 CALGreen]	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy 11.9 Waste Disposal Facilities	M	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182986 (Solid Waste Services and Facilities Diverting 70%) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. [2016 CALGreen]	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy 11.9 Waste Disposal Facilities	M	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182986 (Solid Waste Services and Facilities Diverting 70%) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section. Note: The owner or contractor shall make the determination if the construction and demolition waste material will be diverted by a waste management company. Exceptions to Sections 5.408.1.1 and 5.408.1.2: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. 5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency. [2016 CALGreen]	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy 11.9 Waste Disposal Facilities	M	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182986 (Solid Waste Services and Facilities Diverting 70%) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency. [2016 CALGreen]	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen)) No CALGreen M.M required for LAGBC	
5.408.1.4 Documentation. Provide documentation of the waste management plan that meets the requirements listed in Sections 5.408.1.1 through 5.408.1.3, and the plan is accessible to the enforcement authority. [2013 CALGreen]	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen)) No CALGreen M.M required for LAGBC	
5.408.2 Universal waste. [A] Additions and alterations to a building or tenant space that meet the scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste materials shall be included in the construction documents. Note: Refer to the Universal Waste Rule link at: http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/OEAR-A_REGS_UWR_FinalText.pdf [2016 CALGreen]	2.11.3 Hazardous Materials	V	No. 184692 (2016 CALGreen)) No CALGreen M.M required for LAGBC	
5.408.3 Excavated soil and land clearing debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed. Exception: Reuse, either on-or off-site, of vegetation or soil contaminated by disease or pest infestation. [2016 CALGreen]		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
A5.408.3.1 Enhanced construction waste reduction-Tier 1. Divert to recycle or salvage at least 65% of nonhazardous construction and demolition waste generated at the site. Any mixed recyclables that are sent to mixed-waste recycling facilities shall include a qualified third party verified facility average diversion rate. Verification of diversion rates shall meet minimum certification eligibility guidelines, acceptable to the local enforcing agency. [2016 CALGreen]		V	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (2013 CALGreen) No. 182986 (Solid Waste Services and Facilities Diverting 70%) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		METRO SUSTAINABILITY SPEC
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
A5.408.3.1.1 Enhanced construction waste reduction-Tier 2. Divert to recycle or salvage at least 80% of nonhazardous construction waste generated at the site. [2016 CALGreen]		V	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (2013 CALGreen) No. 182986 (Solid Waste Services and Facilities Diverting 70%) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.408.3.1.2 Verification of compliance. A copy of the completed waste management report or documentation of certification of the waste management company utilized shall be provided. Exceptions: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. [2016 CALGreen]		V	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (2013 CALGreen) No. 182986 (Solid Waste Services and Facilities Diverting 70%) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.409.1 General. Life cycle assessment shall be ISO 14044 compliant. The service life of the building and materials assemblies shall not be less than 60 years. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	01 35 63
A5.409.2 Whole building life cycle assessment. Conduct a whole building life assessment, including operating energy, showing that the building project achieves at least a 10-percent improvement for at least three of the impacts listed in Section A5.409.2.2, one of which shall be climate change, compared to a reference building of similar size, function, complexity and operating energy performance, and meet the 2013 California Energy Code at a minimum. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.409.2.1 Building components. The building envelope, structural elements, including footings and foundations, interior ceilings, walls, and floors; and exterior finishes shall be considered in the assessment. Exceptions: 1. Plumbing, mechanical and electrical systems and controls; fire and smoke detection and alarm systems and controls; and conveying systems. 2. Interior finishes are not required to be included. Notes: 1. Software for calculating whole building life cycle assessments includes those found at the Athena Institute website (Impact Estimator software), the PE International website (GaBi software), and the PRe Consultants website (SimaPro software). 2. Interior finishes, if included, may be assessed using the NIST BEES tool. [2016 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.409.3 Materials and system assemblies. If whole building analysis of the project is not elected, select a minimum of 50% of materials or assemblies based on life cycle assessment of at least three for the impacts listed in Section A5.409.2.2, one of which shall be climate change. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	01 35 63
A5.409.4 Substitution for prescriptive standards. Performance of a life cycle assessment completed in accordance with Section A5.409.2 may be substituted for other prescriptive provisions of Division A5.4, including those made mandatory through local adoption of Tier 1 or Tier 2 in Division A5.6. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
A5.409.5 Verification of compliance. Documentation of compliance shall be provided as follows: 1. The assessment is performed in accordance with ISO 14044. 2. The project meets the requirements of other parts of Title 24. 3. A copy of the analysis shall be made available to the enforcement authority. 4. A copy of the analysis and any maintenance or training recommendations shall be included in the operation and maintenance manual. See notes for available tools. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive. Exception: Rural jurisdictions that meet and apply for the exemption in Public Resource Code 42649.82(a)(2)(A) et seq. shall be exempt from the organic waste portion of this section. [2016 CALGreen]		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.1.1 Additions. [A] All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30 percent or more in floor area, shall provide recycling areas on site. Exception: Additions within a tenant space resulting in less than a 30-percent increase in the tenant space floor area. [2016 CALGreen]		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act). Note: A sample ordinance for use by local agencies may be found in Appendix A of this document at the CalRecycle's website. [2013 CALGreen]	[Not applicable]	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	

APPENDIX B

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		METRO SUSTAINABILITY SPEC
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
<p>5.410.2 Commissioning. [N] For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. All occupancies other than I-occupancies and L-occupancies shall comply with the California Energy Code as prescribed in California Energy Code Section 120.8. For I-occupancies that are not regulated by OSHPD or I-occupancies and L-occupancies that are not regulated by California Energy Code Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply. Commissioning requirements shall include:</p> <ol style="list-style-type: none"> 1. Owner's or owner representative's project treatments. 2. Basis of design. 3. Commissioning measures shown in the construction documents. 4. Commissioning plan. 5. Functional performance testing. 6. Documentation and training. 7. Commissioning report. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Unconditioned warehouses of any size. 2. Areas under 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses. 3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1. 4. Open parking garages of any size, or open parking garage areas, of any size, within a structure. <p>Note: For the purposes of this section, unconditioned shall mean a building, area, or room which does not provide heating or air conditioning. [2016 CALGreen]</p>		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
<p>5.410.2.1 Owner's Project Requirements (OPR). [N] The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following:</p> <ol style="list-style-type: none"> 1. Environmental and sustainability goals. 2. Energy efficiency goals. 3. Indoor environmental quality requirements. 4. Project program, including facility functions and hours of operation, and need for after hours operation. 5. Equipment and systems expectations. 6. Building occupant and operation and maintenance (O&M) personnel expectations. [2016 CALGreen] 		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
<p>5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:</p> <ol style="list-style-type: none"> 1. Heating, ventilation, air conditioning (HVAC) systems and controls. 2. Indoor lighting system and controls. 3. Water heating system. 4. Renewable energy systems. 5. Landscape irrigation systems. 6. Water reuse systems. [2016 CALGreen] 		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
<p>5.410.2.3 Commissioning plan. [N] Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning shall include the following:</p> <ol style="list-style-type: none"> 1. General project information. 2. Commissioning goals. 3. Systems to be commissioned. Plans to test systems and components shall include: <ol style="list-style-type: none"> a. An explanation of the original design intent. b. Equipment and systems to be tested, including the extent of tests c. Functions to be tested. d. Conditions under which the test shall be performed. e. Measurable criteria for acceptable performance. 4. Commissioning team information. 5. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included. [2013 CALGreen] 		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
<p>5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made. [2013 CALGreen]</p>		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
<p>5.410.2.5 Documentation and training. [N] A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations. [2013 CALGreen]</p>		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	
<p>5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the following:</p> <ol style="list-style-type: none"> 1. Site information, including facility description, history and current requirements. 2. Site contract information. 3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log. 4. Major systems. 5. Site equipment inventory and maintenance notes. 6. A copy of verifications required by the enforcing agency or this code. 7. Other resources and documentation, if applicable. [2013 CALGreen] 		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	

APPENDIX B

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		METRO SUSTAINABILITY SPEC
		MANDATORY/VOLUNTARY	ORDINANCE INFO	
5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following: 1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces). 2. Review and demonstration of servicing/preventive maintenance. 3. Review of the information in the systems manual. 4. Review of the record drawings on the system/equipment. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative. Note: Guidance on implementation and enforcement of commissioning requirements, including sample compliance forms and templates, may be found in Appendix A6, Division A6.1, of this code. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting systems shall include, as applicable to the project: 1. HVAC systems and controls. 2. Indoor and outdoor lighting and controls. 3. Water heating systems. 4. Renewable energy systems. 5. Landscape irrigation systems. 6. Water reuse systems. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system as determined by the enforcing agency. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.4.5 Operation and maintenance (O&M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O&M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	
5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M	

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2016 CALGREEN, ENVIRONMENTAL QUALITY

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
		MANDATORY / VOLUNTARY	ORDINANCE INFO			
5.503.1 Fireplaces. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances. [2016 CALGreen]	[Not applicable]	M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.503.1.1 Woodstoves. Woodstoves and pellet stoves shall comply with US EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. [2016 CALGreen]	[Not applicable]	V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
5.504.1 Temporary ventilation. The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30 percent based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy, or, if the building is occupied during alteration, at the conclusion of construction. [2013 CALGreen]		M	No. 184692 (2016 CALGreen) - Defers to 2016 CALGreen M.M.			
A5.504.1 Indoor air quality (IAQ) during construction. Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2.		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.1.1 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 and as listed in Items 1 and 2 in Section A5.504.1.2.		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.1.2 Additional IAQ measures. Employ additional measures as listed in Items 1 through 5 in Section A5.504.1.2. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.2 IAQ postconstruction. Flush out the building per Section A5.504.2 prior to occupancy or if the building is occupied. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.2.1 IAQ Testing. A testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the United State Environmental Protection Agency (U.S. EPA) and in accordance with Section [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.2.1.2. Retest as required in Section A5.504.2.1.3. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.2.1.1 Maximum levels of contaminants. Allowable levels of contaminant concentrations measured by testing shall not exceed the following: 1. Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per million; 2. Formaldehyde: 27 parts per billion; 3. Particulates (PM10): 50 micrograms per cubic meter; 4. 4-Phenylcyclohexene (4-PCH): 6.5 micrograms per cubic meter; and 5. Total Volatile Organic Compounds (TVOC): 300 micrograms per cubic meter. A5.504.2.1.2 Test protocols. Testing of indoor air quality should include the elements listed in Items 1 through 4. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.2.1.3 Noncomplying building areas. For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedures until testing demonstrates compliance. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6. [2016 CALGreen]		M	No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.1 Adhesives, sealants, caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards: 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products as specified in subsection 2, below. 2. Aerosol adhesives and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		

APPENDIX B

2016 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
		MANDATORY / VOLUNTARY	ORDINANCE INFO			
5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss as defined in Subsections 4.21, 4.36 and 4.37 of the 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply. [2010 CALGreen]	6.7.3 Materials, General Criteria	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product-Weighted MIR (PWMIR) Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of the California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following: 1. Manufacturer's product specification. 2. Field verification of on-site product containers. [2010 CALGreen]		M	No. 182849 (CALGreen 2013) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet at least one of the following testing and product requirements: 1. Carpet and Rug Institute's Green Label Plus Program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as CDPH Standard Method V1.1 or Specification 01350); 3. NSF/ANSI 140 at the Gold level or higher; 4. Scientific Certifications Systems Sustainable Choice; or 5. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database. [2013 CALGreen]	6.7 Materials	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program. [2013 CALGreen]	6.7 Materials	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 5.504.4.1. [2013 CALGreen]	6.7 Materials	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxic Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.) Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5. [2013 CALGreens]	6.7 Materials	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.5.1 No added formaldehyde, Tier 1. Use composite wood products approved by the ARB as no-added formaldehyde (NAF) based resins or ultra-low emitting formaldehyde (ULEF) resins. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.5.3 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following: 1. Product certifications and specifications. 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 5. Other methods acceptable to the enforcing agency.		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). [2013 CALGreen]	6.7 Materials	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.7 Resilient flooring systems, Tier 1 [BSC]. For 90 percent of floor area receiving resilient flooring, install resilient flooring that is: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). [2016 CALGreen]	6.7 Materials	V	No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		

APPENDIX B

2016 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
		MANDATORY / VOLUNTARY	ORDINANCE INFO			
A5.504.4.7.1 Resilient flooring systems, Tier 2 [BSC]. For 100 percent of floor area receiving resilient flooring, install resilient flooring that is: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). Exception: Allowance may be permitted in Tier 2 for up to 5-percent specialty purpose flooring. [2016 CALGreen]	6.7 Materials	V	No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits. [2016 CALGreen]		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits)		
A5.504.4.8 Thermal insulation, Tier 1. Comply with the following standards: 1. Chapters 12-13 (Standards for Insulating Material) in Title 24, Part 12, the California Referenced Standards Code. 2. The VOC-emission limits defined in 2009 CHPS criteria and listed on its High Performance Products Database. 3. California Department of Public Health 2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as Specification 01350). [2016 CALGreen]		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits)		
A5.504.4.8.1 Thermal insulation, Tier 2. Thermal insulation, No-added Formaldehyde. Install thermal insulation which complies with Tier 1 plus does not contain any added formaldehyde. [2016 CALGreen]		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits)		
A5.504.4.8.2 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits. [2016 CALGreen]		V	No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits)		
A5.504.4.9.1 Verification of compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits. Note: Products compliant with CHPS criteria certified under the Greenguard Children & Schools program may also be used. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits)		
A5.504.4.9 Acoustical ceilings and wall panels. Comply with Chapter 8 in Title 24, Part 2, the California Building Code and with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1168 (VOC Limits)		
A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.5.1 Entryway systems. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in Section A5.504.5.1. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, such as garages, janitorial or laundry rooms and copy or printing rooms, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in Section A5.504.5.2. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a Minimum Efficiency Reporting Value (MERV) of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. Exceptions: 1. An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow. 2. Existing mechanical equipment. 5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating. [2013 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
A5.504.5.3.1 Filters, Tier 1. In mechanically ventilated buildings, provide regularly occupied areas of the building with air infiltration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 11. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.504.5.3.1.1 Filters, Tier 2. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 13. [2013 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
5.504.7 Environmental tobacco smoke (ETS) control. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the prohibitions. [2010 CALGreen]	6.10 Signage and Graphics	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.		Section 7596 – 7598	
5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.1. For additional measures not applicable to low-rise residential occupancies, see Section 5.407.2 of this code. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			

APPENDIX B

2016 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
		MANDATORY / VOLUNTARY	ORDINANCE INFO			
5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements for Ventilation) of the California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8. [2013 CALGreen]	8.1.5. Underground Station Public Area Ventilation	V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			Section 120.1
5.506.2 Carbon dioxide (CO ₂) monitoring. For buildings or additions equipped with demand control ventilation, CO ₂ sensors and ventilation controls shall be specified and installed in accordance with the requirements of the 2013 California Energy Code, Section 120(c)(4). [2013 CALGreen]	9.15.1. Gas Monitoring Equipment	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			Section 12 (c)(4)
A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.507.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.507.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants by Items 1 and 2 in Section A5.507.1.1.2. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.507.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces, such as classrooms and conference rooms. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.507.3 Views. Achieve direct line of sight to the outdoor environment via vision glazing between 2'6" and 7'6" above finish floor for building occupants in 90 percent of all regularly occupied areas as demonstrated by plan view and section cut diagrams. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.507.3.1 Interior office spaces. Entire areas of interior office spaces may be included in the calculation if at least 75 percent of each area has direct line of sight to perimeter vision glazing. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
A5.507.3.2 Multi-occupant spaces. Include in the calculation the square footage with direct line of sight to perimeter vision glazing. Exceptions to Sections A5.507.2 and A5.507.3. Copy/printing rooms, storage areas, mechanical spaces, restrooms, auditoria and other intermittently or infrequently occupied spaces or spaces where daylight would interfere with use of the space. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC			
5.507.4 Acoustical control. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413 or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2. Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, enclosed parking structures and utility buildings. [2013 CALGreen]	2.8 Noise and Vibration	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.507.4.1 Exterior noise transmission, prescriptive method. Wall and floor-ceiling assemblies exposed to the noise source making up the building envelope shall have exterior wall and roof ceiling assemblies meeting a composite STC rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. [2013 CALGreen]	2.8 Noise and Vibration	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Leq-1Hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30). [2013 CALGreen]	2.8 Noise and Vibration	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.507.4.2 Performance method. For buildings located as defined in Sections 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building envelope or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation. [2013 CALGreen]	2.8 Noise and Vibration	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior. [2013 CALGreen]	2.8 Noise and Vibration	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record. [2013 CALGreen]	2.8 Noise and Vibration	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			
5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40. [2013 CALGreen]	2.8 Noise and Vibration	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.			

APPENDIX B

2016 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
		MANDATORY / VOLUNTARY	ORDINANCE INFO			
5.508.1 Ozone depletion and global warming reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1418 (Halon Emissions from Fire Extinguishing Equipment)		
5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1418 (Halon Emissions from Fire Extinguishing Equipment)		
5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons. [2010 CALGreen]		M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1418 (Halon Emissions from Fire Extinguishing Equipment)		
A5.508.1.3 Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that does not contain HCFCs. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1415 (Reduction of Refrigerant Emissions)		
A5.508.1.4 Hydrofluorocarbons (HFCs). Install HVAC complying with either of the following: 1. Install HVAC, refrigeration and fire suppression equipment that do not contain HFCs or that do not contain HFCs with a global warming potential greater than 150. 2. Install HVAC and refrigeration equipment that limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1. [2010 CALGreen]		V	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) No CALGreen M.M required for LAGBC	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1418 (Halon Emissions from Fire Extinguishing Equipment)		
5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities. Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO ₂), and potentially other refrigerants. valves with a brass or steel body are permitted for use. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.1 Refrigerant piping. Piping compliant with the California Mechanical Code shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.1.1 Threaded pipe. Threaded connections are permitted at the compressor rack. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.1.2 Copper pipe. Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.1.2.1 Anchorage. 1/4 inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.1.3 Flared tubing connections. Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil. Exception: Single-flared tubing connections may be used with a multi-ring seal coated with industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long radius elbows. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.2 Valves. Valves and fittings shall comply with the California Mechanical Code and as follows. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.2.1.1 Pressure detection. A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)

APPENDIX B

2016 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE		SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
		MANDATORY / VOLUNTARY	ORDINANCE INFO			
5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for use. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.2.2.1 Valve caps. For systems with a refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.2.2.2 Seal caps. If designed for it, the cap shall have a neoprene O-ring in place. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.2.2.2.1 Chain tethers. Chain tethers to fit over the stem are required for valves designed to have seal caps. Exception: Valves with seal caps that are not removed from the valve during stem operation. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.3 Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.3.1. Coil coating. Consideration shall be given the heat transfer efficiency of coil coating to maximize energy efficiency. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.4 Refrigerant receivers. The system shall be pressure tested during installation prior to evacuation and charging. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.5 Pressure testing. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device that indicates the level of refrigerant in the receiver. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks, and retest for pressure using the same gauge.. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than a +/- one pound pressure change from 300 psig, measured with the same gauge. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.6 Evacuation. The system shall be evacuated after pressure testing and prior to charging. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50 microns), and hold for 30 minutes. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold for 30 minutes. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
5.508.2.6.3 Third vacuum. Pull a third vacuum down to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period. [2013 CALGreen]	[Not applicable]	M	No. 182849 (2013 CALGreen) No. 184692 (2016 CALGreen) Defers to 2016 CALGreen M.M.	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2013 CALGREEN, PLANNING & DESIGN

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
5.106.1 Storm water pollution prevention. Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of storm water runoff from the construction activities through local ordinance in Section 5.106.1.1 or Best management practices (BMP) in Section 5.106.1.2.	Hydrology and Water Quality 3.8.1 Drainage, General 3.3.2.C. Storm Drains	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit)	
5.106.1.1 Local Ordinance. Comply with a lawfully enacted stormwater management and/or erosion control ordinance.	Hydrology and Water Quality 3.8.1 Drainage, General 3.3.2.C. Storm Drains 3.8.5 Drainage, Surface Drainage 6.8.7 Drainage in Stations	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit)	
5.106.1.2 Best management practices (BMP). Prevent the loss of topsoil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP. 1. Soil loss BMP that should be considered for implementation as appropriate for each project include, but are not limited to, the following: a. Scheduling construction activity. b. Preservation of natural features, vegetation and soil. c. Drainage swales or lined ditches to control water flow. d. Mulching or hydroseeding to stabilize disturbed soils. e. Erosion control to protect slopes. f. Protection of storm drain outlets (gravel bags or catch basin inserts). g. Perimeter sediment control (perimeter silt fence, fiber rolls). h. Sediment trap or sediment basin to retain sediments on site. i. Stabilized construction exits. j. Wind erosion control. k. Other soil loss BMP acceptable to the enforcing agency. 2. Good housekeeping BMP to manage construction equipment, materials and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following: a. Material handling and waste management. b. Building materials stockpile management. c. Management of washout areas (concrete, paints, stucco, etc.). d. Control of vehicle/equipment fueling to contractor's staging area. e. Vehicle and equipment cleaning performed off site. f. Spill prevention and control. g. Other housekeeping BMP acceptable to the enforcing agency.	Hydrology and Water Quality 3.8.1 Drainage, General 3.8.5 Drainage, Surface Drainage 6.8.7 Drainage in Stations	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit)	Rule 403 (Fugitive Dust Emissions)
A5.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section A5.106.2.1 and storm water runoff quality by Section A5.106.2.2 or by local requirements, whichever are stricter.	2.11.2 Hydrology and Water Quality 3.3.2.C. Storm Drains 3.8.1 Drainage, General 3.8.2 Hydrology 3.8.3 Design Storm Drainage Area 3.8.4 Rainfall Intensity 3.8.5 Surface Drainage 3.8.6 Drainage Structures 3.8.7 Storm Drains 3.8.8 Flood Control	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit)	
A5.106.2.1 Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions. Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25-percent decrease in rate and quantity.	3.3.2.C. Storm Drains 3.8.1 Drainage, General 3.8.2 Hydrology 3.8.3 Design Storm Drainage Area 3.8.4 Rainfall Intensity 3.8.5 Surface Drainage 3.8.6 Drainage Structures 3.8.7 Storm Drains 3.8.8 Flood Control	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit)	
A5.106.2.2 Storm water runoff quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).	2.11.2 Hydrology and Water Quality 3.3.2.C. Storm Drains 3.8.1 Drainage, General	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit)	
A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in Section A5.106.3.	2.11.2 Hydrology and Water Quality 3.3.2.C. Storm Drains 3.8.1 Drainage, General	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen) No. 183833 (Municipal Separate Storm Sewer [MS4] Permit)	

APPENDIX B

2013 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
<p>5.106.4 Bicycle parking. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2.</p> <p>5.106.4.1 Bicycle parking. [BSC] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.</p> <p>5.106.4.1.1 Short-term bicycle parking. [BSC] If the new project or addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.</p> <p>Exception: Additions or alterations which add nine or fewer visitor vehicular parking spaces. Exception: Additions or alterations which add nine or fewer visitor vehicular parking spaces.</p> <p>5.106.4.1.2 Long-term bicycle parking. For buildings with over 10 tenant-occupants or for additions or alterations that add 10 or more tenant vehicular parking spaces, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall meet one of the following:</p> <ol style="list-style-type: none"> 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; or 3. Lockable, permanently anchored bicycle lockers. <p>Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.</p>	6.12.5.B.2. Bicycle Access, Bicycle Parking	MRDC 6.12.5.B.2.a No. 182849 (2013 CALGreen) No. 182386 (Bicycle Parking Requirements)	
A5.106.4.3 Changing rooms. For buildings with over 10 tenant-occupants, provide changing/shower facilities in accordance with Table A5.106.4.3 or document arrangements with nearby changing/shower facilities.	[Not addressed in MRDC]	No. 182849 (2013 CALGreen) No. 182386 (Bicycle Parking Requirements)	
A5.106.5.1 Designated parking for fuel-efficient vehicles. Provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table A5.106.5.1.1 or A5.106.5.1.2.	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.1.1 Tier 1. Ten percent of total spaces. [BSC] Provide 10 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as follows [in Table A5.106.5.1.1].			
A5.106.5.1.2 Tier 2. Provide 12 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as follows [in Table A5.106.5.1.2].	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.1.3 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/ VANPOOL/ EV Note: Vehicles bearing Cleaning Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.1.4 Vehicle designations. Building managers may consult with local community Transit Management Associations (TMAs) for methods of designating qualifying vehicles, such as issuing parking stickers. Notes: 1. Information on qualifying vehicles, car labeling regulations and DMV SOV decals may be obtained from the following sources: a. California DriveClean. b. California Air Resources Board. c. U.S. EPA efficiency standards. d. DMV Registration Operations, (916) 657-6678 and ARB Public Information, (626) 575-6858. 2. Purchasing policy and refueling sites for low emitting vehicles for state employees use can be found at the Department of General Services.	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
5.106.5.2 Designated parking. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2.	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
5.106.5.2.1 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/ VANPOOL/ EV Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.3 Electric vehicle (EV) charging. Construction shall comply with Sections A5.106.5.3.1 or 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code Section 406.9, the California Electrical Code and as follows:	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.3.1 Tier 1. Table A5.106.5.3.1 shall be used to determine if single or multiple charging space requirements apply for future installation of EVSE. When a single charging space is required per Table A5.106.5.3.1, refer to Section 5.106.5.3.1 for design requirements. When multiple charging spaces are required, refer to Section 5.106.5.3.2 for design requirements.	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.3.2 Tier 2. Table A5.106.5.3.2 shall be used to determine the number of multiple charging space required for future installation of EVSE. Refer to Section 5.106.5.3.2 for design space requirements.	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.3.3 Identification. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charges as "EV CAPABLE." The raceway termination location shall be permanently and visibly marked as "EV CAPABLE."	2.1.3 Metro Sustainability and Energy Policy	No. 182849 (2013 CALGreen)	
A5.106.5.3.4. Future charging spaces qualify as designated parking as described in Section A5.106.5.1 Designated parking. Notes: 1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf . 2. See Vehicle Code Section 22511 EV charging spaces signage in offstreet parking facilities and for use of EV charging spaces. 3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents, and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf .			
A5.106.6 Parking capacity. Design parking capacity to meet but not exceed minimum local zoning requirements.	3.9.6 Parking General	No. 182849 (2013 CALGreen)	
A5.106.6.1 Reduce parking capacity. With the approval of the enforcement authority, employ strategies to reduce on-site parking area by: 1. Use of on street parking or compact spaces, illustrated on the site plan or 2. Implementation and documentation of programs that encourage occupants to carpool, ride share or use alternate transportation.			
A5.106.7 Exterior wall shading. Meet requirements in the current edition of the California Energy Code and comply with either Section A5.106.7.1 or A5.106.7.2 for wall surfaces. If using vegetative shade, plant species documented to reach desired coverage within 5 years of building occupancy.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (2013 CALGreen)	

APPENDIX B

2013 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
A5.106.7.1 Fenestration. Provide vegetative or man-made shading devices for all fenestration on east-, south-, and west-facing walls.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (2013 CALGreen)	
A5.106.7.1.1 East and west walls. Shading devices shall have 30-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. Calculate shade coverage on the summer solstice at 10AM fro east-facing walls and at 3PM for west-facing walls.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (2013 CALGreen)	
A5.106.7.1.2 South walls. Shading devices shall have 60-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (2013 CALGreen)	
A5.106.7.2 Opaque wall areas. Use wall surfacing with minimum SRI 25 (aged), for 75-percent of opaque wall areas. Exceptions: Use of vegetated shade in Wildland-Urban Interface Areas as defined in Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) of the California Building Code shall meet the requirements of that chapter. Note: If not available from the manufacturer, aged SRI value calculations may be found at the California Energy Commission's website at www.energy.ca.gov .	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (2013 CALGreen)	
5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following: 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent. Exceptions: [N] 1. Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code. 2. Emergency lighting. [Refer to Table 5.106.8 (N)] Note: [N] See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways.	2.7.3 Light and Glare 7.13.1 General 7.13.2 Normal Illuminance Values 7.13.3 Light Contrast 7.13.4 Emergency Illuminance Values 7.13.5 Emergency Lighting 7.13.8 Egress 7.13.9 Calculations	No. 182849 (2013 CALGreen)	
5.106.10 Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following: 1. Swales. 2. Water collection and disposal systems. 3. French drains. 4. Water retention gardens. 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. Exception: Additions or alterations not altering the drainage path.	3.3.1.C. Utilities, General 3.7.1 Streets, General 3.7.4 Paving 3.8.1 Drainage, General 3.8.2 Hydrology 3.8.3 Design Storm Drainage Area 3.8.4 Rainfall Intensity 3.8.5 Surface Drainage 3.8.6 Drainage Structures 3.8.7 Storm Drains 3.8.8 Flood Control 3.9.1 Site Work and Parking Facilities 6.6.2 Landscaping Design Criteria	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (2013 CALGreen)	
A5.106.11 Heat island effect. Reduce nonroof heat islands and roof heat islands as follows: A5.106.11.1 Hardscape alternatives. Use one or a combination of strategies 1 through 2 for 50 percent of site hardscape or put 50 percent of parking underground. 1. Use light colored materials with an initial solar reflectance value of at least .30 as determined in accordance with ASTM Standards E 1918 or C 1549. 2. Use open-grid pavement system or pervious or permeable pavement system.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (CALGreen 2013)	
A5.106.11.2 Cool roof for reduction of heat island effect. Use roofing materials having a minimum aged solar reflectance, thermal emittance complying with Sections A5.106.11.2.2 and A5.106.11.2.3 or a minimum aged of Solar Reflectance Index (SRI) ₃ equal to or greater than values shown I Table A5.106.11.2.2 – Tier 1 or A5.106.11.2.3 – Tier 2 Exceptions: 1. Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 lbs/sf. 2. Roof area covered by building integrated solar photovoltaic and building integrated solar thermal panels.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (CALGreen 2013)	
A5.106.11.2.1 Solar Reflectance. Roofing materials shall have a minimum aged solar reflectance equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2. If Cool Roof Rating Council (CRRC) testing for aged reflectance is not available for any roofing products, the aged value shall be determined using the CRRC certified initial value using the equation $\rho_{aged} = [0.2 + \beta [p_{initial} - 0.2]]$, where $p_{initial}$ = the initial solar reflectance and soiling resistance, β , listed by product type in Table A5.106.11.2.1. Solar reflectance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (CALGreen 2013)	
A5.106.11.2.2 Thermal emittance. Roofing materials shall have a CRRC initial or aged thermal emittance as determined in accordance with ASTM E 408 or C 1371 equal to or greater than those specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2. Thermal emittance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code.	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (CALGreen 2013)	
A5.106.11.2.3 Solar reflectance index alternative. Solar Reflectance Index (SRI) equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2 may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance. SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E 1980-01 as specified in the California Energy Code, Section 118(i)3. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A5.106.11.2.1 if the CRRC certified aged solar reflectance are not available. Certified Thermal emittance used in the SRI-WS may be either the initial value or the aged value listed in the CRRC. Solar reflectance and thermal emittance may also be certified by other supervisory entities approved by the Commission pursuant to Title 24, Part 1, California Administrative Code. Note: The Solar Reflectance Index Calculation Worksheet (SRI-WS) is available by contacting the Energy Standard Hotline at 1-800-772-3300, website at www.energy.ca.gov or by email at Title24@energy.state.ca.us .	2.10.3 Energy Efficiency Building Features and Design	No. 182849 (CALGreen 2013)	
A5.106.11.3 Verification of Compliance. If no documentation is available, an inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values. [2013 CALGreen]			

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2013 CALGREEN, ENERGY EFFICIENCY

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	CALIFORNIA ENERGY CODE
5.205.201.1 Scope [BSC]. California Energy Code [DSA-SS]. For the purposes of mandatory energy efficient standards in this code, the California Energy Commission will continue to adopt mandatory building standards.	2.1.3.3. Metro Sustainability and Energy Policy 2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	No. 182849 (CALGreen 2013)	Title 24 Division 5.2
A5.203.1 Energy efficiency. Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and either A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings, as well as additions and alterations, are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Sections A5.203.1.1.2 or A5.203.1.2.	2.1.3.3. Metro Sustainability and Energy Policy 2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	No. 182849 (CALGreen 2013)	
A5.203.1.1.1 Outdoor lighting. Newly installed outdoor lighting power is no greater than 90 percent of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	2.1.3.3. Metro Sustainability and Energy Policy 2.10.2. Energy Efficient Fixtures and Equipment 2.10.3. Energy Efficient Building Features and Design	No. 182849 (CALGreen 2013)	
A5.203.1.1.2 Service water heating in restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater installed a solar water-heating system with a minimum solar savings fraction of 0.15 or meet one of the exceptions.	[Not applicable to Metro projects]	No. 182849 (CALGreen 2013)	
A5.203.1.1.3 Functional areas where compliance with residential lighting standards is required. For newly constructed high-rise residential dwelling units and hotel and motel guest rooms, indoor lighting complies with the applicable requirements in Appendix A4 Residential Voluntary Measures, Division A4.2 - Energy Efficiency, Section A4.203.1.1.3. For additions and alterations to high-rise residential dwelling units and hotel and motel guest rooms, indoor lighting alterations to high-rise residential dwelling units and hotel and motel guest rooms, indoor lighting complies with the applicable requirements in Appendix A4 Residential Voluntary Measures, Division A4.2 - Energy Efficiency, Section A4.204.1.1.1	[Not applicable to Metro projects]	No. 182849 (CALGreen 2013)	
A5.203.1.2.1 Tier 1. For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 95 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building.	[Not applicable to Metro projects]	No. 182849 (CALGreen 2013)	
A5.203.1.2.2 Tier 2. For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 85 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building.	[Not applicable to Metro projects]	No. 182849 (CALGreen 2013)	
A5.211.1 On-site renewable energy. Use on-site renewable energy for at least 1 percent of the electrical service overcurrent protection device rating calculated in accordance with the 2013 California Electrical Code or 1KW, whichever is greater, in addition to the electrical demand required to meet 1 percent of natural gas and propane use calculated in accordance with the 2013 California Plumbing Code.	2.1.3. Code and Standards 2.1.3.3. Metro Sustainability and Energy Policy 2.10.4. Green or Renewable Energy	No. 182849 (CALGreen 2013)	
A5.211.1.1 Documentation. Calculate renewable on-site system to meet the requirements of Section A5.211.1. Factor in net-metering, if offered by local utility, on an annual basis.	2.1.3. Code and Standards 2.1.3.3. Metro Sustainability and Energy Policy 2.10.4. Green or Renewable Energy	No. 182849 (CALGreen 2013)	
A5.211.3 Green power. Participate in the local utility's renewable energy portfolio program that provides a minimum of 50-percent electrical power from renewable sources. Maintain documentation through utility billings.	2.10.4 Green or Renewable Energy	No. 182849 (CALGreen 2013)	
A5.212.1 Elevators and escalators. In buildings with more than one elevator or two escalators, provide systems and controls to reduce the energy demand of elevators and escalators as follows. Document systems operation and controls in the project specifications and commissioning plan.	6.14.6 Escalators 6.14.16 Elevators	No. 182849 (CALGreen 2013)	
A5.212.1.1 Elevators. Traction elevators shall have a regenerative drive system that feeds electrical power back into the building grid when the elevator is in motion.	6.14.6 Escalators 6.14.16 Elevators	No. 182849 (CALGreen 2013)	
A5.212.1.1.1 Car lights and fan. A parked elevator shall turn off its car lights and fan automatically until the elevator is called for use.	6.14.6 Escalators 6.14.16 Elevators	No. 182849 (CALGreen 2013)	
A5.212.1.2 Escalators. An escalator shall have a variable voltage variable frequency (VVVF) motor drive system that is fully regenerative when the escalator is in motion.	6.14.6 Escalators	No. 182849 (CALGreen 2013)	
A5.212.1.4 Controls. Controls that reduce energy demand shall meet requirements of CCR, Title 8, Chapter 4, Subchapter 6 and shall not interrupt emergency operations for elevators required in CCR, Title 24, Part 2, California Building Code.	6.14.16 Elevators		
A5.213.1 Steel Framing. Design for and employ techniques to avoid thermal bridging.		No. 182849 (CALGreen 2013)	

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2013 CALGREEN, WATER EFFICIENCY & CONSERVATION

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	CALIFORNIA ENERGY CODE
<p>5.303.1 Meters. Separate meters shall be installed for the uses described in Sections 5.303.1.1 and 5.303.1.2.</p> <p>5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters or metering devices shall be installed as follows:</p> <ol style="list-style-type: none"> For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day, including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s). Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s). Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW). 		No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or an addition that is projected to consume more than 1,000 gal/day (3800 L/day).		No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.2 Water Reduction. Plumbing fixtures shall meet the maximum flow rate values shown in Table 5.303.2.3. Exception: Buildings that demonstrate 20-percent overall water use reduction. In this case, a calculation demonstrating a 20-percent reduction in building "water use base-line," as established in Table 5.303.2.2, shall be provided.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.2.1 Areas of addition and alteration. For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Section 5.303.2 and Section 5.303.3 shall apply to new fixtures in additions or areas of alterations to the building.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.303.2.3.1 Tier 1 - 30-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 30 percent shall be provided.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.303.2.3.2 Tier 2 - 35-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 35 percent shall be provided.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.303.2.3.3 40-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 40 percent shall be provided.(Calculate savings by Water Use Worksheets)	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.303.2.3.4 Nonpotable water systems for indoor use. Utilizing nonpotable water systems (such as captured rainwater, treated graywater, and recycled water) intended to supply water closets, urinals, and other allowed uses, may be used in the calculations demonstrating the 30-, 35- or 40-percent reduction. The nonpotable water systems shall comply with the current edition of the California Plumbing Code.		No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets. Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.3.2 Urinals. The effective flush volume of urinals shall not exceed 0.5 gallons per flush.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time. Note: A hand-held shower shall be considered a showerhead.	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
<p>A5.303.3 Appliances and fixture commercial application. Appliances and fixtures shall meet the following:</p> <ol style="list-style-type: none"> Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the California Code of Regulations. Dishwashers shall meet the criteria in Section A5.303.3(2)(a) and (b). Ice makers shall be air cooled. Food steamers shall be connectionless or boilerless. [BSC] The use and installation of water softeners that discharge to the community sewer system may be limited or prohibited by local agencies if certain conditions are met. Combination ovens shall not consume more than 10 gph (38 L/h) in the full operational mode. Commercial pre-rinse spray valves manufactured on or after January 1, 2006 shall function at equal to or less than 1.6 gpm (0.10 L/s) at 60 psi (414 kPa) and 301 <ol style="list-style-type: none"> Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate Be equipped with an integral automatic shutoff Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gpm (0.08 L/s) or less. 	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.3.4 Faucets and Fountains			
5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.			

APPENDIX B

2013 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	CALIFORNIA ENERGY CODE
5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.			
5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi].			
5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle.			
5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per minute/20 [rim space (inches) at 60 psi]. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.			
5.303.4 Wastewater reduction. [N] Each Building shall reduce by 20 percent wastewater by one of the following methods: 1. [BSC, DSA-SS] The installation of water-conserving fixtures (water closets, urinal) meeting the criteria established in Sections 5.303.2 or 5.303.3. 2. [BSC] Utilizing nonpotable water systems [captured rainwater, graywater, and municipally treated wastewater (recycled water) complying with the current addition of the California Plumbing Code or other methods described in Section A5.304.8].	6.8 Toilet and Drainage Systems	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.303.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems for toilet flushing when recycled water is available as determined by the enforcement authority.		No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.303.6 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1401.1 of the California Plumbing Code and in Chapter 6 of this code.	6.8. Toilet and Drainage Systems	No. 182849 (CALGreen 2013)	
5.304.1 Water budget. A water budget shall be developed for landscape irrigation use that installed in conjunction with a new building or an addition or alteration conforms to the local water efficient landscape ordinance or to the California Department of Water Resources Model Water Efficient Landscape Ordinance where no local ordinance is applicable. Note: Prescriptive measures to assist in compliance with the water budget are listed in Sections 492.5 through 492.8, 492.10 and 492.11 of the ordinance, which may be found: http://www.water.ca.gov/wateruseefficiency/docs/WaterOrdSec492.cfm .	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182847 (Los Angeles California Plumbing Code Table 1401.1) No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.304.2 Outdoor potable water use. For new water service, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas of at least 1,000 square feet but not more than 5,000 square feet, separate submeters shall be installed for outdoor potable water use. Applies to additions or alterations.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.304.2.1 Outdoor potable water use. For new water service not subject to the provisions of Water Code Section 535, separate meters or submeters shall be installed for outdoor potable water use for landscaped areas of at least 500 square feet but not more than 1,000 square feet (the level at which Section 5.304.2 applies).	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
5.304.3 Irrigation design. In new nonresidential projects with at least 1,000 square feet but not more than 2,500 square feet of landscaped area (the level at which the MLO applies), install irrigation controllers and sensors which include the following criteria and meet manufacturer's recommendations. Applies to additions or alterations.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 No. 184250	
5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following: 1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. 2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 No. 184250	
A5.304.4 Potable water reduction. Provide water-efficient landscape irrigation design that reduces the use of potable water beyond the initial requirements for plant installation and establishment in accordance with Section A5.304.4.1 or A5.304.4.2. Calculations for the reduction shall be based on the water budget developed pursuant to Section 5.304.1.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.304.4.1 Tier 1 - Reduce the use of potable water to a quantity that does not exceed 60 percent of ETo times the landscape area.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.304.4.2 Tier 2 - Reduce the use of potable water to a quantity that does not exceed 55 percent of ETo times the landscape area. Note: Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in A5.304.4.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.304.4.3 Verification of compliance. A calculation demonstrating the applicable potable water use reduction required by this section shall be provided.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.304.5 Potable water elimination. Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in Section A5.304.5.	6.6.4.J. Landscaping, Design Criteria, Irrigation	No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	
A5.304.6 Restoration of areas disturbed by construction. Restore all areas disturbed during construction by planting with local native and/or noninvasive vegetation.	2.12.1 Biological, Flora 6.6.4. Landscaping, Design Criteria	No. 182849 (CALGreen 2013)	
A5.304.7 Previously developed sites. On previously developed or graded sites, restore or protect at least 50 percent of the site area with native and/or noninvasive vegetation.	2.12.1 Biological, Flora 6.6.4. Landscaping, Design Criteria	No. 182849 (CALGreen 2013)	
A5.304.8 Graywater irrigation system. Install graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins and laundry water. See California Plumbing Code.		No. 182849 (CALGreen 2013)	
A5.305.1 Nonpotable water systems. Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the California Plumbing Code.		No. 182849 (CALGreen 2013)	
A5.305.2 Irrigation systems. Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo) shall use recycled water.	6.6.2. Landscaping, Objectives 6.6.4. Landscaping, Design Criteria	No. 181899 (Low Impact Development [LID] Strategies) No. 182849 (CALGreen 2013) No. 184250 (Modify Requirements of Water Conservation Plan)	

APPENDIX B

CALGreen and Metro Rail Design Criteria Summaries

2013 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	METRO SUSTAINABILITY SPEC
A5.404.1 Wood framing. Employ advanced wood framing techniques or OVE, as permitted by the enforcing agency.		No. 182849 (CALGreen 2013)	
A5.405.1 Regional materials. Select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site, meeting the criteria listed in Section A5.405.1.		No. 182849 (CALGreen 2013)	
A5.405.2 Bio-based materials. Select bio-based building materials per Section A5.405.2.1 or A5.405.2.2.		No. 182849 (CALGreen 2013)	
A5.405.2.1 Certified wood products. Certified wood is an important component of green building strategies and the California Building Standards Commission will continue to develop a standard through the next code cycle.		No. 182849 (CALGreen 2013)	
A5.405.2.2 Rapidly renewable materials. Use materials made from plants harvested within a ten-year cycle for at least 2.5 percent of total materials value, based on estimated cost.		No. 182849 (CALGreen 2013)	
A5.405.3 Reused materials. Use salvaged, refurbished, refinished or reused materials for at least 5 percent of the total value, based on estimated cost of materials on the project.		No. 182849 (CALGreen 2013)	
A5.405.4 Recycled content. Use materials, equivalent in performance to virgin materials, with a total (combined) recycled content value (RCV) of: Tier 1. The RCV shall not be less than 10 percent of the total material cost of the project. Tier 2. The RCV shall not be less than 15 percent of the total material cost of the project. Note: Use the equations in the subsections for calculating total materials cost, recycled content, RCV of materials and assemblies, and total RCV.		No. 182849 (CALGreen 2013)	
A5.405.5 Cement and concrete. Use cement and concrete made with recycled products and complying with the following sections:		No. 182849 (CALGreen 2013)	
A5.405.5.1 Cement. Cement shall comply with one of the following standards: 1. Portland cement shall meet ASTM C 150. 2. Blended hydraulic cement shall meet ASTM C 595. 3. Other Hydraulic Cements shall meet ASTM C 1157.		No. 182849 (CALGreen 2013)	
A5.405.5.2 Concrete. Unless otherwise directed by the Engineer of Record, use concrete manufactured with cementitious materials in accordance with Sections A5.405.5.2.1 and A5.405.5.2.1.1, as approved by the enforcing agency.		No. 182849 (CALGreen 2013)	
A5.405.5.2.1 Supplementary cementitious materials (SCMs). Use concrete made with one or more of the SCMs listed in Section A5.405.5.2.1.		No. 182849 (CALGreen 2013)	
A5.405.5.2.1.1 Mix design equation. Use any combination of one or more SCMs, satisfying Equation A4.5-14. Exception: Minimums in mix designs approved by the Engineer of Record may be lower where high early strength is needed.		No. 182849 (CALGreen 2013)	
A5.405.5.3 Additional means of compliance. Any of the following measures shall be permitted to be employed for the production of cement or concrete, depending on their availability and suitability, in conjunction with Section A5.405.5.2.		No. 182849 (CALGreen 2013)	
A5.405.5.3.1 Cement. The following measures may be used in the manufacture of cement.		No. 182849 (CALGreen 2013)	
A5.405.5.3.1.1 Alternative fuels. Where permitted by state or local air quality standards.		No. 182849 (CALGreen 2013)	
A5.405.5.3.1.2 Alternative power. Alternate electric power generated at the cement plant and/or green power purchased from the utility meeting the requirements of Section A5.211.		No. 182849 (CALGreen 2013)	
A5.405.5.3.2 Concrete. The following measures may be used in the manufacture of concrete,		No. 182849 (CALGreen 2013)	
A5.405.5.3.2.1 Alternative energy. Renewable or alternative energy meeting the requirements of Section A5.211.		No. 182849 (CALGreen 2013)	
A5.405.5.3.2.2 Recycled aggregates. Concrete made with one or more of the materials listed in Section A5.405.5.3.2.2.		No. 182849 (CALGreen 2013)	
A5.405.5.3.2.3 Mixing water. Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C 1602.		No. 182849 (CALGreen 2013)	
A5.405.5.3.2.4 High strength concrete. Concrete elements designed to reduce their total size compared to standard 3,000 psi concrete, as approved by the Engineer of Record.		No. 182849 (CALGreen 2013)	
A5.406.1.1 Service life. Select materials for longevity and minimal deterioration under conditions of use.		No. 182849 (CALGreen 2013)	
A5.406.1.3 Recyclability. Select materials that can be re-used or recycled at the end of their service life.		No. 182849 (CALGreen 2013)	
5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code, Section 1403.2 (Weather Protection) and California Energy Code, Section 150 (Mandatory Features and Devices), manufacturer's installation instructions or local ordinance, whichever is more stringent.		No. 182849 (CALGreen 2013)	
5.407.2 Moisture Control. Employ moisture control measures by the following methods.		No. 182849 (CALGreen 2013)	
5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent irrigation spray on structures.		No. 182849 (CALGreen 2013)	
5.407.2.2 Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings as follows.		No. 182849 (CALGreen 2013)	
5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following: 1. An installed awning at least 4 feet in depth. 2. The door is protected by a roof overhang at least 4 feet in depth. 3. The door is recessed at least 4 feet. 4. Other methods which provide equivalent protection.		No. 182849 (CALGreen 2013)	
5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.		No. 182849 (CALGreen 2013)	

APPENDIX B

2013 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	METRO SUSTAINABILITY SPEC
5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy 11.9 Waste Disposal Facilities	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (CALGreen 2013) No. 182986 (Solid Waste Services and Facilities Diverting 70%)	
5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. Exceptions to Sections 5.408.1.1 and 5.408.1.2: 1. Excavated soil and land-clearing debris 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy 11.9 Waste Disposal Facilities	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (CALGreen 2013) No. 182986 (Solid Waste Services and Facilities Diverting 70%)	
5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction waste material diverted from the landfill complies with this section. Exceptions to Sections 5.408.1.1 and 5.408.1.2: 1. Excavated soil and land-clearing debris 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy 11.9 Waste Disposal Facilities	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (CALGreen 2013) No. 182986 (Solid Waste Services and Facilities Diverting 70%)	
5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 50 percent minimum requirement as approved by the enforcing agency.	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy 11.9 Waste Disposal Facilities	No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (CALGreen 2013) No. 182986 (Solid Waste Services and Facilities Diverting 70%)	
5.408.1.4 Documentation. Provide documentation of the waste management plan that meets the requirements listed in Sections 5.408.1.1 through 5.408.1.3, and the plan is accessible to the enforcement authority.	2.1.3.2. Metro Demolition and Construction Debris Recycling and Reuse Policy	No. 182849 (CALGreen 2013)	
5.408.3 Excavated soil and land clearing debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. Exception: Reuse, either on-or off-site, of vegetation or soil contaminated by disease or pest infestation.		No. 182849 (CALGreen 2013)	
A5.408.3.1 Enhanced construction waste reduction-Tier 1 [BSC]. Divert to recycle or salvage at least 65% of nonhazardous construction and demolition waste generated at the site.		No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (CALGreen 2013) No. 182986 (Solid Waste Services and Facilities Diverting 70%)	
A5.408.3.1.1 Enhanced construction waste reduction-Tier 2 [BSC]. Divert to recycle or salvage at least 80% of nonhazardous construction waste generated at the site.		No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (CALGreen 2013) No. 182986 (Solid Waste Services and Facilities Diverting 70%)	
A5.408.3.1.2 Verification of compliance. A copy of the completed waste management report or documentation of certification of the waste management company utilized shall be provided. Exceptions: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets.		No. 174706 (Solid Waste Collection by City-Registered Waste Haulers to Meet AB 939 and City Goal of 70% Diversion by Year 2020) No. 181519 (City-Certified Construction/Demo Waste Facilities) No. 182849 (CALGreen 2013) No. 182986 (Solid Waste Services and Facilities Diverting 70%)	
A5.409.1 General. Life cycle assessment shall be ISO 14044 compliant. The service life of the building and materials assemblies shall not be less than 60 years.		No. 182849 (CALGreen 2013)	01 35 63
A5.409.2 Whole building life cycle assessment. Conduct a whole building life assessment, including operating energy, showing that the building project achieves at least a 10-percent improvement for at least three of the impacts listed in Section A5.409.2.2, one of which shall be climate change, compared to a reference building.		No. 182849 (CALGreen 2013)	
A5.409.3 Materials and system assemblies. If whole building analysis of the project is not elected, select a minimum of 50% of materials or assemblies based on life cycle assessment of at least three for the impacts listed in Section A5.409.2.2, one of which shall be climate change.		No. 182849 (CALGreen 2013)	01 35 63

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2013 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	METRO SUSTAINABILITY SPEC
A5.409.4 Substitution for prescriptive standards. Performance of a life cycle assessment completed in accordance with Section A5.409.2 may be substituted for other prescriptive provisions of Division A5.4, including those made mandatory through local adoption of Tier 1 or Tier 2 in Division A5.6.		No. 182849 (CALGreen 2013)	
A5.409.5 Verification of compliance. Documentation of compliance shall be provided as follows: 1. The assessment is performed in accordance with ISO 14044. 2. The project meets the requirements of other parts of Title 24. 3. A copy of the analysis shall be made available to the enforcement authority. 4. A copy of the analysis and any maintenance or training recommendations shall be included in the operation and maintenance manual. See notes for available tools.		No. 182849 (CALGreen 2013)	
5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling including (at a minimum) paper, corrugated cardboard, plastics and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.		No. 182849 (CALGreen 2013)	
5.410.1.1 Additions. [A] All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30 percent or more in floor area, shall provide recycling areas on site. Exception: Additions within a tenant space resulting in less than a 30-percent increase in the tenant space floor area.		No. 182849 (CALGreen 2013)	
5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waster Reuse and Recycling Access Act of 1991 (Act). Note: A sample ordinance for use by local agencies may be found in Appendix A of this document at the CalRecycle's website.	[Not applicable]	No. 182849 (CALGreen 2013)	
5.410.2 Commissioning. [N] For new buildings 10,000 square feet and over, building commissioning for all building systems shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. Commissioning requirements shall include: 1. Owner's or owner's representative's project treatments. 2. Basis of design. 3. Commissioning measures shown in the construction documents. 4. Commissioning plan. 5. Functional performance testing. 6. Documentation and training. 7. Commissioning report. Exceptions: 1. Dry storage warehouses of any size. 2. Areas under 10,000 square feet used for offices or other conditioned accessory spaces within dry storage warehouses. 3. Tenant improvements under 10,000 square feet as described in Section 303.1.1. 4. Commissioning requirements for energy systems covered by the 2013 California Energy Code. All building operating systems covered by Title 24, Part 6, as well as process equipment and controls, and renewable energy systems shall be included in the scope of the commissioning requirements		No. 182849 (CALGreen 2013)	
5.410.2.1 Owner's Project Requirements (OPR). [N] Documented before the design phase of the project begins the OPR shall include items listed in Section 5.410.2.1.		No. 182849 (CALGreen 2013)	
5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project to cover the systems listed in Section 5.410.2.2.		No. 182849 (CALGreen 2013)	
5.410.2.3 Commissioning plan. [N] Prior to permit issuance, a commissioning plan shall be completed to document how the project will be commissioned. The commissioning shall include the following: 1. General project information. 2. Commissioning goals. 3. Systems to be commissioned. Plans to test systems and components shall include: a. An explanation of the original design intent. b. Equipment and systems to be tested, including the extent of tests c. Functions to be tested. d. Conditions under which the test shall be performed. e. Measurable criteria for acceptable performance. 4. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included.		No. 182849 (CALGreen 2013)	
5.410.2.4 [N] Functional performance testing shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.		No. 182849 (CALGreen 2013)	
5.410.2.5 Documentation and training. [N] A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations.		No. 182849 (CALGreen 2013)	
5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representatives. The systems manual shall include: 1. Site information, including facility description, history and current requirements. 2. Site contract information. 3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log. 4. Major systems. 5. Site equipment inventory and maintenance notes. 6. A copy of verifications required by the enforcing agency or this code. 7. Other resources and documentation, if applicable.		No. 182849 (CALGreen 2013)	
5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following: 1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces). 2. Review and demonstration of servicing/preventive maintenance. 3. Review of the information in the systems manual. 4. Review of the record drawings on the system/equipment.		No. 182849 (CALGreen 2013)	
5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative. Note: Guidance on implementation and enforcement of commissioning requirements, including sample compliance forms and templates, may be found in Appendix A6, Division A6.1, of this code.		No. 182849 (CALGreen 2013)	

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2013 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	METRO SUSTAINABILITY SPEC
5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1.		No. 182849 (CALGreen 2013)	
5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting systems shall include, as applicable to the project: 1. HVAC systems and controls. 2. Indoor and outdoor lighting and controls. 3. Water heating systems. 4. Renewable energy systems. 5. Landscape irrigation systems. 6. Water reuse systems.		No. 182849 (CALGreen 2013)	
5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency.		No. 182849 (CALGreen 2013)	
5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with applicable standards on each system as determined by the enforcing agency.		No. 182849 (CALGreen 2013)	
5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.		No. 182849 (CALGreen 2013)	
5.410.4.5 Operation and maintenance (O&M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O&M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.		No. 182849 (CALGreen 2013)	
5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.		No. 182849 (CALGreen 2013)	

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CALGreen and Metro Rail Design Criteria Summaries

2013 CALGREEN, ENVIRONMENTAL QUALITY

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
5.503.1 Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace or a sealed woodstove and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150.	[Not applicable]	No. 182849 (CALGreen 2013)			
5.503.1.1 Woodstoves. Woodstoves shall comply with US EPA Phase II emission limits, where applicable.	[Not applicable]	No. 182849 (CALGreen 2013)			
A5.504.1 Indoor air quality (IAQ) during construction. Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2.		No. 182849 (CALGreen 2013)			
A5.504.1.1 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 and as listed in Items 1 and 2 in Section A5.504.1.1.		No. 182849 (CALGreen 2013)			
A5.504.1.2 Additional IAQ measures. Employ additional measures as listed in Items 1 through 5 in Section A5.504.1.2.		No. 182849 (CALGreen 2013)			
5.504.1.3 Temporary ventilation. If the HVAC system is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy. Applies to additions or alterations.	2.2.6	No. 182849 (CALGreen 2013)			
A5.504.2 IAQ postconstruction. Flush out the building per Section A5.504.2 prior to occupancy or if the building is occupied.		No. 182849 (CALGreen 2013)			
A5.504.2.1 IAQ Testing. A testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the United State Environmental Protection Agency (U.S. EPA) and in accordance with Section A5.504.2.1.2. Retest as required in Section A5.504.2.1.3.		No. 182849 (CALGreen 2013)			
A5.504.2.1.1 Maximum levels of contaminants. Allowable levels of contaminant concentrations measured by testing shall not exceed the following: 1. Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per million; 2. Formaldehyde: 27 parts per billion; 3. Particulates (PM10): 50 micrograms per cubic meter; 4. 4-Phenylcyclohexene (4-PCH): 6.5 micrograms per cubic meter; and 5. Total Volatile Organic Compounds (TVOC): 300 micrograms per cubic meter.		No. 182849 (CALGreen 2013)			
A5.504.2.1.2 Test protocols. Testing of indoor air quality should include the elements listed in Items 1 through 4.					
A5.504.2.1.3 Noncomplying building areas. For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedures until testing demonstrates compliance.					
5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.					
5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.1 Adhesives, sealants, caulks. Adhesives and sealants used on the project shall meet the requirements of the following standards. 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. 2. Aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.3 unless more stringent local limits apply.	6.7.3 Materials, General Criteria	No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product- Weighted MIR Limits for ROC in Section 94522(a) (3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 17, Section 94520, et seq.).	2.1.3.2	No. 182849 (CALGreen 2013)			
5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency.		No. 182849 (CALGreen 2013)			
5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in Section 5.504.4.4.	6.7 Materials	No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4.5.	6.7 Materials	No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.5.1 No added formaldehyde, Tier 1. Use composite wood products approved by the ARB as no-added formaldehyde (NAF) based resins or ultra-low emitting formaldehyde (ULEF) resins.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		

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2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
5.504.4.5.3 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following: 1. Product certifications and specifications. 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 5. Other methods acceptable to the enforcing agency.		No. 182849 (CALGreen 2013)			
5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, install resilient flooring which meets one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.7 Resilient flooring systems, Tier 1 [BSC]. For 90 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).	6.7 Materials	No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.7.1 Resilient flooring systems, Tier 2 [BSC]. For 100 percent of floor area receiving resilient flooring, install resilient flooring that meets at least one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). A5.504.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.	6.7 Materials	No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.8 Thermal insulation, Tier 1 [BSC]. Comply with the standards listed in Items 1 through 3.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.8.1 Thermal insulation, Tier 2 [BSC] Thermal insulation, No-added Formaldehyde. Install thermal insulation which complies with Tier 1 plus does not contain any added formaldehyde.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.8.2 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.9 Acoustical ceilings and wall panels. Comply with Chapter 8 in Title 24, Part 2 and with the VOC- emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.4.9.1 Verification of compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits. Note: Products compliant with CHPS criteria certified under the Greenguard Children & Schools program may also be used.		No. 182849 (CALGreen 2013)	Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.		No. 182849 (CALGreen 2013)	Rule 403 (Particulate Matter)		
A5.504.5.1 Entryway systems. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in Section A5.504.5.1.		No. 182849 (CALGreen 2013)	Rule 403 (Particulate Matter)		
A5.504.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in Section A5.504.5.2.		No. 182849 (CALGreen 2013)			
5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a MERV of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. Exceptions: 1. An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow. 2. Existing mechanical equipment.		No. 182849 (CALGreen 2013)			
5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.		No. 182849 (CALGreen 2013)			
A5.504.5.3.1 Filters, Tier 1. In mechanically ventilated buildings, provide regularly occupied areas of the building with air infiltration media for outside and return air prior to occupancy that provides at least a MERV of 11.		No. 182849 (CALGreen 2013)			
A5.504.5.3.1.1 Filters, Tier 2. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 13.		No. 182849 (CALGreen 2013)			
5.504.7 Environmental tobacco smoke (ETS) control. Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows where outdoor areas are provided for smoking and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University or campus of the University of California, whichever are more stringent.	6.10 Signage and Graphics	No. 182849 (CALGreen)		Section 7596 – 7598	

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2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.1.3		No. 182849 (CALGreen)			
5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements for Ventilation) of the California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.	8.1.5. Underground Station Public Area Ventilation	No. 182849 (CALGreen 2013)		Code of Regulations, Chapter 4, Title 8	Section 120.1
5.506.2 Carbon dioxide (CO2) monitoring. For buildings or additions equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, Section 120(c) (4).	9.15.1. Gas Monitoring Equipment	No. 182849 (CALGreen 2013)			Section 12 (c) (4)
A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2.		No. 182849 (CALGreen 2013)			
A5.507.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the California Energy Code by Sections A5.507.1.1.1 and A5.507.1.1.2.		No. 182849 (CALGreen 2013)			
A5.507.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants.		No. 182849 (CALGreen 2013)			
A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants by Items 1 and 2 in Section A5.507.1.1.2.		No. 182849 (CALGreen 2013)			
A5.507.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces.		No. 182849 (CALGreen 2013)			
A5.507.3 Views. Achieve direct line of sight to the outdoor environment via vision glazing between 2'6" and 7'6" above finish floor for building occupants in 90 percent of all regularly occupied areas. A5.507.3.1 Interior office spaces. Entire areas of interior office spaces may be included in the calculation if at least 75 percent of each area has direct line of sight to perimeter vision glazing.		[None identified]			
A5.507.3.2 Multi-occupant spaces. Include in the calculation the square footage with direct line of sight to perimeter vision glazing.		[None identified]			
5.507.4 Acoustical control. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413 or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2. Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, enclosed parking structures and utility buildings.	2.8 Noise and Vibration	No. 182849 (CALGreen 2013)			
5.507.4.1 Exterior noise transmission, prescriptive method. Wall and floor-ceiling assemblies exposed to the noise source making up the building envelope shall have exterior wall and roof ceiling assemblies meeting a composite STC rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2.	2.8 Noise and Vibration	No. 182849 (CALGreen 2013)			
5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Leq-1Hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).	2.8 Noise and Vibration	No. 182849 (CALGreen 2013)			
5.507.4.2 Performance method. For buildings located as defined in Sections 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building envelope or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation.	2.8 Noise and Vibration	No. 182849 (CALGreen 2013)			
5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.	2.8 Noise and Vibration	No. 182849 (CALGreen 2013)			
5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.	2.8 Noise and Vibration	No. 182849 (CALGreen 2013)			
5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40	2.8 Noise and Vibration	No. 182849 (CALGreen 2013)			
5.508.1 Ozone depletion and global warming reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		
A5.508.1.3 Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that does not contain HCFCs.		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1168 (VOC Limits – Adhesive and Sealant Applications)		

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2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
<p>A5.508.1.4 Hydrofluorocarbons (HFCs). Install HVAC complying with either of the following:</p> <ol style="list-style-type: none"> 1. Install HVAC, refrigeration and fire suppression equipment that do not contain HFCs or that do not contain HFCs with a global warming potential greater than 150. 2. Install HVAC and refrigeration equipment that limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions) Rule 1418 (Halon Emissions from Fire Extinguishing Equipment)		
<p>5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities. Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO₂), and potentially other refrigerants.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.1 Refrigerant piping. Piping compliant with the California Mechanical Code shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.1.1 Threaded pipe. Threaded connections are permitted at the compressor rack.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.1.2 Copper pipe. Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less. an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.1.2.1 Anchorage. 1/4 inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.1.3 Flared tubing connections. Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil. Exception: Single-flared tubing connections may be used with a multi-ring seal coated with industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long radius elbows.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.2 Valves. Valves and fittings shall comply with the California Mechanical Code and as follows.</p> <p>5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.</p> <ol style="list-style-type: none"> 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)

APPENDIX B

2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
<p>5.508.2.2.1.1 Pressure detection. A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for use.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.2.2.1 Valve caps. For systems with a refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.2.2.2 Seal caps. If designed for it, the cap shall have a neoprene O-ring in place.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.2.2.2.1 Chain tethers. Chain tethers to fit over the stem are required for valves designed to have seal caps. Exception: Valves with seal caps that are not removed from the valve during stem operation.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.3 Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.3.1 Coil coating. Consideration shall be given the heat transfer efficiency of coil coating to maximize energy efficiency.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.4 Refrigerant receivers. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device that indicates the level of refrigerant in the receiver.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks, and retest for pressure using the same gauge.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than a +/- one pound pressure change from 300 psig, measured with the same gauge.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)

APPENDIX B

2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	METRO RAIL DESIGN CRITERIA (MRDC)	CITY OF LA ORDINANCE	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	CALIFORNIA GOVERNMENT CODE	CALIFORNIA ENERGY CODE
<p>5.508.2.6 Evacuation. The system shall be evacuated after pressure testing and prior to charging.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50 microns), and hold for 30 minutes.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold for 30 minutes.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)
<p>5.508.2.6.3 Third vacuum. Pull a third vacuum down to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 		No. 182849 (CALGreen 2013)	Rule 1415 (Reduction of Refrigerant Emissions)	CCR Title 8, Division 1, Chapter 4	Section 120.1 (Requirement for Ventilation)

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2013 CALGREEN, PLANNING & DESIGN

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.106.1 Storm water pollution prevention. Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of storm water runoff from the construction activities through local ordinance in Section 5.106.1.1 or Best management practices (BMP) in Section 5.106.1.2.</p>	<ol style="list-style-type: none"> 1. See Supporting Documents for Section 5.106.1.2 Best management practices (BMP) for the prevention of the pollution of storm water runoff from construction activities. 2. Provide grading plan sheet(s) that indicate the temporary erosion and sediment control and BMPs to prevent and/or control stormwater runoff and discharge of pollutants. Consistent with the requirements of the Regional Water Quality Control Board (RWQCB), and documented in the Stormwater Pollution Prevention Plan (SWPPP) approved for the project, the BMPs shall include: advance planning and training to ensure implementation of the BMPs; erosion and sediment control BMPs in place until the area is permanently stabilized; pollution prevention BMPs to keep the construction site clean; and regular inspection of the construction site to ensure proper installation and maintenance of BMPs. 3. Provide evidence of the approval of the SWPPP and any amendments. 	<p>Grading plan Evidence of the approval of SWPPP (signature page or approval correspondence only)</p>
<p>5.106.1.1 Local Ordinance. Comply with a lawfully enacted stormwater management and/or erosion control ordinance.</p>	<ol style="list-style-type: none"> 1. Provide civil and grading plan sheet(s) with details that indicate incorporation into the Project design Best Management Practices (BMPs) to pre-treat and infiltrate, retain, and/or reuse the first 0.75 of an inch rain event and the 85th percentile 24-hour storm event as required by the City of Los Angeles LID Ordinance No. 181899 and the Regional Board National Pollutant Discharge Elimination System (NPDES) Municipal permit. This shall include the location and types of BMP devices including pretreatment areas, infiltration areas, inlets and outlets, roof drains, stencil at drainage inlets, trash enclosures, and vegetated and other areas for infiltration. 2. Provide evidence of approval of the LID Report for the Project by the City of Los Angeles, including the Covenant and Agreement (C&A) Form with the Operation and Maintenance (O&M) Plan recorded by the County of Los Angeles. 3. Provide evidence of approval of the Standard Urban Stormwater Mitigation Plan (SUSMP) by the Regional Water Quality Control Board or their designee. 	<p>Civil and grading plan Evidence of approval of LID Report (signature page or approval correspondence only) Evidence of approval of SUSMP (signature page or approval correspondence only)</p>
<p>5.106.1.2 Best management practices (BMP). Prevent the loss of topsoil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP.</p> <ol style="list-style-type: none"> 1. Soil loss BMP that should be considered for implementation as appropriate for each project include, but are not limited to, the following: <ol style="list-style-type: none"> a. Scheduling construction activity. b. Preservation of natural features, vegetation and soil. c. Drainage swales or lined ditches to control water flow. c. Mulching or hydroseeding to stabilize disturbed soils. e. Erosion control to protect slopes. f. Protection of storm drain outlets (gravel bags or catch basin inserts). g. Perimeter sediment control (perimeter silt fence, fiber rolls). h. Sediment trap or sediment basin to retain sediments on site. i. Stabilized construction exits. j. Wind erosion control. k. Other soil loss BMP acceptable to the enforcing agency. 2. Good housekeeping BMP to manage construction equipment, materials and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following: <ol style="list-style-type: none"> a. Material handling and waste management. b. Building materials stockpile management. c. Management of washout areas (concrete, paints, stucco, etc.). d. Control of vehicle/equipment fueling to contractor's staging area. e. Vehicle and equipment cleaning performed off site. f. Spill prevention and control. g. Other housekeeping BMP acceptable to the enforcing agency. 	<ol style="list-style-type: none"> 1. Provide grading plan sheet(s) that indicate temporary BMPs in the SWPPP during grading and construction and long-term BMPs that are a part of the Project consistent with the City of Los Angeles LID Plan and the NPDES Municipal permit. 2. Provide Supporting Documentation consistent with the requirements of Sections 5.106.1 and 5.106.1.1. 	<p>Grading plan Evidence of approval of LID Report (signature page or approval correspondence only) Evidence of approval of SWPPP (signature page or approval correspondence only) Evidence of approval of SUSMP (signature page or approval correspondence only)</p>
<p>A5.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section A5.106.2.1 and storm water runoff quality by Section A5.106.2.2 or by local requirements, whichever are stricter.</p>	<p>See Supporting Documentation for Section 5.106.1.2 Best Management Practices (BMPs). See Supporting Documentation for Section 5.106.1.1 Local ordinance for the plans and other information associated with the City of Los Angeles LID Plan and the NPDES Municipal permit that shall be submitted.</p>	<p>Grading plan Evidence of approval of LID Report (signature page or approval correspondence only) Evidence of approval of the SWPPP (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>
<p>A5.106.2.1 Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions. Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25-percent decrease in rate and quantity.</p>	<p>See Supporting Documentation for Section 5.106.1.2 Best Management Practices (BMPs). See Supporting Documentation for Section 5.106.1.1 Local ordinance for the plans and other information associated with the City of Los Angeles LID Plan and the NPDES Municipal permit that shall be submitted.</p>	<p>Grading plan Evidence of approval of the LID Report (signature page or approval correspondence only) Evidence of approval of the SWPPP (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>
<p>A5.106.2.2 Storm water runoff quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs).</p>	<p>See Supporting Documentation for Section 5.106.1.2 Best Management Practices (BMPs). See Supporting Documentation for Section 5.106.1.1 Local ordinance for the plans and other information associated with the City of Los Angeles LID Plan and the NPDES Municipal permit that shall be submitted.</p>	<p>Grading plan Evidence of approval of the LID Report (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>

APPENDIX C

2013 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in Section A5.106.3.</p>	<p>See Supporting Documentation for Section 5.106.1.1 Local ordinance for the plans and other information associated with the City of Los Angeles LID Plan and the NPDES Municipal permit that shall be submitted.</p>	<p>Grading plan Evidence of approval of the LID Report (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>
<p>5.106.4 Bicycle parking. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2.</p> <p>5.106.4.1 Bicycle parking. [BSC] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter.</p> <p>5.106.4.1.1 Short-term bicycle parking. [BSC] If the new project or addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack. Exception: Additions or alterations which add nine or fewer visitor vehicular parking spaces. Exception: Additions or alterations which add nine or fewer visitor vehicular parking spaces.</p> <p>5.106.4.1.2 Long-term bicycle parking. For buildings with over 10 tenant-occupants or for additions or alterations that add 10 or more tenant vehicular parking spaces, provide secure bicycle parking for 5 percent of tenant-occupied motorized vehicle parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall meet one of the following:</p> <ol style="list-style-type: none"> 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; or 3. Lockable, permanently anchored bicycle lockers. <p>Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates.</p>	<ol style="list-style-type: none"> 1. Provide the calculations for the number of required short-term bicycle parking spaces and long-term bicycle parking spaces. Metro projects with stations shall utilize the methodology defined in Metro Rail Design Criteria 6.12.5. Metro projects consisting of stand alone building(s) shall use the methodology defined in the City of Los Angeles Ordinance No. 182386. The calculations shall include applicable information such as: ridership, square footage, land use type, generation factors, sources, and other information related to the methodology used. 2. Provide plan sheet(s) with the statistical summary of the short-term and long-term bicycle parking. 3. Provide plan sheets for each station or stand alone building(s) indicating the location of the short-term and long-term bicycle parking spaces and the type of facilities that will be provided (i.e., rack, locker). 4. Provide plan sheets with details illustrating the dimensions and design of the bicycle parking facilities (i.e., rack, locker). 	<p>Calculations of number of required short-term bicycle parking spaces Plan sheet with the statistical summary Site plan or floor plans indicating the location Plan sheet with details</p>
<p>A5.106.4.3 Changing rooms. For buildings with over 10 tenant-occupants, provide changing/shower facilities in accordance with Table A5.106.4.3 or document arrangements with nearby changing/shower facilities.</p>	<ol style="list-style-type: none"> 1. Provide the calculation of the number of changing/shower facilities consistent with CALGreen Table A5.106.4.3. 2. Provide building plans and/or floor plans with the location(s) of the changing/shower facilities. 3. If changing/shower facilities are provided at a nearby location, provide correspondence or other evidence that arrangements have been made and where they will occur. 	<p>Calculation of number of changing/shower facilities Building plan and/or floor plan Correspondence or other evidence that arrangements have been made at a nearby location</p>
<p>A5.106.5.1 Designated parking for fuel-efficient vehicles. Provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table A5.106.5.1.1 or A5.106.5.1.2.</p> <p>A5.106.5.1.1 Tier 1. Ten percent of total spaces. [BSC] Provide 10 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as follows [in Table A5.106.5.1.1].</p>	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
<p>A5.106.5.1.2 Tier 2. Provide 12 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as follows [in Table A5.106.5.1.2].</p>	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
<p>A5.106.5.1.3 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/ VANPOOL/ EV Note: Vehicles bearing Cleaning Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.</p>	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
<p>A5.106.5.1.4 Vehicle designations. Building managers may consult with local community Transit Management Associations (TMAs) for methods of designating qualifying vehicles, such as issuing parking stickers.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Information on qualifying vehicles, car labeling regulations and DMV SOV decals may be obtained from the following sources: <ol style="list-style-type: none"> a. California DriveClean. b. California Air Resources Board. c. U.S. EPA efficiency standards. d. DMV Registration Operations, (916) 657-6678 and ARB Public Information, (626) 575-6858. 2. Purchasing policy and refueling sites for low emitting vehicles for state employees use can be found at the Department of General Services. 	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
<p>5.106.5.2 Designated parking. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2.</p>	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles based on the parking space requirements shown in Table 5.106.5.2. 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide plan sheet(s) that provide the statistical summary of designated parking spaces 	<p>Calculation of the designated parking spaces Site plan and/or floor plan Plan sheet with statistical summary</p>

APPENDIX C

2013 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.106.5.2.1 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/VANPOOL/EV Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces.</p>	<p>1. Provide site plan and/or floor locations and a detail of the markings to be provided in paint.</p>	<p>Site plan and/or floor locations</p>
<p>A5.106.5.3 Electric vehicle (EV) charging. Construction shall comply with Sections A5.106.5.3.1 or 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code Section 406.9, the California Electrical Code and as follows:</p>	<p>1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2.</p>	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>A5.106.5.3.1 Tier 1. Table A5.106.5.3.1 shall be used to determine if single or multiple charging space requirements apply for future installation of EVSE. When a single charging space is required per Table A5.106.5.3.1, refer to Section 5.106.5.3.1 for design requirements. When multiple charging spaces are required, refer to Section 5.106.5.3.2 for design requirements.</p>	<p>1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2.</p>	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>A5.106.5.3.2 Tier 2. Table A5.106.5.3.2 shall be used to determine the number of multiple charging space required for future installation of EVSE. Refer to Section 5.106.5.3.2 for design space requirements.</p>	<p>1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2.</p>	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>A5.106.5.3.3 Identification. The service panel or subpanel circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charges as "EV CAPABLE." The raceway termination location shall be permanently and visibly marked as "EV CAPABLE." A5.106.5.3.4 Future charging spaces qualify as designated parking as described in Section A5.106.5.1 Designated parking. Notes: 1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf. 2. See Vehicle Code Section 22511 EV charging spaces signage in offstreet parking facilities and for use of EV charging spaces. 3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local governments, residents, and businesses. www.opr.ca.gov/docs/ZEV_Guidebook.pdf.</p>	<p>1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2.</p>	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>A5.106.6 Parking capacity. Design parking capacity to meet but not exceed minimum local zoning requirements. A5.106.6.1 Reduce parking capacity. With the approval of the enforcement authority, employ strategies to reduce on-site parking area by: 1. Use of on street parking or compact spaces, illustrated on the site plan or 2. Implementation and documentation of programs that encourage occupants to carpool, ride share or use alternate transportation.</p>	<p>1. Provide calculations indicating that the parking capacity meets the minimum requirements of the zoning district where the Project occurs. 2. Provide parking plans that define the methods that shall be used to reduce the area for onsite parking.</p>	<p>Calculations indicating parking capacity meets zoning district requirement Parking plans</p>
<p>A5.106.7 Exterior wall shading. Meet requirements in the current edition of the California Energy Code and comply with either Section A5.106.7.1 or A5.106.7.2 for wall surfaces. If using vegetative shade, plant species documented to reach desired coverage within 5 years of building occupancy.</p>	<p>1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.</p>	<p>Site plan, floor plan, and/or elevation</p>
<p>A5.106.7.1 Fenestration. Provide vegetative or man-made shading devices for all fenestration on east-, south-, and west-facing walls.</p>	<p>1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.</p>	<p>Site plan, floor plan, and/or elevation</p>
<p>A5.106.7.1.1 East and west walls. Shading devices shall have 30-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. Calculate shade coverage on the summer solstice at 10AM for east-facing walls and at 3PM for west-facing walls.</p>	<p>1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.</p>	<p>Site plan, floor plan, and/or elevation</p>
<p>A5.106.7.1.2 South walls. Shading devices shall have 60-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less.</p>	<p>1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.</p>	<p>Site plan, floor plan, and/or elevation</p>
<p>A5.106.7.2 Opaque wall areas. Use wall surfacing with minimum SRI 25 (aged), for 75-percent of opaque wall areas. Exceptions: Use of vegetated shade in Wildland-Urban Interface Areas as defined in Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) of the California Building Code shall meet the requirements of that chapter. Note: If not available from the manufacturer, aged SRI value calculations may be found at the California Energy Commissions website at www.energy.ca.gov.</p>	<p>1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.</p>	<p>Site plan, floor plan, and/or elevation</p>

APPENDIX C

2013 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following:</p> <ol style="list-style-type: none"> 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, <p>or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.</p> <p>Exceptions: [N] 1. Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code. 2. Emergency lighting. [Refer to Table 5.106.8 (N)]</p> <p>Note: [N] See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways.</p>	<ol style="list-style-type: none"> 1. Provide photometric plans and calculations indicating the outdoor lighting systems shall be designed and installed to comply with the minimum requirement of: the California Energy Code; the Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and allowable BUG ratings not exceeding those shown in CALGreen Table 5.106.8. 	<p>Photometric plan and calculations</p>
<p>5.106.10 Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following:</p> <ol style="list-style-type: none"> 1. Swales. 2. Water collection and disposal systems. 3. French drains. 4. Water retention gardens. 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. <p>Exception: Additions or alterations not altering the drainage path.</p>	<ol style="list-style-type: none"> 1. Provide grading plans and details or sections that indicate how site grading and/or a drainage system will manage all surface water flows to keep water from entering buildings. 	<p>Grading plan and details or sections</p>
<p>A5.106.11 Heat island effect. Reduce nonroof heat islands and roof heat islands as follows:</p> <p>A5.106.11.1 Hardscape alternatives. Use one or a combination of strategies 1 through 2 for 50 percent of site hardscape or put 50 percent of parking underground.</p> <ol style="list-style-type: none"> 1. Use light colored materials with an initial solar reflectance value of at least .30 as determined in accordance with ASTM Standards E 1918 or C 1549. 2. Use open-grid pavement system or pervious or permeable pavement system. 	<ol style="list-style-type: none"> 1. Provide site plans that indicate the location and design feature(s) to reduce nonroof heat islands and roof heat islands. 2. Provide details and sections, as needed, to illustrate the design feature(s) that shall be used. 	<p>Site plan</p> <p>Details and sections</p>
<p>A5.106.11.2 Cool roof for reduction of heat island effect. Use roofing materials having a minimum aged solar reflectance, thermal emittance complying with Sections A5.106.11.2.2 and A5.106.11.2.3 or a minimum aged of Solar Reflectance Index (SRI) equal to or greater than values shown in Table A5.106.11.2.2 – Tier 1 or A5.106.11.2.3 – Tier 2</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 lbs/sf. 2. Roof area covered by building integrated solar photovoltaic and building integrated solar thermal panels. 	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or roof plan sheet(s) that indicate the type and location of roofing materials used to result in a cool roof for reduction of heat island effects as defined in Section A5.106.11.2. 2. Provide details and elevations, as needed, to illustrate use of roofing materials to achieve the desired thermal emittance. As appropriate, provide a Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) for the roofing materials. 	<p>Site plan, floor plan, and/or roof plan</p> <p>Details and elevations</p>
<p>A5.106.11.2.1 Solar Reflectance. Roofing materials shall have a minimum aged solar reflectance equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2.</p> <p>If Cool Roof Rating Council (CRRC) testing for aged reflectance is not available for any roofing products, the aged value shall be determined using the CRRC certified initial value using the equation $p_{aged} = [0.2 + \beta (p_{initial} - 0.2)]$, where $p_{initial}$ = the initial solar reflectance and soiling resistance, β, listed by product type in Table A5.106.11.2.1.</p> <p>Solar reflectance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code.</p>	<p>See Supporting Documentation for Section A5.106.11.2 Cool roof for reduction of heat island effect.</p>	<p>Site plan, floor plan, and/or roof plan</p> <p>Details and elevations</p>
<p>A5.106.11.2.2 Thermal emittance. Roofing materials shall have a CRRC initial or aged thermal emittance as determined in accordance with ASTM E 408 or C 1371 equal to or greater than those specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2.</p> <p>Thermal emittance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code.</p>	<p>See Supporting Documentation for Section A5.106.11.2 Cool roof for reduction of heat island effect.</p>	<p>Site plan, floor plan, and/or roof plan</p> <p>Details and elevations</p>
<p>A5.106.11.2.3 Solar reflectance index alternative. Solar Reflectance Index (SRI) equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2 may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.</p> <p>SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E 1980-01 as specified in the California Energy Code, Section 118(i)3. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A5.106.11.2.1 if the CRRC certified aged solar reflectance are not available. Certified Thermal emittance used in the SRI-WS may be either the initial value or the aged value listed in the CRRC.</p> <p>Solar reflectance and thermal emittance may also be certified by other supervisory entities approved by the Commission pursuant to Title 24, Part 1, California Administrative Code.</p> <p>Note: The Solar Reflectance Index Calculation Worksheet (SRI-WS) is available by contacting the Energy Standard Hotline at 1-800-772-3300, website at www.energy.ca.gov or by email at Title24@energy.state.ca.us.</p> <p>A5.106.11.3 Verification of Compliance. If no documentation is available, an inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values. [2013 CALGreen]</p>	<p>See Supporting Documentation for Section A5.106.11.2 Cool roof for reduction of heat island effect.</p>	<p>Site plan, floor plan, and/or roof plan</p> <p>Details and elevations</p>

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2013 CALGREEN, ENERGY EFFICIENCY

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.205.201.1 Scope [BSC]. California Energy Code [DSA-SS]. For the purposes of mandatory energy efficient standards in this code, the California Energy Commission will continue to adopt mandatory building standards.	No supporting documentation required.	None
A5.203.1 Energy efficiency. Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and either A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings, as well as additions and alterations, are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Sections A5.203.1.1.2 or A5.203.1.2.	1. Provide evidence that lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and A5.203.1.2.1 or A5.203.1.2.2. 2. In the event of buildings without lighting, provide evidence they comply with Section A5.203.1.1.	Evidence that lighting and/or mechanical systems comply For buildings without lighting, provide evidence of compliance
A5.203.1.1.1 Outdoor lighting. Newly installed outdoor lighting power is no greater than 90 percent of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	1. Provide evidence that newly installed outdoor lighting power is no greater than 90% of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	Evidence that installed outdoor lighting power is no greater than 90% of Title 24 requirements
A5.203.1.1.2 Service water heating in restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater installed a solar water-heating system with a minimum solar savings fraction of 0.15 or meet one of the exceptions.	Not applicable to Metro projects.	None
A5.203.1.1.3 Functional areas where compliance with residential lighting standards is required. For newly constructed high-rise residential dwelling units and hotel and motel guest rooms, indoor lighting complies with the applicable requirements in Appendix A4 Residential Voluntary Measures, Division A4.2 - Energy Efficiency, Section A4.203.1.1.3. For additions and alterations to high-rise residential dwelling units and hotel and motel guest rooms, indoor lighting complies with the applicable requirements in Appendix A4 Residential Voluntary Measures, Division A4.2 - Energy Efficiency, Section A4.204.1.1.1	Not applicable to Metro projects.	None
A5.203.1.2.1 Tier 1. For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 95 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building.	Not applicable to Metro projects.	None
A5.203.1.2.2 Tier 2. For building projects that include indoor lighting or mechanical systems, but not both, the Energy Budget is no greater than 90 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building. For building projects that include indoor lighting and mechanical systems, the Energy Budget is no greater than 85 percent of the Title 24, Part 6, Energy Budget for the Proposed Design Building.	Not applicable to Metro projects.	None
A5.211.1 On-site renewable energy. Use on-site renewable energy for at least 1 percent of the electrical service overcurrent protection device rating calculated in accordance with the 2013 California Electrical Code or 1KW, whichever is greater, in addition to the electrical demand required to meet 1 percent of natural gas and propane use calculated in accordance with the 2013 California Plumbing Code.	1. Provide evidence that the Project will use onsite renewable energy as specified in Section A5.211.1 2. Provide supporting calculations to meet the requirements of A5.211.1.	Evidence that Project will use onsite renewable energy Supporting calculations
A5.211.1.1 Documentation. Calculate renewable on-site system to meet the requirements of Section A5.211.1. Factor in net-metering, if offered by local utility, on an annual basis.	1. Provide evidence that the Project will use onsite renewable energy as specified in Section A5.211.1 2. Provide supporting calculations to meet the requirements of A5.211.1.	Evidence that Project will use onsite renewable energy Supporting calculations
A5.211.3 Green power. Participate in the local utility's renewable energy portfolio program that provides a minimum of 50-percent electrical power from renewable sources. Maintain documentation through utility billings.	1. Provide evidence of participation in the local utility's renewable energy portfolio program that has a minimum of 50% electrical power from renewable sources.	Evidence of participation
A5.212.1 Elevators and escalators. In buildings with more than one elevator or two escalators, provide systems and controls to reduce the energy demand of elevators and escalators as follows. Document systems operation and controls in the project specifications and commissioning plan.	1. Provide architectural plans and section(s) that show elevators and escalators. 2. Provide project specifications that confirm the systems operations and controls reduce the energy demand.	Architectural plan and sections Project specifications
A5.212.1.1 Elevators. Traction elevators shall have a regenerative drive system that feeds electrical power back into the building grid when the elevator is in motion.	1. Provide architectural plans and section(s) that show elevators and escalators. 2. Provide project specifications that confirm the systems operations and controls reduce the energy demand.	Architectural plan and sections Project specifications
A5.212.1.1.1 Car lights and fan. A parked elevator shall turn off its car lights and fan automatically until the elevator is called for use.	1. Provide architectural plans and section(s) that show elevators and escalators. 2. Provide project specifications that confirm the systems operations and controls reduce the energy demand.	Architectural plan and sections Project specifications
A5.212.1.2 Escalators. An escalator shall have a variable voltage variable frequency (VVVF) motor drive system that is fully regenerative when the escalator is in motion.	1. Provide evidence that escalator(s) shall have a variable voltage variable frequency (VVVF) motor drive system that is fully regenerative when the escalator is in motion.	Evidence that escalator(s) shall have a variable voltage variable frequency (VVF) motor drive system
A5.212.1.4 Controls. Controls that reduce energy demand shall meet requirements of CCR, Title 8, Chapter 4, Subchapter 6 and shall not interrupt emergency operations for elevators required in CCR, Title 24, Part 2, California Building Code.	1. Provide notes on architectural plans that include elevators stating controls that reduce energy demand shall meet the requirements in California Code of Regulations (CCR), Title 8, Chapter 4, Subchapter 6 and shall not interrupt emergency operations for elevators required in CCR, Title 24, Part 2, California Building Code.	Structural plan Project specifications
A5.213.1 Steel Framing. Design for and employ techniques to avoid thermal bridging.	1. Provide structural plans that provide design and techniques that avoid thermal bridging. 2. Provide project specifications that confirm that thermal bridging will be avoided.	Structural plan Project specifications

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2013 CALGREEN, WATER EFFICIENCY & CONSERVATION

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.303.1 Meters. Separate meters shall be installed for the uses described in Sections 5.303.1.1 and 5.303.1.2.</p> <p>5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters or metering devices shall be installed as follows:</p> <ol style="list-style-type: none"> For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day, including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s). Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s). Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW). 	<ol style="list-style-type: none"> Provide utility plans and landscape plans that show separate submeters for domestic services, fire services, and landscape irrigation. Provide landscape plan irrigation legend and details that show submeters or metering devices for irrigation plan. 	<p>Utility plan and landscape plan</p> <p>Landscape plan, irrigation legend, and details</p>
<p>5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or an addition that is projected to consume more than 1,000 gal/day (3800 L/day).</p>	<ol style="list-style-type: none"> Provide utility plans and landscape plans that show separate submeters for domestic services, fire services, and landscape irrigation. Provide landscape plan irrigation legend and details that show submeters or metering devices for irrigation plan. 	<p>Utility plan and landscape plan</p> <p>Landscape plan, irrigation legend, and details</p>
<p>5.303.2 Water Reduction. Plumbing fixtures shall meet the maximum flow rate values shown in Table 5.303.2.3.</p> <p>Exception: Buildings that demonstrate 20-percent overall water use reduction. In this case, a calculation demonstrating a 20-percent reduction in building "water use base-line," as established in Table 5.303.2.2, shall be provided.</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fixture fittings that indicate that a reduction in the overall use of potable water within the building will be provided by 30% for Tier 1, 35% Tier 2, and 40% for Tier 3. 	<p>Schedule of plumbing fixtures and fixture fittings</p> <p>Supporting calculations</p>
<p>5.303.2.1 Areas of addition and alteration. For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Section 5.303.2 and Section 5.303.3 shall apply to new fixtures in additions or areas of alterations to the building.</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fixture fittings that indicate that a reduction in the overall use of potable water within the building will be provided by 30% for Tier 1, 35% Tier 2, and 40% for Tier 3. 	<p>Schedule of plumbing fixtures and fixture fittings</p> <p>Supporting calculations</p>
<p>A5.303.2.3.1 Tier 1 - 30-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 30 percent shall be provided.</p>	<p>For Tier 1, provide supporting calculations (calculate savings by Water Use Worksheets) that demonstrate a 30% reduction in building water base-line.</p>	<p>Schedule of plumbing fixtures and fixture fittings</p> <p>Supporting calculations</p>
<p>A5.303.2.3.2 Tier 2 - 35-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 35 percent shall be provided.</p>	<p>For Tier 2, provide supporting calculations (calculate savings by Water Use Worksheets) demonstrating a 35% reduction in the building water base-line.</p>	<p>Schedule of plumbing fixtures and fixture fittings</p> <p>Supporting calculations</p>
<p>A5.303.2.3.3 40-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 40 percent shall be provided.</p> <p>(Calculate savings by Water Use Worksheets)</p>	<p>For Tier 3, provide supporting calculations (calculate savings by Water Use Worksheets) demonstrating a 40% reduction in the building water base-line.</p>	<p>Schedule of plumbing fixtures and fixture fittings</p> <p>Supporting calculations</p>
<p>A5.303.2.3.4 Nonpotable water systems for indoor use. Utilizing nonpotable water systems (such as captured rainwater, treated graywater, and recycled water) intended to supply water closets, urinals, and other allowed uses, may be used in the calculations demonstrating the 30-, 35- or 40-percent reduction. The nonpotable water systems shall comply with the current edition of the California Plumbing Code.</p>	<ol style="list-style-type: none"> Provide site plans and plumbing plans that indicate the use of nonpotable water systems (i.e., rainwater, treated graywater, recycled water) to supply water closets, urinals, and other allowed uses. Provide on-site locations of devices for the capture of rainwater. Also indicate that nonpotable water systems shall comply with the current edition of the California Plumbing Code. Provide calculations that demonstrate 30%, 35%, or 40% reduction for Tiers 1, 2, and 3, respectively. 	<p>Site plans and plumbing plans</p> <p>Supporting calculations</p>
<p>5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following:</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings</p> <p>Specifications for future fixtures and fittings</p>
<p>5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets.</p> <p>Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush.</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings</p> <p>Specifications for future fixtures and fittings</p>
<p>5.303.3.2 Urinals. The effective flush volume of urinals shall not exceed 0.5 gallons per flush.</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings</p> <p>Specifications for future fixtures and fittings</p>
<p>5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads.</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings</p> <p>Specifications for future fixtures and fittings</p>
<p>5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time.</p> <p>Note: A hand-held shower shall be considered a showerhead.</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings</p> <p>Specifications for future fixtures and fittings</p>

APPENDIX C

2013 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.303.3 Appliances and fixture commercial application. Appliances and fixtures shall meet the following:</p> <ol style="list-style-type: none"> 1. Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the California Code of Regulations. 2. Dishwashers shall meet the criteria in Section A5.303.3(2)(a) and (b). 3. Ice makers shall be air cooled. 4. Food steamers shall be connectionless or boilerless. 5. [BSC] The use and installation of water softeners that discharge to the community sewer system may be limited or prohibited by local agencies if certain conditions are met. 6. Combination ovens shall not consume more than 10 gph (38 L/h) in the full operational mode. 7. Commercial pre-rinse spray valves manufactured on or after January 1, 2006 shall function at equal to or less than 1.6 gpm (0.10 L/s) at 60 psi (414 kPa) and 301 <ol style="list-style-type: none"> a. Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate b. Be equipped with an integral automatic shutoff c. Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gpm (0.08 L/s) or less. 	[Not applicable]	None
<p>5.303.3.4 Faucets and Fountains 5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi.</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets) Manufacturer specifications for the faucets</p>
<p>5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi.</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets) Manufacturer specifications for the faucets</p>
<p>5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi].</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets) Manufacturer specifications for the faucets</p>
<p>5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle.</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets) Manufacturer specifications for the faucets</p>
<p>5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per minute/20 [rim space (inches) at 60 psi]. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction.</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets) Manufacturer specifications for the faucets</p>
<p>5.303.4 Wastewater reduction. [N] Each Building shall reduce by 20 percent wastewater by one of the following methods:</p> <ol style="list-style-type: none"> 1. [BSC, DSA-SS] The installation of water-conserving fixtures (water closets, urinal) meeting the criteria established in Sections 5.303.2 or 5.303.3. 2. [BSC] Utilizing nonpotable water systems [captured rainwater, graywater, and municipally treated wastewater (recycled water) complying with the current addition of the California Plumbing Code or other methods described in Section A5.304.8]. 		
<p>A5.303.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems for toilet flushing when recycled water is available as determined by the enforcement authority.</p>	<ol style="list-style-type: none"> 1. Provide plumbing plans and schedule of plumbing fixtures that show that new buildings and facilities shall have dual plumbing for potable and recycled water systems for toilet flushing. 2. Provide site plans and building plans that demonstrate how dual plumbing will occur for the new building or facility. 	<p>Plumbing plans and schedule of plumbing fixtures Site plans and building plans</p>
<p>5.303.6 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1401.1 of the California Plumbing Code and in Chapter 6 of this code.</p>	<ol style="list-style-type: none"> 1. Provide plumbing plans and/or plumbing specifications with note that compliance with the California Plumbing Code will occur. 	Plumbing plans and/or plumbing specifications
<p>5.304.1 Water budget. A water budget shall be developed for landscape irrigation use that installed in conjunction with a new building or an addition or alteration conforms to the local water efficient landscape ordinance or to the California Department of Water Resources Model Water Efficient Landscape Ordinance where no local ordinance is applicable. Note: Prescriptive measures to assist in compliance with the water budget are listed in Sections 492.5 through 492.8, 492.10 and 492.11 of the ordinance, which may be found: http://www.water.ca.gov/wateruseefficiency/docs/WaterOrdSec492.cfm.</p>		
<p>5.304.2 Outdoor potable water use. For new water service, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas of at least 1,000 square feet but not more than 5,000 square feet, separate submeters shall be installed for outdoor potable water use. Applies to additions or alterations.</p>	<ol style="list-style-type: none"> 1. Provide utility plan and landscape plan sheet(s) that show separate submeters for domestic services, fire services, and landscape irrigation. 2. Provide landscape plan irrigation legend and details that show submeters or metering devices for irrigation plan. 	<p>Utility plan and landscape plan Landscape plan, irrigation plan, legend, and details</p>
<p>A5.304.2.1 Outdoor potable water use. For new water service not subject to the provisions of Water Code Section 535, separate meters or submeters shall be installed for outdoor potable water use for landscaped areas of at least 500 square feet but not more than 1,000 square feet (the level at which Section 5.304.2 applies).</p>	<ol style="list-style-type: none"> 1. Provide utility plan and landscape plan sheet(s) that show separate submeters for domestic services, fire services, and landscape irrigation. 2. Provide landscape plan irrigation legend and details that show submeters or metering devices for irrigation plan. 	<p>Utility plan and landscape plan Landscape plan, irrigation plan, legend, and details</p>
<p>5.304.3 Irrigation design. In new nonresidential projects with at least 1,000 square feet but not more than 2,500 square feet of landscaped area (the level at which the MLO applies), install irrigation controllers and sensors which include the following criteria and meet manufacturer's recommendations. Applies to additions or alterations.</p>		

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2013 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.304.3.1 Irrigation controllers. Automatic irrigation system controllers installed at the time of final inspection shall comply with the following:</p> <ol style="list-style-type: none"> 1. Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change. 2. Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input. 		
<p>A5.304.4 Potable water reduction. Provide water-efficient landscape irrigation design that reduces the use of potable water beyond the initial requirements for plant installation and establishment in accordance with Section A5.304.4.1 or A5.304.4.2. Calculations for the reduction shall be based on the water budget developed pursuant to Section 5.304.1.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan sheet(s) with a water-efficient landscape design that reduces the use of potable water beyond the initial requirements for plant installation and establishment in compliance with Section A5.304.4.1 or A5.304.4.2. 2. Provide calculations that demonstrate the reduction based on the water budget for the Project. 	<p>Landscape plan</p> <p>Calculations that demonstrate reduction on water budget</p>
<p>A5.304.4.1 Tier 1 - Reduce the use of potable water to a quantity that does not exceed 60 percent of ETo times the landscape area.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan sheet(s) with a water-efficient landscape design that reduces the use of potable water beyond the initial requirements for plant installation and establishment in compliance with Section A5.304.4.1 or A5.304.4.2. 2. Provide calculations that demonstrate the reduction based on the water budget for the Project. 	<p>Landscape plan</p> <p>Calculations that demonstrate reduction on water budget</p>
<p>A5.304.4.2 Tier 2 - Reduce the use of potable water to a quantity that does not exceed 55 percent of ETo times the landscape area. Note: Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in A5.304.4.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan sheet(s) with a water-efficient landscape design that reduces the use of potable water beyond the initial requirements for plant installation and establishment in compliance with Section A5.304.4.1 or A5.304.4.2. 2. Provide calculations that demonstrate the reduction based on the water budget for the Project. 	<p>Landscape plan</p> <p>Calculations that demonstrate reduction on water budget</p>
<p>A5.304.4.3 Verification of compliance. A calculation demonstrating the applicable potable water use reduction required by this section shall be provided.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan sheet(s) with a water-efficient landscape design that reduces the use of potable water beyond the initial requirements for plant installation and establishment in compliance with Section A5.304.4.1 or A5.304.4.2. 2. Provide calculations that demonstrate the reduction based on the water budget for the Project. 	<p>Landscape plan</p> <p>Calculations that demonstrate reduction on water budget</p>
<p>A5.304.5 Potable water elimination. Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in Section A5.304.5.</p>	<ol style="list-style-type: none"> 1. Provide landscape plans which demonstrate that, after the installation and establishment of plants, the use of potable water through irrigation can be removed from the Project site. 2. Define methods used to achieve the elimination of potable water irrigation. Include milestones that can be used to determine success. 	<p>Landscape plan</p> <p>Methods used to achieve the elimination of potable water irrigation</p>
<p>A5.304.6 Restoration of areas disturbed by construction. Restore all areas disturbed during construction by planting with local native and/or noninvasive vegetation.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan sheet(s), including irrigation, landscape and planting plans, and legends, that demonstrate how areas previously disturbed during construction are restored by planting with local native and/or noninvasive vegetation. 2. Define criteria to measure success of the restoration and periodically report on the progress until the vegetation is established. 	<p>Landscape, irrigation, planting plan, and legend</p> <p>Criteria to measure success of the restoration and periodically report progress</p>
<p>A5.304.7 Previously developed sites. On previously developed or graded sites, restore or protect at least 50 percent of the site area with native and/or noninvasive vegetation.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan sheet(s), including irrigation, landscape, and planting plans, and legends, that demonstrate how 50% of areas previously developed or graded can be restored with native and/or noninvasive vegetation. 2. Define criteria to measure success of the restoration and periodically report on the progress until the vegetation is established. 	<p>Landscape, irrigation, landscape, and planting plan and legend</p>
<p>A5.304.8 Graywater irrigation system. Install graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins and laundry water. See California Plumbing Code.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan sheet(s) including irrigation, landscape, and planting plans, that demonstrate the use of graywater collected from bathroom wash basins and showers for onsite subsurface irrigation. 2. Provide site plan and plumbing plan sheet(s) that demonstrate how this will be accomplished consistent with the California Plumbing Code. 	<p>Landscape, irrigation, landscape, and planting plan</p> <p>Site plan and plumbing plan</p>
<p>A5.305.1 Nonpotable water systems. Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the California Plumbing Code.</p>	<ol style="list-style-type: none"> 1. Provide plumbing plan, landscape plan, and irrigation plan sheet(s) that demonstrate nonpotable water systems for indoor and outdoor use shall comply with the California Plumbing Code. 	<p>Plumbing, landscape, and irrigation plan</p>
<p>A5.305.2 Irrigation systems. Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWEL0) shall use recycled water.</p>	<ol style="list-style-type: none"> 1. Provide landscape plan, irrigation plan, and planting plan sheet(s) that demonstrate recycled water shall be used in compliance with the local jurisdictions water efficient landscape ordinance or the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWEL0). 	<p>Landscape, irrigation, and planting plan</p>

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CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
A5.404.1 Wood framing. Employ advanced wood framing techniques or OVE, as permitted by the enforcing agency.	1. Provide architectural plan sheet(s) demonstrating the use of wood framing.	Architectural plan
A5.405.1 Regional materials. Select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site, meeting the criteria listed in Section A5.405.1.	1. Provide evidence that selected building materials or products for permanent installation on the Project has been harvested or manufactured within California or within 500 miles of the Project site.	Evidence that selected building materials or products have been harvested or manufactured within California and/or 500 miles
A5.405.2 Bio-based materials. Select bio-based building materials per Section A5.405.2.1 or A5.405.2.2.	1. Provide architectural plans, exterior elevations, room finish schedules, and other sheets that indicate the use of bio-based building materials including certified wood products and, for 2.5 percent of wood products used, rapidly renewable materials.	Architectural plan, exterior elevations, and/or room finish schedules
A5.405.2.1 Certified wood products. Certified wood is an important component of green building strategies and the California Building Standards Commission will continue to develop a standard through the next code cycle.	1. Provide architectural plans, exterior elevations, room finish schedules, and other sheets that indicate the use of bio-based building materials including certified wood products and, for 2.5 percent of wood products used, rapidly renewable materials.	Architectural plan, exterior elevations, and/or room finish schedules
A5.405.2.2 Rapidly renewable materials. Use materials made from plants harvested within a ten-year cycle for at least 2.5 percent of total materials value, based on estimated cost.	1. Provide architectural plans, exterior elevations, room finish schedules, and other sheets that indicate the use of bio-based building materials including certified wood products and, for 2.5 percent of wood products used, rapidly renewable materials.	Architectural plan, exterior elevations, and/or room finish schedules
A5.405.3 Reused materials. Use salvaged, refurbished, refinished or reused materials for at least 5 percent of the total value, based on estimated cost of materials on the project.	1. Provide architectural plans, floor plans, or other plan sheet(s) that demonstrate the incorporation of reused materials for at least 5 percent of the total value into the Project design and construction.	Architectural plan, floor plan, or other plan sheets
A5.405.4 Recycled content. Use materials, equivalent in performance to virgin materials, with a total (combined) recycled content value (RCV) of: Tier 1. The RCV shall not be less than 10 percent of the total material cost of the project. Tier 2. The RCV shall not be less than 15 percent of the total material cost of the project. Note: Use the equations in the subsections for calculating total materials cost, recycled content, RCV of materials and assemblies, and total RCV.	1. Provide site plans, architectural plans, interior and exterior sections, room finish schedules, or other plan sheet(s) that identify the use of recycled content consistent with the criteria for the total recycled content value (RCV) defined in Section A5.405.4.	Site plan, architectural plan, interior and exterior sections, room finish schedules, or other plan sheets
A5.405.5 Cement and concrete. Use cement and concrete made with recycled products and complying with the following sections:	1. Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.	Evidence that cement and concrete made with recycled products in compliance with standards
A5.405.5.1 Cement. Cement shall comply with one of the following standards: 1. Portland cement shall meet ASTM C 150. 2. Blended hydraulic cement shall meet ASTM C 595. 3. Other Hydraulic Cements shall meet ASTM C 1157.	1. Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.	Evidence that cement and concrete made with recycled products in compliance with standards
A5.405.5.2 Concrete. Unless otherwise directed by the Engineer of Record, use concrete manufactured with cementitious materials in accordance with Sections A5.405.5.2.1 and A5.405.5.2.1.1, as approved by the enforcing agency.	1. Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.	Evidence that cement and concrete made with recycled products in compliance with standards
A5.405.5.2.1 Supplementary cementitious materials (SCMs). Use concrete made with one or more of the SCMs listed in Section A5.405.5.2.1.	1. Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.	Evidence that cement and concrete made with recycled products in compliance with standards
A5.405.5.2.1.1 Mix design equation. Use any combination of one or more SCMs, satisfying Equation A4.5-14. Exception: Minimums in mix designs approved by the Engineer of Record may be lower where high early strength is needed.	1. Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.	Evidence that cement and concrete made with recycled products in compliance with standards
A5.405.5.3 Additional means of compliance. Any of the following measures shall be permitted to be employed for the production of cement or concrete, depending on their availability and suitability, in conjunction with Section A5.405.5.2.	1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements.	
A5.405.5.3.1 Cement. The following measures may be used in the manufacture of cement.	1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements.	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.1.1 Alternative fuels. Where permitted by state or local air quality standards.	1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements.	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.1.2 Alternative power. Alternate electric power generated at the cement plant and/or green power purchased from the utility meeting the requirements of Section A5.211.	1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements.	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record

APPENDIX C

2013 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
A5.405.5.3.2 Concrete. The following measures may be used in the manufacture of concrete,	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.2.1 Alternative energy. Renewable or alternative energy meeting the requirements of Section A5.211.	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.2.2 Recycled aggregates. Concrete made with one or more of the materials listed in Section A5.405.5.3.2.2.	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.2.3 Mixing water. Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C 1602.	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.2.4 High strength concrete. Concrete elements designed to reduce their total size compared to standard 3,000 psi concrete, as approved by the Engineer of Record.	<ol style="list-style-type: none"> 1. Provide evidence of approval by the Engineer of Record on the use of high strength concrete. 	Evidence of approval by the Engineer of Record
A5.406.1.1 Service life. Select materials for longevity and minimal deterioration under conditions of use.	<ol style="list-style-type: none"> 1. Provide documentation, with Metro approval, that defines the materials that will be reused or recycled at the end of their service life. 	Documentation, with Metro approval, that defines reused or recycled materials
A5.406.1.3 Recyclability. Select materials that can be re-used or recycled at the end of their service life.	<ol style="list-style-type: none"> 1. Provide documentation, with Metro approval, that defines the materials that will be reused or recycled at the end of their service life. 	Documentation, with Metro approval, that defines reused or recycled materials
5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code, Section 1403.2 (Weather Protection) and California Energy Code, Section 150 (Mandatory Features and Devices), manufacturer's installation instructions or local ordinance, whichever is more stringent.	<ol style="list-style-type: none"> 1. Provide building plans and details that indicate the provision of a weather-resistant exterior wall and foundation envelope. 	Building plans and details
5.407.2 Moisture Control. Employ moisture control measures by the following methods.	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent irrigation spray on structures.	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.2 Entries and openings. Design exterior entries and openings to prevent water intrusion into buildings as follows.	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following: <ol style="list-style-type: none"> 1. An installed awning at least 4 feet in depth. 2. The door is protected by a roof overhang at least 4 feet in depth. 3. The door is recessed at least 4 feet. 4. Other methods which provide equivalent protection. 	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent.	<ol style="list-style-type: none"> 1. Provide evidence of approval of the Project's Construction Waste Management Plan consistent with the local ordinance and/or Municipal Code. The evidence of approval shall consist of correspondence indicating approval and/or signature page only of the Construction Waste Management Plan (signed by authorized City or County official or staff member). 2. Consistent with the local ordinance or Municipal Code, utilize a certified waste management company that provides the percentage of construction waste diverted from landfill(s) that will serve the Project. 3. Provide a Monthly Construction Waste Reduction, Disposal, and Recycling report tabulated monthly for the duration of Project construction. The report shall provide the monthly actual recycled tons and the percent recycled. 	Evidence of approval of Construction Waste Management Plan consistent with local requirements Evidence of waste management company's local certification Monthly Construction Waste Reduction, Disposal, and Recycling report

APPENDIX C

2013 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. Exceptions to Sections 5.408.1.1 and 5.408.1.2:</p> <ol style="list-style-type: none"> Excavated soil and land-clearing debris Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets 	<ol style="list-style-type: none"> Provide evidence of approval of the Project's Construction Waste Management Plan consistent with the local ordinance and/or Municipal Code. The evidence of approval shall consist of correspondence indicating approval and/or signature page only of the Construction Waste Management Plan (signed by authorized City or County official or staff member). Consistent with the local ordinance or Municipal Code, utilize a certified waste management company that provides the percentage of construction waste diverted from landfill(s) that will serve the Project. Provide a Monthly Construction Waste Reduction, Disposal, and Recycling report tabulated monthly for the duration of Project construction. The report shall provide the monthly actual recycled tons and the percent recycled. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements</p> <p>Evidence of waste management company's local certification</p> <p>Monthly Construction Waste Reduction, Disposal, and Recycling report</p>
<p>5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction waste material diverted from the landfill complies with this section. Exceptions to Sections 5.408.1.1 and 5.408.1.2:</p> <ol style="list-style-type: none"> Excavated soil and land-clearing debris Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets 	<ol style="list-style-type: none"> Provide evidence of approval of the Project's Construction Waste Management Plan consistent with the local ordinance and/or Municipal Code. The evidence of approval shall consist of correspondence indicating approval and/or signature page only of the Construction Waste Management Plan (signed by authorized City or County official or staff member). Consistent with the local ordinance or Municipal Code, utilize a certified waste management company that provides the percentage of construction waste diverted from landfill(s) that will serve the Project. Provide a Monthly Construction Waste Reduction, Disposal, and Recycling report tabulated monthly for the duration of Project construction. The report shall provide the monthly actual recycled tons and the percent recycled. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements</p> <p>Evidence of waste management company's local certification</p> <p>Monthly Construction Waste Reduction, Disposal, and Recycling report</p>
<p>5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 50 percent minimum requirement as approved by the enforcing agency.</p>	<ol style="list-style-type: none"> Provide evidence of approval of the Project's Construction Waste Management Plan consistent with the local ordinance and/or Municipal Code. The evidence of approval shall consist of correspondence indicating approval and/or signature page only of the Construction Waste Management Plan (signed by authorized City or County official or staff member). Consistent with the local ordinance or Municipal Code, utilize a certified waste management company that provides the percentage of construction waste diverted from landfill(s) that will serve the Project. Provide a Monthly Construction Waste Reduction, Disposal, and Recycling report tabulated monthly for the duration of Project construction. The report shall provide the monthly actual recycled tons and the percent recycled. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements</p> <p>Evidence of waste management company's local certification</p> <p>Monthly Construction Waste Reduction, Disposal, and Recycling report</p>
<p>5.408.1.4 Documentation. Provide documentation of the waste management plan that meets the requirements listed in Sections 5.408.1.1 through 5.408.1.3, and the plan is accessible to the enforcement authority.</p>	<ol style="list-style-type: none"> Provide documentation that the Construction Waste Management Plan meets the requirements of Section 5.408.1.1 et seq. Ensure that the Construction Waste Management Plan is accessible to Metro ECSD staff. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements</p> <p>Evidence of waste management company's local certification</p> <p>Monthly Construction Waste Reduction, Disposal, and Recycling report submittal to Metro ECSD staff</p>
<p>5.408.3 Excavated soil and land clearing debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. Exception: Reuse, either on-or off-site, of vegetation or soil contaminated by disease or pest infestation.</p>	<ol style="list-style-type: none"> Provide documentation that 100 percent of excavated soil and land clearing debris shall be reused or recycled. For phased development, provide documentation that excavated soil and land clearing debris shall be stockpiled onsite consistent with SCAQMD Rules for fugitive dust. 	<p>Documentation that all excavated soil and debris shall be reused or recycled.</p>
<p>A5.408.3.1 Enhanced construction waste reduction-Tier 1 [BSC]. Divert to recycle or salvage at least 65% of nonhazardous construction and demolition waste generated at the site.</p>	<ol style="list-style-type: none"> Provide documentation that enhanced reduction of nonhazardous construction or demolition waste, consisting of 65 percent for Tier 1 and 80 percent for Tier 2, will occur. Provide signed cover of the completed Construction Waste Management Plan or approval correspondence and/or documentation of certification of the waste management company. 	<p>Documentation of enhanced reduction of nonhazardous construction or demolition waste</p> <p>Signed cover of Construction Waste Management Plan or approval correspondence and/or documentation of certification</p>
<p>A5.408.3.1.1 Enhanced construction waste reduction-Tier 2 [BSC]. Divert to recycle or salvage at least 80% of nonhazardous construction waste generated at the site.</p>	<ol style="list-style-type: none"> Provide documentation that enhanced reduction of nonhazardous construction or demolition waste, consisting of 65 percent for Tier 1 and 80 percent for Tier 2, will occur. Provide signed cover of the completed Construction Waste Management Plan or approval correspondence and/or documentation of certification of the waste management company. 	<p>Documentation of enhanced reduction of nonhazardous construction or demolition waste</p> <p>Signed cover of Construction Waste Management Plan or approval correspondence and/or documentation of certification</p>
<p>A5.408.3.1.2 Verification of compliance. A copy of the completed waste management report or documentation of certification of the waste management company utilized shall be provided. Exceptions:</p> <ol style="list-style-type: none"> Excavated soil and land-clearing debris. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. 	<ol style="list-style-type: none"> Provide documentation that enhanced reduction of nonhazardous construction or demolition waste, consisting of 65 percent for Tier 1 and 80 percent for Tier 2, will occur. Provide signed cover of the completed Construction Waste Management Plan or approval correspondence and/or documentation of certification of the waste management company. 	<p>Documentation of enhanced reduction of nonhazardous construction or demolition waste</p> <p>Signed cover of Construction Waste Management Plan or approval correspondence and/or documentation of certification</p>
<p>A5.409.1 General. Life cycle assessment shall be ISO 14044 compliant. The service life of the building and materials assemblies shall not be less than 60 years.</p>	<p>This section is noted.</p>	<p>None</p>
<p>A5.409.2 Whole building life cycle assessment. Conduct a whole building life assessment, including operating energy, showing that the building project achieves at least a 10-percent improvement for at least three of the impacts listed in Section A5.409.2.2, one of which shall be climate change, compared to a reference building.</p>	<ol style="list-style-type: none"> Provide a whole building life assessment consistent with the requirements of Section A5.409.2. 	<p>Whole building life assessment</p>
<p>A5.409.3 Materials and system assemblies. If whole building analysis of the project is not elected, select a minimum of 50% of materials or assemblies based on life cycle assessment of at least three for the impacts listed in Section A5.409.2.2, one of which shall be climate change.</p>	<ol style="list-style-type: none"> Provide documentation of an alternative with a minimum of 50 percent of materials or assemblies based on a life cycle assessment of at least three (3) impacts listed in Section A5.409.2.2 (one of which addresses climate change). 	<p>Documentation of an alternative</p>
<p>A5.409.4 Substitution for prescriptive standards. Performance of a life cycle assessment completed in accordance with Section A5.409.2 may be substituted for other prescriptive provisions of Division A5.4, including those made mandatory through local adoption of Tier 1 or Tier 2 in Division A5.6.</p>	<ol style="list-style-type: none"> Provide documentation of other prescriptive standards in Division A5.4, including those that are mandatory through local adoption of Tier 1 or Tier 2 in Division A5.6. 	<p>Documentation of other prescriptive standards</p>
<p>A5.409.5 Verification of compliance. Documentation of compliance shall be provided as follows:</p> <ol style="list-style-type: none"> The assessment is performed in accordance with ISO 14044. The project meets the requirements of other parts of Title 24. A copy of the analysis shall be made available to the enforcement authority. A copy of the analysis and any maintenance or training recommendations shall be included in the operation and maintenance manual. See notes for available tools. 	<ol style="list-style-type: none"> Provide documentation of compliance through the provision of the following: (1) an assessment in accordance with ISO 14044; (2) evidence that Project meets requirements of other parts of Title 24; (3) copy of approval analysis (signature page or approval correspondence only); (4) a copy of the list of any maintenance or training recommendations that shall be included in the operation and maintenance manual. 	<p>Documentation of compliance</p>

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CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling including (at a minimum) paper, corrugated cardboard, plastics and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.</p>	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or detail plan sheet(s) that indicate recycling areas for depositing, storage, and collection of nonhazardous materials for recycling. 2. If the local ordinance is more restrictive, provide plans that document the required facilities per the requirements. 3. For additions to a Project that occurs with a 12-month period, and results in an increase of 30 percent or more of floor area, provide site plan, floor plan, and/or detailed plan sheet(s) that indicate recycling areas. 	<p>Site plan, floor plan, and/or detail plan sheets</p>
<p>5.410.1.1 Additions. [A] All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30 percent or more in floor area, shall provide recycling areas on site. Exception: Additions within a tenant space resulting in less than a 30-percent increase in the tenant space floor area.</p>	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or detail plan sheet(s) that indicate recycling areas for depositing, storage, and collection of nonhazardous materials for recycling. 2. If the local ordinance is more restrictive, provide plans that document the required facilities per the requirements. 3. For additions to a Project that occurs with a 12-month period, and results in an increase of 30 percent or more of floor area, provide site plan, floor plan, and/or detailed plan sheet(s) that indicate recycling areas. 	<p>Site plan, floor plan, and/or detail plan sheets</p>
<p>5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waster Reuse and Recycling Access Act of 1991 (Act). Note: A sample ordinance for use by local agencies may be found in Appendix A of this document at the CalRecycle's website.</p>	<p>Not applicable to Metro projects.</p>	<p>None</p>
<p>5.410.2 Commissioning. [N] For new buildings 10,000 square feet and over, building commissioning for all building systems shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. Commissioning requirements shall include:</p> <ol style="list-style-type: none"> 1. Owner's or owner's representative's project treatments. 2. Basis of design. 3. Commissioning measures shown in the construction documents. 4. Commissioning plan. 5. Functional performance testing. 6. Documentation and training. 7. Commissioning report. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Dry storage warehouses of any size. 2. Areas under 10,000 square feet used for offices or other conditioned accessory spaces within dry storage warehouses. 3. Tenant improvements under 10,000 square feet as described in Section 303.1.1. 4. Commissioning requirements for energy systems covered by the 2013 California Energy Code. <p>All building operating systems covered by Title 24, Part 6, as well as process equipment and controls, and renewable energy systems shall be included in the scope of the commissioning requirements</p>	<ol style="list-style-type: none"> 1. Provide a copy of the Commissioning Plan (signature page or approval correspondence only). The Commissioning Plan shall include the following consistent with the requirements of Section 5.410.2.3: (1) general project information; (2) commissioning goals; (3) systems to be commissioned (plans of systems and components to be tested); (4) commissioning team information; and (5) commissioning process activities, schedules, and responsibilities. 2. Provide applicable plan sheet(s) for the completion of commissioning. 	<p>Copy of the Commissioning Plan (signature page or approval correspondence only)</p> <p>Plan sheet(s) for the completion of commissioning</p>
<p>5.410.2.1 Owner's Project Requirements (OPR). [N] Documented before the design phase of the project begins the OPR shall include items listed in Section 5.410.2.1.</p>	<ol style="list-style-type: none"> 1. Metro shall provide the expectation and requirements of the Project building(s) before the design phase of the Project begins. 2. Provide a Basis of Design document, a written explanation of how the design of building systems meets Metro's Project requirements. This document shall be completed at the design phase of the Project and address the following systems: (1) HVAC systems and controls; (2) indoor lighting systems and controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems. 	<p>Basis of Design document</p>
<p>5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project to cover the systems listed in Section 5.410.2.2.</p>	<ol style="list-style-type: none"> 1. Metro shall provide the expectation and requirements of the Project building(s) before the design phase of the Project begins. 2. Provide a Basis of Design document, a written explanation of how the design of building systems meets Metro's Project requirements. This document shall be completed at the design phase of the Project and address the following systems: (1) HVAC systems and controls; (2) indoor lighting systems and controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems. 	<p>Basis of Design document</p>
<p>5.410.2.3 Commissioning plan. [N] Prior to permit issuance, a commissioning plan shall be completed to document how the project will be commissioned. The commissioning shall include the following:</p> <ol style="list-style-type: none"> 1. General project information. 2. Commissioning goals. 3. Systems to be commissioned. Plans to test systems and components shall include: <ol style="list-style-type: none"> a. An explanation of the original design intent. b. Equipment and systems to be tested, including the extent of tests c. Functions to be tested. d. Conditions under which the test shall be performed. e. Measurable criteria for acceptable performance. 4. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included. 	<p>See Supporting Documentation for Section 5.410.2 Commissioning.</p>	<p>Copy of the Commissioning Plan (signature page or approval correspondence only)</p> <p>Plan sheet(s) for the completion of commissioning</p>
<p>5.410.2.4 [N] Functional performance testing shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.</p>	<p>See Supporting Documentation for Section 5.410.2 Commissioning.</p>	<p>Copy of the Commissioning Plan (signature page or approval correspondence only)</p> <p>Plan sheet(s) for the completion of commissioning</p>
<p>5.410.2.5 Documentation and training. [N] A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations.</p>	<ol style="list-style-type: none"> 1. Provide copy of the approved Systems Manual (signature page or approval correspondence only). The Systems Manual shall define the systems operations training required per the OSHA requirements in the California Code of Regulations, Title 8, Section 5142 and other related regulations. 2. The approved Systems Manual shall also include: (1) site information, facility description, Project history, and current requirements; (2) site contract information; (3) basic operations and maintenance including general operating procedures basic troubleshooting, recommended maintenance requirements, and site events log; (4) major systems; (5) site equipment inventory and maintenance notes; (6) verification required by Metro or CALGreen; and (7) other applicable resources and documentation. 	<p>Approved Systems Manual (signature page or approval correspondence only)</p>

APPENDIX C

2013 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representatives. The systems manual shall include:</p> <ol style="list-style-type: none"> 1. Site information, including facility description, history and current requirements. 2. Site contract information. 3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log. 4. Major systems. 5. Site equipment inventory and maintenance notes. 6. A copy of verifications required by the enforcing agency or this code. 7. Other resources and documentation, if applicable. 	<p>See Supporting Documentation for Section 5.410.2.5 Documentation and Training.</p>	<p>Approved Systems Manual (signature page or approval correspondence only)</p>
<p>5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:</p> <ol style="list-style-type: none"> 1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces). 2. Review and demonstration of servicing/preventive maintenance. 3. Review of the information in the systems manual. 4. Review of the record drawings on the system/equipment. 	<p>See Supporting Documentation for Section 5.410.2.5 Documentation and Training.</p>	<p>Approved Systems Manual (signature page or approval correspondence only)</p>
<p>5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative. Note: Guidance on implementation and enforcement of commissioning requirements, including sample compliance forms and templates, may be found in Appendix A6, Division A6.1, of this code.</p>	<ol style="list-style-type: none"> 1. Provide copy of approved Commissioning Report (signature page or approval correspondence only). The Commissioning Report shall define: the commissioning process activities undertaken through the design and construction phases of the building process for the Project. 	<p>Copy of approved Commissioning Report (signature page or approval correspondence only)</p>
<p>5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1.</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only) Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting systems shall include, as applicable to the project:</p> <ol style="list-style-type: none"> 1. HVAC systems and controls. 2. Indoor and outdoor lighting and controls. 3. Water heating systems. 4. Renewable energy systems. 5. Landscape irrigation systems. 6. Water reuse systems. 	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only) Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency.</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only) Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with applicable standards on each system as determined by the enforcing agency.</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only) Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only) Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.5 Operation and maintenance (O&M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O&M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations.</p>	<ol style="list-style-type: none"> 1. Provide approved Operation and Maintenance (O&M) Manual (signature page or approval correspondence only). The O&M Manual shall include: (1) detailed operating and maintenance instruction; (2) copies of guaranties/warranties for each system. The O&M Manual instructions shall be consistent with OSHA requirements in the Code of California Regulations, Title 8, Section 5142, and other regulations. 	<p>Approved Operation and Maintenance (O&M) Manual (signature page or approval correspondence only)</p>
<p>5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency.</p>	<p>Provide approved inspection verifications and reports required by Metro (signature pages or approval correspondence only).</p>	<p>Approved inspection verifications and reports required by Metro (signature pages or approval correspondence only)</p>

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2013 CALGREEN, ENVIRONMENTAL QUALITY

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.503.1 Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace or a sealed woodstove and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150.	This Section is not applicable to Metro projects	None
5.503.1.1 Woodstoves. Woodstoves shall comply with US EPA Phase II emission limits, where applicable.	This Section is not applicable to Metro projects.	None
A5.504.1 Indoor air quality (IAQ) during construction. Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2.	1. Provide evidence that indoor air quality (IAQ) shall be maintained during construction through the use of temporary ventilation and/or additional indoor air quality measures.	Evidence that indoor air quality (IAQ) shall be maintained
A5.504.1.1 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 and as listed in Items 1 and 2 in Section A5.504.1.1.	1. Provide evidence that indoor air quality (IAQ) shall be maintained during construction through the use of temporary ventilation and/or additional indoor air quality measures.	Evidence that indoor air quality (IAQ) shall be maintained
A5.504.1.2 Additional IAQ measures. Employ additional measures as listed in Items 1 through 5 in Section A5.504.1.2.	1. Provide evidence that indoor air quality (IAQ) shall be maintained during construction through the use of temporary ventilation and/or additional indoor air quality measures.	Evidence that indoor air quality (IAQ) shall be maintained
5.504.1.3 Temporary ventilation. If the HVAC system is used during construction, use return air filters with a MERV of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30% based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy. Applies to additions or alterations.	1. Provide mechanical plans or other appropriate documentation that show, if the HVAC system is used during construction, return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30 percent based on ASHRAE 52.1-1992 will be used. 2. Provide mechanical plans or other appropriate documentation that, prior to building or facility occupancy, all filters shall be replaced.	Mechanical plan or other appropriate documentation
A5.504.2 IAQ postconstruction. Flush out the building per Section A5.504.2 prior to occupancy or if the building is occupied.	1. Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM10], 4-Phenyleychlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1 IAQ Testing. A testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the United State Environmental Protection Agency (U.S. EPA) and in accordance with Section A5.504.2.1.2. Retest as required in Section A5.504.2.1.3.	1. Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM10], 4-Phenyleychlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1.1 Maximum levels of contaminants. Allowable levels of contaminant concentrations measured by testing shall not exceed the following: 1. Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per million; 2. Formaldehyde: 27 parts per billion; 3. Particulates (PM10): 50 micrograms per cubic meter; 4. 4-Phenylcyclohexene (4-PCH): 6.5 micrograms per cubic meter; and 5. Total Volatile Organic Compounds (TVOC): 300 micrograms per cubic meter.	1. Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM10], 4-Phenyleychlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1.2 Test protocols. Testing of indoor air quality should include the elements listed in Items 1 through 4.	1. Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM10], 4-Phenyleychlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1.3 Noncomplying building areas. For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedures until testing demonstrates compliance.	1. Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM10], 4-Phenyleychlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheet metal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system.	1. Provide documentation that the covering of duct openings and protection of mechanical equipment shall occur during construction.	Documentation that duct openings would be covered and mechanical equipment protected
5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.	See Supporting Documentation for Sections 5.504.4.1 through 5.504.4.6 below.	Architectural plan, floor plans, room finish schedules, or other information Evidence that adhesives, sealants, and caulks shall comply Evidence that aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds comply

APPENDIX C

2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.504.4.1 Adhesives, sealants, caulks. Adhesives and sealants used on the project shall meet the requirements of the following standards. 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. 2. Aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507.	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that lists the location, type, and quantities of adhesives, sealants, and caulks to be used on the Project. 2. Provide evidence that adhesives, sealants, and caulks shall comply with the South Coast Air Quality Management District (SCAQMD) Rule 1168 Volatile Organic Compound (VOC) limits, including compliance with prohibition of defined toxic substances. 3. Provide evidence that aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds (at quantities defined in Section 5.504.4.1) shall comply with the SCAQMD Rule 1168 VOC limits and/or the California Air Resource Board (CARB) VOC standards and requirements, including compliance with prohibition of certain toxic compounds as defined in California Code of Regulations, Title 17, Section 94507 et seq., whichever is more restrictive. 	<p>Architectural plan, floor plans, room finish schedules, or other information</p> <p>Evidence that adhesives, sealants, and caulks shall comply</p> <p>Evidence that aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds comply</p>
5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with Table 5.504.4.3 unless more stringent local limits apply.	<ol style="list-style-type: none"> 1. Provide architectural plans and room finish schedules that list the location, type, and quantities of architectural paints and coatings to be used on the Project. 2. Provide evidence that architectural paints and coatings shall comply with Volatile Organic Compound (VOC) limits in CALGreen Table 5.504.4.3 and/or South Coast Air Quality Management District (SCAQMD) Rule 1168 VOC limits. 	<p>Architectural plan and room finish schedules</p> <p>Evidence that architectural paints and coatings shall comply</p>
5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product- Weighted MIR Limits for ROC in Section 94522(a) (3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances (CCR, Title 17, Section 94520, et seq.).	<ol style="list-style-type: none"> 1. Provide plan sheet(s) or other information that list the location, type, and quantities of aerosol paints and coatings to be used on the Project. 2. Provide evidence that aerosol paints and coatings shall meet the Product-weighted Maximum Incremental Reactivity (MIR) limits for Reactive Organic Compounds (ROC) for certain toxic compounds and ozone depleting substances set forth in the California Code of Regulations, Title 17, Section 94520 et seq. 	<p>Plan sheets or other information</p> <p>Evidence that architectural paints and coatings shall comply</p>
5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency.	See Supporting Documentation for Sections 5.504.4.1 through 5.504.4.3.1 above.	<p>Architectural plan and room finish schedules</p> <p>Evidence that architectural paints and coatings shall comply</p>
5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet the testing and product requirements of one of the standards listed in Section 5.504.4.4.	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that list the location and the characteristics of all carpet installed in the interior of buildings. 2. Provide evidence that the carpet shall meet at least one of the testing and product requirements listed in Section 5.504.4.4. 3. Provide evidence that all carpet cushion installed in the interior of buildings shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4. Provide evidence that all carpet adhesive shall meet the requirements of CALGreen Table 5.504.4.1. 	<p>Information</p> <p>Evidence that the carpet system shall meet at least one testing and product requirement</p> <p>Carpet cushion shall comply</p> <p>Carpet adhesive shall comply</p>
5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in Table 5.504.4.5.	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, interior or exterior elevations, room finish schedules, or and other information that indicates the location and types of composite wood products used on the interior or exterior of the buildings. 2. Provide documentation that the composite wood products shall meet the requirements for formaldehyde as specified in Section 5.504.4.5. This shall include at least one of the documentation listed in Section 5.504.4.5.3. 	<p>Architectural plan, floor plans, interior or exterior elevations, room finish schedules, and/or other information</p>
A5.504.4.5.1 No added formaldehyde, Tier 1. Use composite wood products approved by the ARB as no-added formaldehyde (NAF) based resins or ultra-low emitting formaldehyde (ULEF) resins.	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, interior or exterior elevations, room finish schedules, or other information that indicates the location and types of composite wood products used on the interior or exterior of the buildings. 2. Provide documentation that the composite wood products is approved by the California Air Resources Board as no-formaldehyde based resins (NAF) or ultra-low emitting formaldehyde (ULEF) resins. 	<p>Architectural plan, floor plans, interior or exterior elevations, room finish schedules, and/or other information</p> <p>Documentation that the composite wood products are approved by the California Air Resources Board</p>
5.504.4.5.3 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following: 1. Product certifications and specifications. 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 5. Other methods acceptable to the enforcing agency.	See Supporting Documentation for Section 5.504.4.5 Composite Wood Products above.	<p>Architectural plan, floor plans, interior or exterior elevations, room finish schedules, and/or other information</p> <p>Documentation that the composite wood products are approved by the California Air Resources Board</p>
5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, install resilient flooring which meets one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that list the location and type of resilient flooring. 2. Provide documentation that percentage of the floor area receiving flooring meets one of the criteria listed in Section 5.504.4.6. 	<p>Architectural plan, floor plans, room finish schedules, or other information</p> <p>Documentation that percentage of floor area shall comply</p>
A5.504.4.6.1 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that list the location and type of resilient flooring. 2. Provide documentation that percentage of the floor area receiving flooring meets one of the criteria listed in Section 5.504.4.6. 	<p>Architectural plan, floor plans, room finish schedules, or other information</p> <p>Documentation that percentage of floor area shall comply</p>
A5.504.4.7 Resilient flooring systems, Tier 1 [BSC]. For 90 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program).	<ol style="list-style-type: none"> 1. Provide floor plans, room finish schedules, or other information that verifies 90 percent (Tier 1) of the floor area will be receiving resilient flooring that meets the requirements of Section A5.504.4.7. 	<p>Floor plans, room finish schedules, or other information</p>

APPENDIX C

2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
A5.504.4.7.1 Resilient flooring systems, Tier 2 [BSC]. For 100 percent of floor area receiving resilient flooring, install resilient flooring that meets at least one of the following: 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). A5.504.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits.	1. Provide floor plans, room finish schedules, or other information that verifies 100 percent (Tier 2) of the floor area will be receiving resilient flooring that meets the requirements of Section A5.504.4.7.1.	Floor plans, room finish schedules, or other information
A5.504.4.8 Thermal insulation, Tier 1 [BSC]. Comply with the standards listed in Items 1 through 3.	1. Provide documentation that Tier 1 and Tier 2 thermal insulation complies with the standards defined in Sections A5.504.4.8 and A5.504.4.8.1, respectively. 2. The documentation shall verify that thermal insulation materials met the pollutant emission limits.	Documentation that thermal insulation materials meet pollutant emission limits
A5.504.4.8.1 Thermal insulation, Tier 2 [BSC] Thermal insulation, No-added Formaldehyde. Install thermal insulation which complies with Tier 1 plus does not contain any added formaldehyde.	1. Provide documentation that Tier 1 and Tier 2 thermal insulation complies with the standards defined in Sections A5.504.4.8 and A5.504.4.8.1, respectively. 2. The documentation shall verify that thermal insulation materials met the pollutant emission limits.	Documentation that thermal insulation materials meet pollutant emission limits
A5.504.4.8.2 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits.	1. Provide documentation that Tier 1 and Tier 2 thermal insulation complies with the standards defined in Sections A5.504.4.8 and A5.504.4.8.1, respectively. 2. The documentation shall verify that thermal insulation materials met the pollutant emission limits.	Documentation that thermal insulation materials meet pollutant emission limits
A5.504.4.9 Acoustical ceilings and wall panels. Comply with Chapter 8 in Title 24, Part 2 and with the VOC- emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database.	1. Provide documentation that acoustical ceilings and wall panels shall comply with Chapter 8, Title 24, Part 2.	Documentation that acoustical ceilings and wall panels shall comply
A5.504.4.9.1 Verification of compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits. Note: Products compliant with CHPS criteria certified under the Greenguard Children & Schools program may also be used.	1. Provide documentation that acoustical ceilings and wall panels shall comply with Chapter 8, Title 24, Part 2.	Documentation that acoustical ceilings and wall panels shall comply
A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas.	1. Provide documentation that measures shall be provided to minimize and control entry of hazardous particulates and chemical pollutants into buildings and cross-contamination of regularly occupied areas. This shall be accomplished through: the installation of permanent entry systems that capture dirt and particulates at entry ways directly connected to the outdoors; and/or the isolation of pollutant sources where activities produce hazardous fumes or chemicals.	Documentation that measures minimize and control entry of hazardous particulates and chemical pollutants
A5.504.5.1 Entryway systems. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in Section A5.504.5.1	1. Provide documentation that measures shall be provided to minimize and control entry of hazardous particulates and chemical pollutants into buildings and cross-contamination of regularly occupied areas. This shall be accomplished through: the installation of permanent entry systems that capture dirt and particulates at entry ways directly connected to the outdoors; and/or the isolation of pollutant sources where activities produce hazardous fumes or chemicals.	Documentation that measures minimize and control entry of hazardous particulates and chemical pollutants
A5.504.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in Section A5.504.5.2.	1. Provide documentation that measures shall be provided to minimize and control entry of hazardous particulates and chemical pollutants into buildings and cross-contamination of regularly occupied areas. This shall be accomplished through: the installation of permanent entry systems that capture dirt and particulates at entry ways directly connected to the outdoors; and/or the isolation of pollutant sources where activities produce hazardous fumes or chemicals.	Documentation that measures minimize and control entry of hazardous particulates and chemical pollutants
5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a MERV of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual. Exceptions: 1. An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow.2. Existing mechanical equipment.	1. Provide building plans and/or other documentation that provides evidence that, in mechanically ventilated buildings, regularly occupied areas of the building will have air filtration media for outside and return air that provides at least a MERV of 8. 2. Provide documentation that verifies the filters shall be installed prior to building occupancy. 3. Provide evidence that the maintenance of the MERV 8 filters shall be included in the Operation and Maintenance (O&M) Manual. 4. Provide evidence that the installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.	Building plans and/or other documentation Documentation of filter installation Evidence maintenance of the MERV 8 filters is included in the Operation and Maintenance (O&M) Manual Evidence that the installed filters shall be clearly labeled
5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.	1. Provide building plans and/or other documentation that provides evidence that, in mechanically ventilated buildings, regularly occupied areas of the building will have air filtration media for outside and return air that provides at least a MERV of 8. 2. Provide documentation that verifies the filters shall be installed prior to building occupancy. 3. Provide evidence that the maintenance of the MERV 8 filters shall be included in the Operation and Maintenance (O&M) Manual. 4. Provide evidence that the installed filters shall be clearly labeled by the manufacturer indicating the MERV rating.	Building plans and/or other documentation Documentation of filter installation Evidence maintenance of the MERV 8 filters is included in the Operation and Maintenance (O&M) Manual Evidence that the installed filters shall be clearly labeled
A5.504.5.3.1 Filters, Tier 1. In mechanically ventilated buildings, provide regularly occupied areas of the building with air infiltration media for outside and return air prior to occupancy that provides at least a MERV of 11.	1. Provide documentation that in mechanically ventilated buildings, regularly occupied areas of the building with air filtration media for outside and return air shall be provided at a MERV of 11 for Tier 1 and a MERV of 13 for Tier 2, respectively. 2. Provide evidence that Tier 1 or Tier 2 filters were installed prior to occupancy.	Documentation that appropriate air filtration media shall be used in mechanically ventilated buildings Documentation that installation would occur prior to occupancy
A5.504.5.3.1.1 Filters, Tier 2. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 13.	1. Provide documentation that in mechanically ventilated buildings, regularly occupied areas of the building with air filtration media for outside and return air shall be provided at a MERV of 11 for Tier 1 and a MERV of 13 for Tier 2, respectively. 2. Provide evidence that Tier 1 or Tier 2 filters were installed prior to occupancy.	Documentation that appropriate air filtration media shall be used in mechanically ventilated buildings Documentation that installation would occur prior to occupancy
5.504.7 Environmental tobacco smoke (ETS) control. Prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows where outdoor areas are provided for smoking and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University or campus of the University of California, whichever are more stringent.	1. Provide site plans, signage plans, and details that indicate signage that prohibits smoking within 25 feet of the building entries, outdoor air intakes, and operable windows consistent with existing State and local laws.	Site plan, signage plan, and details
5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.1.3	1. Provide documentation that buildings shall meet or exceed the moisture control requirements of the California Building Code, California Code of Regulations, Title 24, Part 2, Sections 1203 and Chapter 14.1.	Documentation that buildings shall meet or exceed the moisture control requirements

APPENDIX C

2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements for Ventilation) of the California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8.	1. Provide documentation that mechanically or naturally ventilated spaces in buildings meet the requirements of Section 120.1 (Requirements for Ventilation) of the California Energy Code and Division 1, Chapter 4 of the California Code of Regulations, Title 8.	Documentation that mechanically or naturally ventilated spaces in buildings meet the requirements
5.506.2 Carbon dioxide (CO ₂) monitoring. For buildings or additions equipped with demand control ventilation, CO ₂ sensors and ventilation controls shall be specified and installed in accordance with the requirements of the California Energy Code, Section 120(c) (4).	1. Provide documentation, including building plans, legends, details, or other information, which provides evidence that buildings equipped with demand control ventilation will be equipped with Carbon Dioxide (CO ₂) sensors and ventilation controls consistent with the requirements of the California Energy Code, Section 120(c) (4).	Building plan, legends, details, and/or other information
A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2.	1. Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1 and A5.507.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legend, details, and/or other information
A5.507.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the California Energy Code by Sections A5.507.1.1.1 and A5.507.1.1.2.	1. Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legend, details, and/or other information
A5.507.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants.	1. Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legend, details, and/or other information
A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants by Items 1 and 2 in Section A5.507.1.1.2.	1. Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legend, details, and/or other information
A5.507.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces.	1. Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legend, details, and/or other information
A5.507.3 Views. Achieve direct line of sight to the outdoor environment via vision glazing between 2'6" and 7'6" above finish floor for building occupants in 90 percent of all regularly occupied areas. A5.507.3.1 Interior office spaces. Entire areas of interior office spaces may be included in the calculation if at least 75 percent of each area has direct line of sight to perimeter vision glazing.	1. Provide elevations and section cut diagrams that indicate the building design achieves direct line of sight to the outdoors for 90 percent of all regularly occupied areas and 75 percent of the entire area of interior office spaces.	Elevations and section cut diagrams
A5.507.3.2 Multi-occupant spaces. Include in the calculation the square footage with direct line of sight to perimeter vision glazing.	1. Provide elevations and section cut diagrams that indicate the building design achieves direct line of sight to the outdoors for 90 percent of all regularly occupied areas and 75 percent of the entire area of interior office spaces.	Elevations and section cut diagrams
5.507.4 Acoustical control. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413 or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2. Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, enclosed parking structures and utility buildings.	1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.1 Exterior noise transmission, prescriptive method. Wall and floor-ceiling assemblies exposed to the noise source making up the building envelope shall have exterior wall and roof ceiling assemblies meeting a composite STC rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2.	1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Leq-1Hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).	1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.2 Performance method. For buildings located as defined in Sections 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building envelope or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation.	1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information

APPENDIX C

2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior.	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40	1. Provide plans that indicate, if wall and floor-ceiling assemblies separate tenant spaces, tenant spaces and public spaces shall have a Sound Transmission Class (STC) of at least 40.	Floor plans and details
5.508.1 Ozone depletion and global warming reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2.	1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain chlorofluorocarbons (CFCs).	Documentation with evidence
5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs.	<ol style="list-style-type: none"> 1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain chlorofluorocarbons (CFCs). 2. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain Halons. 	Documentation with evidence
5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons.	<ol style="list-style-type: none"> 1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain chlorofluorocarbons (CFCs). 2. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain Halons. 	Documentation with evidence
A5.508.1.3 Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that does not contain HCFCs.	1. Provide documentation with evidence HVAC systems and refrigeration does not contain Hydrochlorofluorocarbons (HCFCs).	Documentation with evidence
A5.508.1.4 Hydrofluorocarbons (HFCs). Install HVAC complying with either of the following: 1. Install HVAC, refrigeration and fire suppression equipment that do not contain HFCs or that do not contain HFCs with a global warming potential greater than 150. 2. Install HVAC and refrigeration equipment that limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1.	<ol style="list-style-type: none"> 1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment will not contain Hydrocarbons (HFCs) or will not contain HFCs with a global warming potential greater than 150. 2. Provide documentation with evidence HVAC systems and refrigeration equipment will limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1. 	Documentation with evidence
5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities. Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO ₂), and potentially other refrigerants. 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions.	This section is not applicable to Metro projects.	None
5.508.2.1 Refrigerant piping. Piping compliant with the California Mechanical Code shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below. 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions.	This section is not applicable to Metro projects.	None
5.508.2.1.1 Threaded pipe. Threaded connections are permitted at the compressor rack. 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions.	This section is not applicable to Metro projects.	None
5.508.2.1.2 Copper pipe. Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less. an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 1. Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. 2. Required prerequisite for this Tier. 3. These measures are currently required elsewhere in statute or in regulation. 4. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions.	This section is not applicable to Metro projects.	None

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CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.508.2.1.2.1 Anchorage. 1/4 inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.1.3 Flared tubing connections. Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil. Exception: Single-flared tubing connections may be used with a multi-ring seal coated with industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long radius elbows.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.2 Valves. Valves and fittings shall comply with the California Mechanical Code and as follows.</p> <p>5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.2.1.1 Pressure detection. A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for use.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.2.2.1 Valve caps. For systems with a refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.2.2.2 Seal caps. If designed for it, the cap shall have a neoprene O-ring in place.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.2.2.1 Chain tethers. Chain tethers to fit over the stem are required for valves designed to have seal caps. Exception: Valves with seal caps that are not removed from the valve during stem operation.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None

APPENDIX C

2013 CALGREEN, ENVIRONMENTAL QUALITY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.508.2.3 Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.3.1 Coil coating. Consideration shall be given the heat transfer efficiency of coil coating to maximize energy efficiency.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.4 Refrigerant receivers. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device that indicates the level of refrigerant in the receiver.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks, and retest for pressure using the same gauge.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than a +/- one pound pressure change from 300 psig, measured with the same gauge.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.6 Evacuation. The system shall be evacuated after pressure testing and prior to charging.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50 microns), and hold for 30 minutes.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold for 30 minutes.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None
<p>5.508.2.6.3 Third vacuum. Pull a third vacuum down to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period.</p> <ol style="list-style-type: none"> Green building measures in this table may be mandatory if adopted by a city, county, or city and county as specified in Section 101.7. Required prerequisite for this Tier. These measures are currently required elsewhere in statute or in regulation. This application checklist is non-regulatory, intended only as an aid to the user and may not contain complete code language. Refer to Chapter 5 and Appendix Chapter A5 for complete code provisions. 	This section is not applicable to Metro projects.	None

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2016 CALGREEN, PLANNING & DESIGN

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.106.1 Storm water pollution prevention. Newly constructed projects and additions which disturb less than one acre of land shall prevent the pollution of stormwater runoff from the construction activities through local ordinance in Section 5.106.1.1 or Best management practices (BMP) in Section 5.106.1.2. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. See Supporting Documents for Section 5.106.1.2 Best management practices (BMP) for the prevention of the pollution of storm water runoff from construction activities. 2. Provide grading plan sheet(s) that indicate the temporary erosion and sediment control and BMPs to prevent and/or control stormwater runoff and discharge of pollutants. Consistent with the requirements of the Regional Water Quality Control Board (RWQCB), and documented in the Stormwater Pollution Prevention Plan (SWPPP) approved for the project, the BMPs shall include: advance planning and training to ensure implementation of the BMPs; erosion and sediment control BMPs in place until the area is permanently stabilized; pollution prevention BMPs to keep the construction site clean; and regular inspection of the construction site to ensure proper installation and maintenance of BMPs. 3. Provide evidence of the approval of the SWPPP and any amendments. 	<p>Grading plan Evidence of the approval of SWPPP (signature page or approval correspondence only)</p>
<p>5.106.1.1 Local ordinance. Comply with a lawfully enacted stormwater management and/or erosion control ordinance. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide civil and grading plan sheet(s) with details that indicate incorporation into the Project design Best Management Practices (BMPs) to pre-treat and infiltrate, retain, and/or reuse the first 0.75 of an inch rain event and the 85th percentile 24-hour storm event as required by the City of Los Angeles LID Ordinance No. 181899 and the Regional Board National Pollutant Discharge Elimination System (NPDES) Municipal permit. This shall include the location and types of BMP devices including pretreatment areas, infiltration areas, inlets and outlets, roof drains, stencil at drainage inlets, trash enclosures, and vegetated and other areas for infiltration. 2. Provide evidence of approval of the LID Report for the Project by the City of Los Angeles, including the Covenant and Agreement (C&A) Form with the Operation and Maintenance (O&M) Plan recorded by the County of Los Angeles. 3. Provide evidence of approval of the Standard Urban Stormwater Mitigation Plan (SUSMP) by the Regional Water Quality Control Board or their designee. 	<p>Civil and grading plan Evidence of approval of LID Report (signature page or approval correspondence only) Evidence of approval of SUSMP (signature page or approval correspondence only)</p>
<p>5.106.1.2 Best management practices (BMP). Prevent the loss of topsoil through wind or water erosion by implementing an effective combination of erosion and sediment control and good housekeeping BMP.</p> <ol style="list-style-type: none"> 1. Soil loss BMP that should be considered for implementation as appropriate for each project include, but are not limited to, the following: <ol style="list-style-type: none"> a. Scheduling construction activity. b. Preservation of natural features, vegetation and soil. c. Drainage swales or lined ditches to control water flow. c. Mulching or hydroseeding to stabilize disturbed soils. e. Erosion control to protect slopes. f. Protection of storm drain outlets (gravel bags or catch basin inserts). g. Perimeter sediment control (perimeter silt fence, fiber rolls). h. Sediment trap or sediment basin to retain sediments on site. i. Stabilized construction exits. j. Wind erosion control. k. Other soil loss BMP acceptable to the enforcing agency. 2. Good housekeeping BMP to manage construction equipment, materials and wastes that should be considered for implementation as appropriate for each project include, but are not limited to, the following: <ol style="list-style-type: none"> a. Material handling and waste management. b. Building materials stockpile management. c. Management of washout areas (concrete, paints, stucco, etc.). d. Control of vehicle/equipment fueling to contractor's staging area. e. Vehicle and equipment cleaning performed off site. f. Spill prevention and control. g. Other housekeeping BMP acceptable to the enforcing agency. [2013 CALGreen] 	<ol style="list-style-type: none"> 1. Provide grading plan sheet(s) that indicate temporary BMPs in the SWPPP during grading and construction and long-term BMPs that are a part of the Project consistent with the City of Los Angeles LID Plan and the NPDES Municipal permit. 2. Provide Supporting Documentation consistent with the requirements of Sections 5.106.1 and 5.106.1.1. 	<p>Grading plan Evidence of approval of LID Report (signature page or approval correspondence only) Evidence of approval of SWPPP (signature page or approval correspondence only) Evidence of approval of SUSMP (signature page or approval correspondence only)</p>
<p>A5.106.2 Storm water design. Design storm water runoff rate and quantity in conformance with Section A5.106.2.1 and storm water runoff quality by Section A5.106.2.2 or by local requirements, whichever are stricter. [2016 CALGreen]</p>	<p>See Supporting Documentation for Section 5.106.1.2 Best Management Practices (BMPs). See Supporting Documentation for Section 5.106.1.1 Local ordinance for the plans and other information associated with the City of Los Angeles LID Plan and the NPDES Municipal permit that shall be submitted.</p>	<p>Grading plan Evidence of approval of LID Report (signature page or approval correspondence only) Evidence of approval of the SWPPP (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>
<p>A5.106.2.1 Storm water runoff rate and quantity. Implement a storm water management plan resulting in no net increase in rate and quantity of storm water runoff from existing to developed conditions. Exception: If the site is already greater than 50 percent impervious, implement a storm water management plan resulting in a 25 percent decrease in rate and quantity. [2010 CALGreen]</p>	<p>See Supporting Documentation for Section 5.106.1.2 Best Management Practices (BMPs). See Supporting Documentation for Section 5.106.1.1 Local ordinance for the plans and other information associated with the City of Los Angeles LID Plan and the NPDES Municipal permit that shall be submitted.</p>	<p>Grading plan Evidence of approval of the LID Report (signature page or approval correspondence only) Evidence of approval of the SWPPP (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>
<p>A5.106.2.2 Storm water runoff quality. Use post construction treatment control best management practices (BMPs) to mitigate (infiltrate, filter or treat) storm water runoff from the 85th percentile 24-hour runoff event (for volume-based BMPs) or the runoff produced by a rain event equal to two times the 85th percentile hourly intensity (for flow-based BMPs). [2010 CALGreen]</p>	<p>See Supporting Documentation for Section 5.106.1.2 Best Management Practices (BMPs). See Supporting Documentation for Section 5.106.1.1 Local ordinance for the plans and other information associated with the City of Los Angeles LID Plan and the NPDES Municipal permit that shall be submitted.</p>	<p>Grading plan Evidence of approval of the LID Report (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>
<p>A5.106.3 Low impact development (LID). Reduce peak runoff in compliance with Section 5.106.1. Employ at least two of the following methods or other best management practices to allow rainwater to soak into the ground, evaporate into the air or collect in storage receptacles for irrigation or other beneficial uses. LID strategies include, but are not limited to those listed in Section A5.106.3 [2010 CALGreen]</p>	<p>See Supporting Documentation for Section 5.106.1.1 Local ordinance.</p>	<p>Grading plan Evidence of approval of the LID Report (signature page or approval correspondence only) Evidence of approval of the SUSMP (signature page or approval correspondence only)</p>

APPENDIX C

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.106.4 Bicycle parking. For buildings within the authority of California Building Standards Commission as specified in Section 103, comply with Section 5.106.4.1. For buildings within the authority of the Division of the State Architect pursuant to Section 105, comply with Section 5.106.4.2. [2016 CALGreen]	TBD	TBD
5.106.4.1 Bicycle parking. [BSC-CG] Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, whichever is stricter. [2016 CALGreen]	TBD	TBD
5.106.4.1.1 Short-term bicycle parking. If the new project or addition or alteration is anticipated to generate visitor traffic, provide permanently anchored bicycle racks within 200 feet of the visitors' entrance, readily visible to passers-by, for 5 percent of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack. Exception: Additions or alterations which add nine or fewer visitor vehicular parking spaces. [2016 CALGreen]	<ol style="list-style-type: none"> 1. Provide the calculations for the number of required short-term bicycle parking spaces. Metro projects with stations shall utilize the methodology defined in Metro Rail Design Criteria 6.12.5. Metro projects consisting of stand alone building(s) shall use the methodology defined in the City of Los Angeles Ordinance No. 182386. The calculations shall include applicable information such as: ridership, square footage, land use type, generation factors, sources, and other information related to the methodology used. 2. Provide plan sheet(s) with the statistical summary of the short-term bicycle parking. 3. Provide plan sheets for each station or stand alone building(s) indicating the location of the short-term bicycle parking spaces and the type of facilities that will be provided (i.e., rack, locker). 	<p>Calculations of number of required short-term bicycle parking spaces Plan sheet with the statistical summary Site plan or floor plans indicating the location Plan sheet with details</p>
5.106.4.1.2 Long-term bicycle parking. For new buildings with over 10 or more tenant-occupants or for additions or alterations that add 10 or more tenant vehicular parking spaces, provide secure bicycle parking for 5 percent of tenant vehicle parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall meet one of the following: <ol style="list-style-type: none"> 1. Covered, lockable enclosures with permanently anchored racks for bicycles; 2. Lockable bicycle rooms with permanently anchored racks; or 3. Lockable, permanently anchored bicycle lockers. Note: Additional information on recommended bicycle accommodations may be obtained from Sacramento Area Bicycle Advocates. [2016 CALGreen]	<ol style="list-style-type: none"> 1. Provide the calculations for the number of required long-term bicycle parking spaces. Metro projects with stations shall utilize the methodology defined in Metro Rail Design Criteria 6.12.5. Metro projects consisting of stand alone building(s) shall use the methodology defined in the City of Los Angeles Ordinance No. 182386. The calculations shall include applicable information such as: ridership, square footage, land use type, generation factors, sources, and other information related to the methodology used. 2. Provide plan sheet(s) with the statistical summary of the long-term bicycle parking. 3. Provide plan sheets for each station or stand alone building(s) indicating the location of the long-term bicycle parking spaces and the type of facilities that will be provided (i.e., rack, locker). Provide plan sheets with details illustrating the dimensions and design of the bicycle parking facilities (i.e., rack, locker).	<p>Calculations of number of required long-term bicycle parking spaces Plan sheet with the statistical summary Site plan or floor plans indicating the location Plan sheet with details</p>
A5.106.4.3 Changing rooms. For buildings with over 10 tenant-occupants, provide changing/shower facilities for tenant-occupants only in accordance with Table A5.106.4.3 or document arrangements with nearby changing/shower facilities. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide the calculation of the number of changing/shower facilities consistent with CALGreen Table A5.106.4.3. 2. Provide building plans and/or floor plans with the location(s) of the changing/shower facilities. 3. If changing/shower facilities are provided at a nearby location, provide correspondence or other evidence that arrangements have been made and where they will occur. 	<p>Calculation of number of changing/shower facilities Building plan and/or floor plan Correspondence or other evidence that arrangements have been made at a nearby location</p>
A5.106.5.1 Designated parking for clean air vehicles. Provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table A5.106.5.1.1 or A5.106.5.1.2. [2016 CALGreen]	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
A5.106.5.1.1 Tier 1. Ten percent of total spaces. [BSC-CG] Provide 10 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as follows [in Table A5.106.5.1.1]. Note: Vehicles bearing Cleaning Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces[2016 CALGreen]	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
A5.106.5.1.2 Tier 2. Provide 12 percent of total designated parking spaces for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles as follows [in Table A5.106.5.1.2]. A5.106.5.1.3 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/ VANPOOL/ EV Note: Vehicles bearing Cleaning Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. [2016 CALGreen]	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
A5.106.5.1.4 Vehicle designations. Building managers may consult with local community Transit Management Associations (TMAs) for methods of designating qualifying vehicles, such as issuing parking stickers. Notes: <ol style="list-style-type: none"> 1. Information on qualifying vehicles, car labeling regulations and DMV CAV decals may be obtained from the following sources: a. California DriveClean. b. California Air Resources Board. c. U.S. EPA fuel economy regulations and standards. d. DMV Registration Operations. 2. Purchasing policy and refueling sites for low emitting vehicles for state employees use can be found at the Department of General Services. [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles as shown in Tables A5.106.5.1.1 and A5.106.5.1.2, respectively, for Tier 1 (10% of total spaces) and Tier 2 (12% of total spaces). 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide site plan and/or floor plan sheet(s) that provide the statistical summary of the designated parking spaces. 	<p>Calculation of number of designated parking spaces Site plan and/or floor plan with locations and statistical summary</p>
5.106.5.2 Designated parking for clean air vehicles. In new projects or additions or alterations that add 10 or more vehicular parking spaces, provide designated parking for any combination of low-emitting, fuel-efficient and carpool/van pool vehicles as shown in Table 5.106.5.2. [2016 CALGreen]	<ol style="list-style-type: none"> 1. Provide the calculation of the designated parking spaces to be provided for low-emitting, fuel efficient, and carpool/van pool vehicles based on the parking space requirements shown in Table 5.106.5.2. 2. Provide site plan and/or floor plan sheet(s) that indicate the parking stall locations and a detail of the markings to be provided in paint. 3. Provide plan sheet(s) that provide the statistical summary of designated parking spaces 	<p>Calculation of the designated parking spaces Site plan and/or floor plan Plan sheet with statistical summary</p>
5.106.5.2.1 Parking stall marking. Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle: CLEAN AIR/ VANPOOL/ EV Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. [2013 CALGreen]	Provide site plan and/or floor locations and a detail of the markings to be provided in paint.	Site plan and/or floor locations

APPENDIX C

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.106.5.3 Electric Vehicle (EV) Charging. [N] Construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code and as follows: [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2. 	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>5.106.5.3.1 Single charging space requirements. [N] When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:</p> <ol style="list-style-type: none"> 1. The type and location of the EVSE. 2. A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit. 3. The raceway shall not be less than trade size 1". 4. The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent. 5. The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE. [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2. 	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>A5.106.5.3.1 Tier 1. Table A5.106.5.3.1 shall be used to determine the number of multiple charging spaces required for future installation of EVSE. Refer to Section 5.106.5.3.2 for design space requirements.</p>	<ol style="list-style-type: none"> 1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2. 	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>5.106.5.3.2 Multiple charging space requirements. [N] When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/are required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:</p> <ol style="list-style-type: none"> 1. The type and location of the EVSE. 2. The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent. 3. Plan design shall be based upon 40-ampere minimum branch circuits. 4. Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage. 5. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE. [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2. 	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>A5.106.5.3.2 Tier 2. Table A5.106.5.3.2 shall be used to determine if single or multiple charging space requirements apply for future installation of EVSE. When a single charging space is required, refer to Section 5.106.5.3.1 for design requirements. When multiple charging spaces are required, refer to Section 5.106.5.3.2 for design requirements. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2. 	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>5.106.5.3.3 EV charging space calculation. [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE. Exceptions: On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:</p> <ol style="list-style-type: none"> 1. Where there is insufficient electrical supply. 2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project. [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Provide site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Table 5.106.5.3.3. 3. In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1. 4. If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2. 	<p>Site plan and/or parking plan Calculations Plan and details</p>
<p>5.106.5.3.4 Identification [N]. The service panel or subpanel circuit directory shall identify the reserved over-current protective device space(s) for future EV charges as "EV CAPABLE." The raceway termination location shall be permanently and visibly marked as "EV CAPABLE." [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or electrical plan sheet(s) that indicate the location and type of facilities to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Tables SA.5.106.5.3.1 and A5.106.5.3.2, respectively, for Tier 1 (approximately 4%) and Tier 2 (approximately 6%). 	<p>Provide site plan, floor plan, and/or electrical plan Calculations of charging spaces required</p>
<p>A5.106.5.3.3 Identification. The service panel or subpanel circuit directory shall identify the reserved over-current protective device space(s) for future EV charges as "EV CAPABLE." The raceway termination location shall be permanently and visibly marked as "EV CAPABLE." [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or electrical plan sheet(s) that indicate the location and type of facilities to facilitate future installation of electric vehicle supply equipment (EVSE). 2. Provide calculations of charging spaces required per Tables SA.5.106.5.3.1 and A5.106.5.3.2, respectively, for Tier 1 (approximately 4%) and Tier 2 (approximately 6%). 	<p>Provide site plan, floor plan, and/or electrical plan Calculations of charging spaces required</p>
<p>5.106.5.3.5 [N] Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. The California Department of Transportation adopts and publishes the California Manual on Uniform Traffic Control Devices (California MUTCD) to provide uniform standards and specifications for all official traffic control devices in California. Zero Emission Vehicle Signs and Pavement Markings can be found in the New Policies & Directives number 13-01. www.dot.ca.gov/hq/traffops/policy/13-01.pdf. 2. See Vehicle Code Section 22511 EV charging spaces signage in offstreet parking facilities and for use of EV charging spaces. 3. The Governor's Office of Planning and Research published a Zero-Emission Vehicle Community Readiness Guidebook which provides helpful information for local [2016 CALGreen] 	<p>See Supporting Documentation for Section 5.106.5.3 Electric Vehicle (EV) Charging.</p>	<p>Site plan, floor plan, and/or electrical plan</p>

APPENDIX C

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
A5.106.6 Parking capacity. Design parking capacity to meet but not exceed minimum local zoning requirements. [2010 CALGreen]	1. Provide calculations indicating that the parking capacity meets the minimum requirements of the zoning district where the Project occurs. 2. Provide parking plans that define the methods that shall be used to reduce the area for onsite parking.	Calculations indicating parking capacity meets zoning district requirement Parking plans
A5.106.6.1 Reduce parking capacity. With the approval of the enforcement authority, employ strategies to reduce on-site parking area by: 1. Use of on street parking or compact spaces, illustrated on the site plan or 2. Implementation and documentation of programs that encourage occupants to carpool, ride share or use alternate transportation. Note: Strategies for programs may be obtained from local TMAs. [2010 CALGreen]	1. Provide calculations indicating that the parking capacity meets the minimum requirements of the zoning district where the Project occurs. 2. Provide parking plans that define the methods that shall be used to reduce the area for onsite parking.	Calculations indicating parking capacity meets zoning district requirement Parking plans
A5.106.7 Exterior wall shading. Meet requirements in the current edition of the California Energy Code and comply with either Section A5.106.7.1 or A5.106.7.2 for wall surfaces. If using vegetative shade, plant species documented to reach desired coverage within 5 years of building occupancy. [2013 CALGreen]	1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.	Site plan, floor plan, and/or elevation
A5.106.7.1 Fenestration. Provide vegetative or man-made shading devices for all fenestration on east-, south-, and west-facing walls. [2013 CALGreen]	1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.	Site plan, floor plan, and/or elevation
A5.106.7.1.1 East and west walls. Shading devices shall have 30-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. Calculate shade coverage on the summer solstice at 10AM fro east-facing walls and at 3PM for west-facing walls. [2013 CALGreen]	1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.	Site plan, floor plan, and/or elevation
A5.106.7.1.2 South walls. Shading devices shall have 60-percent coverage to a height of 20 feet or to the top of the exterior wall, whichever is less. [2013 CALGreen]	1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.	Site plan, floor plan, and/or elevation
A5.106.7.2 Opaque wall areas. Use wall surfacing with minimum SRI 25 (aged), for 75-percent of opaque wall areas. Exception: Use of vegetated shade in Wildland-Urban Interface Areas as defined in Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) of the California Building Code shall meet the requirements of that chapter. Note: If not available from the manufacturer, aged SRI value calculations may be found at the California Energy Commission's website at www.energy.ca.gov . [2013 CALGreen]	1. Provide site plan, floor plan, and/or elevations that indicate the exterior walls of buildings meet the requirements of the California Energy Code through: the use of fenestration on the east, south, and west-facing walls; or opaque wall areas.	Site plan, floor plan, and/or elevation
5.106.8 Light pollution reduction. [N] Outdoor lighting systems shall be designed and installed to comply with the following: 1. The minimum requirements in the California Energy Code for Lighting Zones 1-4 as defined in Chapter 10 of the California Administrative Code; and 2. Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and 3. Allowable BUG ratings not exceeding those shown in Table 5.106.8, or Comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent. Exceptions: [N] 1. Luminaires that qualify as exceptions in Section 140.7 of the California Energy Code. 2. Emergency lighting. [Refer to Table 5.106.8 (N)] 3. Building façade meeting the requirements of Table 140.7-B of the California Energy Code, Part 6. 4. Custom lighting features as allowed by the local enforcing agency, as permitted by Section 101.8 Alternate materials, designs and methods of construction. Note: [N] See also California Building Code, Chapter 12, Section 1205.6 for college campus lighting requirements for parking facilities and walkways. [2016 CALGreen]	1. Provide photometric plans and calculations indicating the outdoor lighting systems shall be designed and installed to comply with the minimum requirement of: the California Energy Code; the Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and allowable BUG ratings not exceeding those shown in CALGreen Table 5.106.8.	Photometric plan and calculations
5.106.10 Grading and paving. Construction plans shall indicate how site grading or a drainage system will manage all surface water flows to keep water from entering buildings. Examples of methods to manage surface water include, but are not limited to, the following: 1. Swales. 2. Water collection and disposal systems. 3. French drains. 4. Water retention gardens. 5. Other water measures which keep surface water away from buildings and aid in groundwater recharge. Exception: Additions or alterations not altering the drainage path. [2016 CALGreen]	1. Provide grading plans and details or sections that indicate how site grading and/or a drainage system will manage all surface water flows to keep water from entering buildings.	Grading plan and details or sections
A5.106.11 Heat island effect. Reduce nonroof heat islands by Section A5.106.11.1 and roof heat islands by Section A5.106.11.2. [2013 CALGreen]	1. Provide site plans that indicate the location and design feature(s) to reduce nonroof heat islands and roof heat islands. 2. Provide details and sections, as needed, to illustrate the design feature(s) that shall be used.	Site plan Details and sections
A5.106.11.1 Hardscape alternatives. Use one or a combination of strategies 1 through 2 for 50 percent of site hardscape or put 50 percent of parking underground. 1. Use light colored materials with an initial solar reflectance value of at least .30 as determined in accordance with ASTM Standards E 1918 or C 1549. 2. Use open-grid pavement system or pervious or permeable pavement system. [2013 CALGreen]	1. Provide site plans that indicate the location and design feature(s) to reduce nonroof heat islands and roof heat islands. 2. Provide details and sections, as needed, to illustrate the design feature(s) that shall be used.	Site plan Details and sections

APPENDIX C

2016 CALGREEN, PLANNING & DESIGN *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.106.11.2 Cool roof for reduction of heat island effect. Use roofing materials having a minimum aged solar reflectance and thermal emittance complying with Sections A5.106.11.2.1 and A5.106.11.2.2 or a minimum aged of Solar Reflectance Index (SRI) complying with Section A5.106.11.2.3 and as shown in Table A5.106.11.2.2 for Tier 1 or Table A5.106.11.2.2 for Tier 1 or Table A5.106.11.2.3 for Tier 2.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Roof constructions that have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot. 2. Roof area covered by building integrated solar photovoltaic and building integrated solar thermal panels. [2013 CALGreen] 	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or roof plan sheet(s) that indicate the type and location of roofing materials used to result in a cool roof for reduction of heat island effects as defined in Section A5.106.11.2. 2. Provide details and elevations, as needed, to illustrate use of roofing materials to achieve the desired thermal emittance. As appropriate, provide a Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) for the roofing materials. 	<p>Site plan, floor plan, and/or roof plan Details and elevations</p>
<p>A5.106.11.2.1 Solar Reflectance. Roofing materials shall have a minimum aged solar reflectance equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2.</p> <p>If Cool Roof Rating Council (CRRC) testing for aged reflectance is not available for any roofing products, the aged value shall be determined using the CRRC certified initial value using the equation $p_{aged} = [0.2 + \beta (p_{initial} - 0.2)]$, where $p_{initial}$ = the initial solar reflectance and soiling resistance, β, listed by product type in Table A5.106.11.2.1.</p> <p>Solar reflectance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code. [2013 CALGreen]</p>	<p>See Supporting Documentation for Section A5.106.11.2 Cool roof for reduction of heat island effect.</p>	<p>Site plan, floor plan, and/or roof plan Details and elevations</p>
<p>A5.106.11.2.2 Thermal emittance. Roofing materials shall have a CRRC initial or aged thermal emittance as determined in accordance with ASTM E 408 or C 1371 equal to or greater than those specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2.</p> <p>Thermal emittance may also be certified by other supervisory entities approved by the Energy Commission pursuant to Title 24, Part 1, California Administrative Code. [2013 CALGreen]</p>	<p>See Supporting Documentation for Section A5.106.11.2 Cool roof for reduction of heat island effect.</p>	<p>Site plan, floor plan, and/or roof plan Details and elevations</p>
<p>A5.106.11.2.3 Solar reflectance index alternative. Solar Reflectance Index (SRI) equal to or greater than the values specified in Table A5.106.11.2.2 for Tier 1 and Table A5.106.11.2.3 for Tier 2 may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.</p> <p>SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E 1980-01 as specified in the California Energy Code, Section 118(i)3. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A5.106.11.2.1 if the CRRC certified aged solar reflectance are not available. Certified Thermal emittance used in the SRI-WS may be either the initial value or the aged value listed in the CRRC.</p> <p>Solar reflectance and thermal emittance may also be certified by other supervisory entities approved by the Commission pursuant to Title 24, Part 1, California Administrative Code.</p> <p>Note: The Solar Reflectance Index Calculation Worksheet (SRI-WS) is available by contacting the Energy Standard Hotline at 1-800-772-3300, website at www.energy.ca.gov or by email at Title24@energy.state.ca.us. [2013 CALGreen]</p>	<p>See Supporting Documentation for Section A5.106.11.2 Cool roof for reduction of heat island effect.</p>	<p>Site plan, floor plan, and/or roof plan Details and elevations</p>
<p>A5.106.11.3 Verification of Compliance. If no documentation is available, an inspection shall be conducted to ensure roofing materials meet cool roof aged solar reflectance and thermal emittance or SRI values. [2013 CALGreen]</p>	<p>See Supporting Documentation for Section A5.106.11.2 Cool roof for reduction of heat island effect.</p>	<p>Site plan, floor plan, and/or roof plan Details and elevations</p>

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2016 CALGREEN, ENERGY EFFICIENCY

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.201.1 Scope [BSC-CG]. California Energy Code [DSA-SS]. For the purposes of mandatory energy efficient standards in this code, the California Energy Commission will continue to adopt mandatory building standards. [2016 CALGreen]	No Supporting Documentation required.	None
A5.203.1 Energy efficiency. Nonresidential, high-rise residential and hotel/motel buildings that include lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and either A5.203.1.2.1 or A5.203.1.2.2. Newly constructed buildings, as well as additions and alterations, are included in the scope of these sections. Buildings permitted without lighting or mechanical systems shall comply with Section A5.203.1.1 but are not required to comply with Sections A5.203.1.1.2 or A5.203.1.2. [2013 CALGreen]	1. Provide evidence that lighting and/or mechanical systems shall comply with Sections A5.203.1.1 and A5.203.1.2.1 or A5.203.1.2.2. 2. In the event of buildings without lighting, provide evidence they comply with Section A5.203.1.1.	Evidence that lighting and/or mechanical systems comply For buildings without lighting, provide evidence of compliance
A5.203.1.1. Tier 1 and Tier 2 prerequisites. Each of the following efficiency measures is required for all applicable components of the building project. [2016 CALGreen]	Provide evidence that newly installed outdoor lighting power is no greater than 90% of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	Evidence that installed outdoor lighting power is no greater than 90% of Title 24 requirements
A5.203.1.1.1 Outdoor lighting. Newly installed outdoor lighting power shall be no greater than 90 percent of the Allowed Outdoor Lighting Power. The Allowed Outdoor Lighting Power calculation is specified in Title 24, Part 6, Section 140.7 "Requirements For Outdoor Lighting." [2016 CALGreen]	Provide evidence that newly installed outdoor lighting power is no greater than 90% of the Title 24, Part 6 calculated value of allowed outdoor lighting power.	Evidence that installed outdoor lighting power is no greater than 90% of Title 24 requirements
A5.203.1.1.2 Service water heating in restaurants. Newly constructed restaurants 8,000 square feet or greater and with service water heaters rated 75,000 Btu/h or greater installed a solar water-heating system with a minimum solar savings fraction of 0.15 or meet one of the exceptions. [2013 CALGreen]	Not applicable to Metro projects.	None
A5.203.1.2 Performance standard. Comply with one of the advanced efficiency levels indicated below. [2016 CALGreen]	1. Provide documentation of the Energy Budget for buildings complying with advanced energy efficiency levels defined in Sections A5.203.1.2.1 Tier 1 and A5.203.1.2.2 Tier 2, as calculated by compliance software certified by the Energy Commission.	Documentation of the Energy Budget
A5.203.1.2.1 Tier 1. Buildings complying with the first level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building or addition does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required. 1. For building projects that include indoor lighting or mechanical systems, but not both: No greater than 95 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. 2. For building projects that include indoor lighting and mechanical systems: No greater than 90 percent of the Title 24, Part 6 Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. [2016 CALGreen]	1. Provide documentation of the Energy Budget for buildings complying with advanced energy efficiency levels defined in Sections A5.203.1.2.1 Tier 1 and A5.203.1.2.2 Tier 2, as calculated by compliance software certified by the Energy Commission.	Documentation of the Energy Budget
A5.203.1.2.2 Tier 2. Buildings complying with the second level of advanced energy efficiency shall have an Energy Budget that is no greater than indicated below, depending on the type of energy systems included in the building project. If the newly constructed building or addition does not include indoor lighting or mechanical systems, then no additional performance requirements above Title 24, Part 6 are required. 1. For building systems that include indoor lighting or mechanical systems, but not both: No greater than 90 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. 2. For building projects that include indoor lighting and mechanical systems: No greater than 85 percent of the Title 24, Part 6, Energy Budget for the Standard Design Building as calculated by compliance software certified by the Energy Commission. Note: For Energy Budget calculations, high-rise residential and hotel/motel buildings are considered nonresidential buildings. [2016 CALGreen]	1. Provide documentation of the Energy Budget for buildings complying with advanced energy efficiency levels defined in Sections A5.203.1.2.1 Tier 1 and A5.203.1.2.2 Tier 2, as calculated by compliance software certified by the Energy Commission.	Documentation of the Energy Budget
A5.211.1 On-site renewable energy. Use on-site renewable energy sources such as solar, wind, geothermal, low-impact hydro, biomass and bio-gas for at least 1 percent of the electric power calculated as the product of the building service voltage and the amperage specified by the electrical service overcurrent protection device rating or 1kW, (whichever is greater), in addition to the electrical demand required to meet 1 percent of the natural gas and propane use. The building project's electrical service overcurrent protection device rating shall be calculated in accordance with the 2016 California Electrical Code. Natural gas or propane use is calculated in accordance with the 2016 California Plumbing Code. [2016 CALGreen]	1. Provide evidence that the Project will use onsite renewable energy as specified in Section A5.211.1 2. Provide supporting calculations to meet the requirements of A5.211.1.	Evidence that Project will use onsite renewable energy Supporting calculations
A5.211.1.1 Documentation. Using a calculation method approved by the California Energy Commission, calculate the renewable on-site energy system to meet the requirements of Section A5.211.1, expressed in kW. Factor in net-metering, if offered by a local utility, on an annual basis. [2016 CALGreen]	1. Provide evidence that the Project will use onsite renewable energy as specified in Section A5.211.1 2. Provide supporting calculations to meet the requirements of A5.211.1.	Evidence that Project will use onsite renewable energy Supporting calculations
A5.211.3 Green power. If offered by local utility provider, participate a renewable energy portfolio program that provides a minimum of 50-percent electrical power from renewable sources. Maintain documentation through utility billings. [2013 CALGreen]	Provide evidence of participation in the local utility's renewable energy portfolio program that has a minimum of 50% electrical power from renewable sources.	Evidence of participation
A5.212.1 Elevators and escalators. In buildings with more than one elevator or two escalators, provide systems and controls to reduce the energy demand of elevators and escalators as follows. Document systems operation and controls in the project specifications and commissioning plan. [2013 CALGreen].	1. Provide architectural plans and section(s) that show elevators and escalators. 2. Provide project specifications that confirm the systems operations and controls reduce the energy demand.	Architectural plan and sections Project specifications
A5.212.1.1 Elevators. Traction elevators shall have a regenerative drive system that feeds electrical power back into the building grid when the elevator is in motion. [2013 CALGreen].	1. Provide architectural plans and section(s) that show elevators and escalators. 2. Provide project specifications that confirm the systems operations and controls reduce the energy demand.	Architectural plan and sections Project specifications
A5.212.1.1.1 Car lights and fan. A parked elevator shall turn off its car lights and fan automatically until the elevator is called for use. [2013 CALGreen].	1. Provide architectural plans and section(s) that show elevators and escalators. 2. Provide project specifications that confirm the systems operations and controls reduce the energy demand.	Architectural plan and sections Project specifications
A5.212.1.2 Escalators. An escalator shall have a variable voltage variable frequency (VVVF) motor drive system that is fully regenerative when the escalator is in motion. [2013 CALGreen]	Provide evidence that escalator(s) shall have a variable voltage variable frequency (VVVF) motor drive system that is fully regenerative when the escalator is in motion.	Evidence that escalator(s) shall have a variable voltage variable frequency (VVF) motor drive system
A5.212.1.4 Controls. Controls that reduce energy demand shall meet requirements of CCR, Title 8, Chapter 4, Subchapter 6 and shall not interrupt emergency operations for elevators required in CCR, Title 24, Part 2, California Building Code. [2013 CALGreen]	Provide notes on architectural plans that include elevators stating controls that reduce energy demand shall meet the requirements in California Code of Regulations (CCR), Title 8, Chapter 4, Subchapter 6 and shall not interrupt emergency operations for elevators required in CCR, Title 24, Part 2, California Building Code.	Architectural plans
A5.213.1 Steel Framing. Design for and employ techniques to avoid thermal bridging. [2013 CALGreen]	1. Provide structural plans that provide design and techniques that avoid thermal bridging. 2. Provide project specifications that confirm that thermal bridging will be avoided.	Structural plan Project specifications

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2016 CALGREEN, WATER EFFICIENCY & CONSERVATION

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.303.1 Meters. Separate submeters or metering devices shall be installed for the uses described in Sections 5.303.1.1 and 5.303.1.2.</p> <p>5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters or metering devices shall be installed as follows:</p> <ol style="list-style-type: none"> For each individual leased, rented or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s). Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s). Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW). <p>5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or an addition that is projected to consume more than 1,000 gal/day. [2016 CALGreen]</p>	<ol style="list-style-type: none"> Provide utility plans and landscape plans that show separate submeters for domestic services, fire services, and landscape irrigation. Provide landscape plan irrigation legend and details that show submeters or metering devices for irrigation plan. 	<p>Utility plan and landscape plan Landscape plan, irrigation legend, and details</p>
<p>5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters shall be installed as follows:</p> <ol style="list-style-type: none"> For each individual leased, rented, or other tenant space within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems: <ol style="list-style-type: none"> Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s). Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s). Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW). [2016 CALGreen] 	TBD	TBD
<p>5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day. [2016 CALGreen]</p>	TBD	TBD
<p>A5.303.2.3.1 Tier 1 – 12 percent savings. [BSC] A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 12 percent shall be provided. The reduction shall be based on the maximum allowable water use per plumbing fixture and fitting as required by the California Building Standards Code. The 12-percent reduction in potable water use shall be demonstrated by one of the following methods:</p> <ol style="list-style-type: none"> Prescriptive method. Each plumbing fixture and fitting shall not exceed the maximum flow rate at greater than or equal to 12-percent reduction as specified in Table A5.303.2.3.1; or Performance method. A calculation demonstrating a 12-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided. [2013 CALGreen] 	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fixture fittings that indicate that a reduction in the overall use of potable water within the building will be provided by 12% for Tier 1, 20% Tier 2, and 25% for Tier 3. For Tier 1, provide supporting calculations (using either the prescriptive method or performance method) that demonstrate a 12% reduction in potable water use can be achieved. 	<p>Schedule of plumbing fixtures and fixture fittings Supporting calculations</p>
<p>A5.303.2.3.2 Tier 2 – 20-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 20 percent shall be provided. A calculation demonstrating a 20-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided. [2013 CALGreen]</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fixture fittings that indicate that a reduction in the overall use of potable water within the building will be provided by 12% for Tier 1, 20% Tier 2, and 25% for Tier 3. For Tier 2, provide supporting calculations demonstrating a 20% reduction in the building “water baseline use” per CALGreen Table A5.303.2.3.2. 	<p>Schedule of plumbing fixtures and fixture fittings Supporting calculations</p>
<p>A5.303.2.3.3 – 25-percent savings. A schedule of plumbing fixtures and fixture fittings that will reduce the overall use of potable water within the building by 25 percent shall be provided. A calculation demonstrating a 25-percent reduction in the building “water use baseline” as established in Table A5.303.2.2 shall be provided. [2013 CALGreen]</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fixture fittings that indicate that a reduction in the overall use of potable water within the building will be provided by 12% for Tier 1, 20% Tier 2, and 25% for Tier 3. For Tier 3, provide supporting calculations demonstrating a 25% reduction in the building “water baseline use” per CALGreen Table A5.303.2.3.3. 	<p>Schedule of plumbing fixtures and fixture fittings Supporting calculations</p>
<p>A5.303.2.3.4 Nonpotable water systems for indoor use. Utilizing nonpotable water systems (such as captured rainwater, treated graywater, and recycled water) intended to supply water closets, urinals, and other allowed uses, may be used in the calculations demonstrating the 12-, 20- or 25-percent reduction. The nonpotable water systems shall comply with the current edition of the California Plumbing Code. [2013 CALGreen]</p>	<ol style="list-style-type: none"> Provide site plans and plumbing plans that indicate the use of nonpotable water systems (i.e., rainwater, treated graywater, recycled water) to supply water closets, urinals, and other allowed uses. Provide on-site locations of devices for the capture of rainwater. Also indicate that nonpotable water systems shall comply with the current edition of the California Plumbing Code. Provide calculations that demonstrate 30%, 35%, or 40% reduction for Tiers 1, 2, and 3, respectively. 	<p>Site plans and plumbing plans Supporting calculations</p>
<p>5.303.3 Water conserving plumbing fixtures and fittings. Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with the following: [2016 CALGreen]</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings Specifications for future fixtures and fittings</p>
<p>5.303.3.1 Water closets. The effective flush volume of all water closets shall not exceed 1.28 gallons per flush. Tank-type water closets shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Tank-Type Toilets. Note: The effective flush volume of dual flush toilets is defined as the composite, average flush volume of two reduced flushes and one full flush. [2016 CALGreen]</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings Specifications for future fixtures and fittings</p>
<p>5.303.3.2.1 Wall mounted urinals. The effective flush volume of wall-mounted urinals shall not exceed 0.125 gallons per flush. 5.303.3.2.2 Floor mounted urinals. The effective flush volume of floor-mounted or other urinals shall not exceed 0.5 gallons per flush. [2016 CALGreen]</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings Specifications for future fixtures and fittings</p>
<p>5.303.3.3.1 Single showerhead. Showerheads shall have a maximum flow rate of not more than 2.0 gallons per minute at 80 psi. Showerheads shall be certified to the performance criteria of the U.S. EPA WaterSense Specification for Showerheads. [2016 CALGreen]</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings Specifications for future fixtures and fittings</p>
<p>5.303.3.3.2 Multiple showerheads serving one shower. When a shower is served by more than one showerhead, the combined flow rate of all showerheads and/or other shower outlets controlled by a single valve shall not exceed 2.0 gallons per minute at 80 psi, or the shower shall be designed to allow only one shower outlet to be in operation at a time. Note: A hand-held shower shall be considered a showerhead. [2016 CALGreen]</p>	<ol style="list-style-type: none"> Provide schedule of plumbing fixtures and fittings that demonstrate compliance with the water conservation levels defined in Section 5.303.3. Provide specifications for the fixture and fittings from the manufacturer that indicates compliance with flush volumes and rate of flow if information is not provided on plans. 	<p>Plumbing fixtures and fittings Specifications for future fixtures and fittings</p>

APPENDIX C

2016 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.303.3 Appliances and fixture commercial application. Appliances and fixtures shall meet the following:</p> <ol style="list-style-type: none"> 1. Clothes washers shall have a maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the California Code of Regulations. 2. Dishwashers shall meet the following water use standards: <ol style="list-style-type: none"> a. Residential – ENERGY STAR <ol style="list-style-type: none"> i. Standard Dishwashers – 4.25 gallons per cycle. ii. Compact Dishwashers – 3.5 gallons per cycle. b. Commercial – Shall be in accordance with ENERGY STAR requirements. Refer to Table A5.303.3. 3. Ice makers shall be air cooled. 4. Food steamers shall be connectionless or boilerless - and shall consume no more than 2 gallons of water per pan per hour, including condensate water, for batch type steamers, and no more than 5 gallons water per pan per hour, including condensate water, for cook to order steamers. 5. The use and installation of water softeners that discharge to the community sewer system may be limited or prohibited by local agencies if certain conditions are met. 6. Combination ovens shall use a maximum of 1.5 gallons of water per pan, including condensate water. 7. Commercial pre-rinse spray valves manufactured on or after January 1, 2006 shall function at equal to or less than 1.6 gpm (0.10 L/s) at 60 psi (414 kPa) and <ol style="list-style-type: none"> a. Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate b. Be equipped with an integral automatic shutoff c. Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gpm (0.08 L/s) or less. 8. Food waste pulping systems shall use no more than 2 gpm of potable water. 8.1 Note: potable water excludes on-site graywater use, such as dishwasher discharge water. [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Provide documentation that dishwashers within commercial uses at Metro facilities shall be in accordance with ENERGY STAR requirements per CALGreen Table A5.303.3. 2. Provide documentation that ice makers, food steamers, combination ovens, food waste pulping systems, etc. comply with the requirements of Section A5.303.3. 	<p>Documentation that dishwashers is in compliance with ENERGY STAR requirements</p> <p>Documentation that ice makers, food steamers, combination ovens, food waste pulping systems comply</p>
<p>5.303.3.4.1 Nonresidential Lavatory faucets. Lavatory faucets shall have a maximum flow rate of not more than 0.5 gallons per minute at 60 psi. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets)</p> <p>Manufacturer specifications for the faucets</p>
<p>5.303.3.4.2 Kitchen faucets. Kitchen faucets shall have a maximum flow rate of not more than 1.8 gallons per minute at 60 psi. Kitchen faucets may temporarily increase the flow above the maximum rate, but not to exceed 2.2 gallons per minute at 60 psi, and must default to a maximum flow rate of 1.8 gallons per minute at 60 psi. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets)</p> <p>Manufacturer specifications for the faucets</p>
<p>5.303.3.4.3 Wash fountains. Wash fountains shall have a maximum flow rate of not more than 1.8 gallons per minute/20 [rim space (inches) at 60 psi]. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets)</p> <p>Manufacturer specifications for the faucets</p>
<p>5.303.3.4.4 Metering faucets. Metering faucets shall not deliver more than 0.20 gallons per cycle. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets)</p> <p>Manufacturer specifications for the faucets</p>
<p>5.303.3.4.5 Metering faucets for wash fountains. Metering faucets for wash fountains shall have a maximum flow rate of not more than 0.20 gallons per cycle/20 [rim space (inches) at 60 psi]. Note: Where complying faucets are unavailable, aerators or other means may be used to achieve reduction. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings (faucets) that demonstrate compliance with the water conservation levels defined in Section 5.303.3.4. 2. Provide specifications for the faucets from the manufacturer that indicates compliance with the rate of flow if information is not provided on plans. This applies to the use of aerators or other devices to achieve the flow rate reduction. 	<p>Schedule of plumbing fittings (faucets)</p> <p>Manufacturer specifications for the faucets</p>
<p>5.303.4 Commercial kitchen equipment.</p> <p>5.303.4.1 Food waste disposers. Disposers shall either modulate the use of water to no more than 1 gpm when the disposer is not in use (not actively grinding food waste/ no-load) or shall automatically shut off after no more than 10 minutes of inactivity. Disposers shall use no more than 8 gpm of water. Note: This code section does not affect local jurisdiction authority to prohibit or require disposer installation. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide schedule of plumbing fittings, including the food waste disposers, that demonstrate the water conservation levels defined in Section 5.303.4. 2. Provide specifications for food waste disposer from the manufacturer that indicates compliance with the flow rate if information is not provided on plans. 	<p>Schedule of plumbing fittings</p> <p>Specifications for food waste disposer</p>
<p>A5.303.4 Water conserving plumbing fixtures and fittings.</p> <p>A5.303.4.1 Nonwater supplied urinals. Nonwater supplied urinals are installed in accordance with the California Plumbing Code. Where approved, hybrid urinals, as defined in Chapter 2, shall be considered waterless urinals. [2016 CALGreen]</p>	<p>Provide schedule of plumbing fixtures, including nonwater-supplied urinals, that demonstrates no water supply occurs.</p>	<p>Schedule of plumbing fixtures</p>
<p>5.303.5 Areas of addition or alteration. For those occupancies within the authority of the California Building Standards Commission as specified in Section 103, the provisions of Sections 5.303.3 and 5.303.4 shall apply to new fixtures in additions or areas of alteration to the building. [2016 CALGreen]</p>	<p>See Supporting Documentation for Sections 5.303.3 and 5.303.4.</p>	<p>Schedule of plumbing fixtures and fittings (faucets)</p> <p>Manufacturer specifications for the faucets</p> <p>Specifications for food waste disposers</p>
<p>A5.303.5 Dual plumbing. New buildings and facilities shall be dual plumbed for potable and recycled water systems for toilet flushing when recycled water is available as determined by the enforcement authority. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide plumbing plans and schedule of plumbing fixtures that show that new buildings and facilities shall have dual plumbing for potable and recycled water systems for toilet flushing. 2. Provide site plans and building plans that demonstrate how dual plumbing will occur for the new building or facility. 	<p>Plumbing plans and schedule of plumbing fixtures</p> <p>Site plans and building plans</p>
<p>5.303.6 Standards for plumbing fixtures and fittings. Plumbing fixtures and fittings shall be installed in accordance with the California Plumbing Code, and shall meet the applicable standards referenced in Table 1701.1 of the California Plumbing Code and in Chapter 6 of this code. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide plumbing plans and/or plumbing specifications with note that compliance with the California Plumbing Code will occur. 	<p>Plumbing plans and/or plumbing specifications</p>

APPENDIX C

2016 CALGREEN, WATER EFFICIENCY & CONSERVATION *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.304.1 Scope. The provisions of Section 5.304, Outdoor Water Use reference the mandatory Model Water Efficiency Landscape Ordinance (MWELO) contained within Chapter 2.7, Division 2, Title 23, California Code of Regulations. [2016 CALGreen]	See Supporting Documentation listed for Sections 5.304.3 through 5.304.6 below.	Utility plans Landscape plans, irrigation plans, legend, and details Evidence of approved building or landscape permit List of the performance requirements of MWELO or the prescriptive compliance measures Calculations that demonstrate reduction on water budget
5.304.2 Outdoor water use in landscape areas equal to or greater than 500 square feet. When water is used for outdoor irrigation for new construction projects with an aggregate landscape area equal to or greater than 500 square feet requiring a building or landscape permit, plan check or design review, one of the following shall apply: 1. A local water efficient landscape ordinance that is, based on evidence in the record, at least as effective in conserving water as the updated model ordinance adopted by the Department of Water Resources (DWR) per Government Code Section 65595 (c). The California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, California Code of Regulations. [2016 CALGreen]	See Supporting Documentation listed for Sections 5.304.3 through 5.304.6 below.	Utility plans Landscape plans, irrigation plans, legend, and details Evidence of approved building or landscape permit List of the performance requirements of MWELO or the prescriptive compliance measures Calculations that demonstrate reduction on water budget
A5.304.2 Outdoor potable water use. For new water service not subject to the provisions of Water Code Section 535, separate meters or submeters shall be installed for indoor and outdoor potable water use for landscaped areas of at least 500 square feet but not more than 1,000 square feet (the level at which Section 5.304.2 applies). [2010 CALGreen]	1. Provide utility plan and landscape plan sheet(s) that show separate submeters for domestic services, fire services, and landscape irrigation. 2. Provide landscape plan irrigation legend and details that show submeters or metering devices for irrigation plan.	Utility plan and landscape plan Landscape plan, irrigation plan, legend, and details
5.304.3 Outdoor water use in rehabilitated landscape projects equal to or greater than 2,500 square feet. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review shall comply with Section 5.304.2, Items 1 or 2. [2016 CALGreen]	1. Provide landscape plans, irrigation plans, legend, and details that comply with the local water efficient landscape ordinance or the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO), which ever is more stringent. 2. Provide evidence of approved building or landscape permit, plan check, or design review consistent with Section 5.304.2.	Landscape plan, irrigation plan, legend, and detail Evidence of approved building or landscape permit
5.304.4 Outdoor water use in landscape areas of 2,500 square feet or less. Any project with an aggregate landscape area of 2,500 square feet or less may comply with the performance requirements of MWELO or conform to the prescriptive compliance measures contained in MWELO's Appendix D. [2016 CALGreen]	1. Provide landscape plans, irrigation plans, legend, and details that comply with the performance requirements of MWELO or conform to the prescriptive compliance measures contained in MWELO's Appendix D. 2. Provide list of the performance requirements of MWELO or the prescriptive compliance measures contained in MWELO's Appendix D that are incorporated into the Project.	Landscape plan, irrigation plan, legend, and detail List of the performance requirements of MWELO or the prescriptive compliance measures
5.304.5 Graywater or rainwater use in landscape areas. For projects using treated or untreated graywater or rainwater captured on site, any lot or parcel within the project that has less than 2,500 square feet of landscape and meets the lot or parcel's landscape water requirement (Estimated Total Water Use) entirely with treated or untreated graywater or through stored rainwater captured on site is subject only to Appendix D Section (5). Notes: 1. DWR's Model Water Efficient Landscape Ordinance, definitions and supporting documents are available at the following link: http://water.ca.gov/wateruseefficiency/landscapeordinance/ 2. A water budget calculator is available at the following link: http://water.ca.gov/wateruseefficiency/landscapeordinance/ 3. The MWELO prescriptive compliance measure Appendix D may be found at the following link: http://water.ca.gov/wateruseefficiency/landscapeordinance/ . In addition, a copy of MWELO Appendix D may be found in Chapter 8 of this code. [2016 CALGreen]	1. Provide landscape plan sheet(s), including irrigation, landscape and planting plans, and details, that define the methods for the capture of graywater or rainwater for reuse in irrigation on the Project site. 2. Provide water budget calculator that shows the graywater or rainwater capture onsite meets the Project site's landscape water requirement (Estimated Total Water Use).	Landscape plan, irrigation plan, planting plan, and details Water budget calculator
A5.304.5 Potable water elimination. Provide a water efficient landscape irrigation design that eliminates the use of potable water beyond the initial requirements for plant installation and establishment. Methods used to accomplish the requirements of this section shall include, but not be limited to, the items listed in Section A5.304.5. [2013 CALGreen] [Excluded from 2016 CALGreen]	1. Provide landscape plans which demonstrate that, after the installation and establishment of plants, the use of potable water through irrigation can be removed from the Project site. 2. Define methods used to achieve the elimination of potable water irrigation. Include milestones that can be used to determine success.	Landscape plan Methods used to achieve the elimination of potable water irrigation
5.304.6 Outdoor potable water use in landscape areas [DSA-SS]. For public schools and community colleges, landscape projects as described in Sections 5.304.6.1 and 5.304.6.2 shall comply with the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, California Code of Regulations, except that the evapotranspiration adjustment factor (ETAF) shall be MRDC 6.6.4.J. Landscaping, Design Criteria, Irrigation 0.65 with an additional water allowance for special landscape areas (SLA) of 0.35. Exception: Any project with an aggregate landscape area of 2,500 square feet or less may comply with the prescriptive measures contained in Appendix D of the MWELO. [2016 CALGreen]	Not applicable to Metro projects.	None
5.304.6.1 Newly constructed landscapes. [DSA-SS] New construction projects with an aggregate landscape area equal to or greater than 500 square feet. [2016 CALGreen]	Not applicable to Metro projects.	None
5.304.6.2 Rehabilitated landscapes. [DSA-SS] Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 1,200 square feet. [2016 CALGreen]	Not applicable to Metro projects.	None
A5.304.6 Restoration of areas disturbed by construction. Restore all areas disturbed during construction by planting with local native and/or noninvasive vegetation. [2013 CALGreen]	1. Provide landscape plan sheet(s), including irrigation, landscape and planting plans, and legends, that demonstrate how areas previously disturbed during construction are restored by planting with local native and/or noninvasive vegetation. 2. Define criteria to measure success of the restoration and periodically report on the progress until the vegetation is established.	Landscape, irrigation, planting plan, and legend Criteria to measure success of the restoration and periodically report progress
A5.304.7 Previously developed sites. On previously developed or graded sites, restore or protect at least 50 percent of the site area with adaptive and/or noninvasive vegetation. Projects complying with Section A5.106.3, Item 3 may apply vegetated roof surface to this calculation if the roof plants meet the definition of adaptive and noninvasive. Exception: Area of the building footprint is excluded from the calculation.. [2016 CALGreen]	1. Provide landscape plan sheet(s), including irrigation, landscape, and planting plans, and legends, that demonstrate how 50% of areas previously developed or graded can be restored with native and/or noninvasive vegetation. 2. Define criteria to measure success of the restoration and periodically report on the progress until the vegetation is established.	Landscape, irrigation, landscape, and planting plan and legend

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CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
A5.304.8 Graywater irrigation system. Install graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins and laundry water. See California Plumbing Code. [2013 CALGreen]	1. Provide landscape plan sheet(s) including irrigation, landscape, and planting plans, that demonstrate the use of graywater collected from bathroom wash basins and showers for onsite subsurface irrigation. 2. Provide site plan and plumbing plan sheet(s) that demonstrate how this will be accomplished consistent with the California Plumbing Code.	Landscape, irrigation, landscape, and planting plan Site plan and plumbing plan
5.305.1 Graywater Ready. Waste piping shall be arranged to permit the discharge from the clothes washer, bathtub, showers, and bathroom/restroom wash basins to be used for a future graywater irrigation system. The flow from the fixtures shall be piped separately, and shall, at a minimum, be adequate to supply the irrigation demand. The point of connection between the graywater piping and other waste piping shall be accessible (as defined in LAMC Section 99.02.202) and provided with signage that is satisfactory to the Department. [2016 CALGreen/LAMC Language] *NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.	Provide plumbing plan, landscape plan, and irrigation plan sheet(s) that demonstrate nonpotable water systems for indoor and outdoor use shall comply with the California Plumbing Code.	Plumbing, landscape, and irrigation plan
A5.305.1 Nonpotable water systems. Nonpotable water systems for indoor and outdoor use shall comply with the current edition of the California Plumbing Code. [2013 CALGreen]	Provide plumbing plan, landscape plan, and irrigation plan sheet(s) that demonstrate nonpotable water systems for indoor and outdoor use shall comply with the California Plumbing Code.	Plumbing, landscape, and irrigation plan
5.305.2 Recycled Water Supply to Fixtures. When City-recycled water is available within 200 feet of the property line, 100% of water for water closets, urinals, floor drains, and process cooling and heating in that building shall come from City-recycled water. Recycled water systems shall be designed and installed in accordance with the Los Angeles Plumbing Code. A5.305.2 Irrigation systems. Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo) shall use recycled water. [2016 CALGreen] *NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.	Provide landscape plan, irrigation plan, and planting plan sheet(s) that demonstrate recycled water shall be used in compliance with the local jurisdictions water efficient landscape ordinance or the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo).	Landscape, irrigation, and planting plan
A5.305.2 Irrigation systems. Irrigation systems regulated by a local water efficient landscape ordinance or by the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo) shall use recycled water. [2016 CALGreen]	Provide landscape plan, irrigation plan, and planting plan sheet(s) that demonstrate recycled water shall be used in compliance with the local jurisdictions water efficient landscape ordinance or the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELo).	Landscape, irrigation, and planting plan
5.305.3 Cooling Towers. Cooling towers shall comply with one of the following: 1. Cooling towers shall have a minimum of 6 cycles of concentration (blowdown); or 2. A minimum of 50% of makeup water supply shall come from non-potable water sources, including treated backwash. [2016 CALGreen] *NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.	TBD	TBD
5.305.4 Groundwater Discharge. Where groundwater is being extracted and discharged, a system for onsite reuse of the groundwater, shall be developed and constructed. Alternatively, the groundwater may be discharged to the sewer. [2016 CALGreen] *NOTE* This language appears in the LAMC/LAGBC and is adopted as if it is CALGreen, but the language has not yet been officially adopted into the CALGreen code.	TBD	TBD

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.404.1 Wood framing. Employ advanced wood framing techniques or OVE, as recommended by the U.S. Department of Building Technology, State and Community Programs and as permitted by the enforcing agency. [2010 CALGreen]</p>	<p>Provide architectural plan sheet(s) demonstrating the use of wood framing.</p>	<p>Architectural plan</p>
<p>A5.404.1.1 Wood framing. The OVE selected shall not conflict with structural framing methods or fire-rated assemblies required by the California Building Code. [2016 CALGreen]</p>	<p>Provide architectural plan sheet(s) demonstrating the use of wood framing.</p>	<p>Architectural plan</p>
<p>A5.404.1.2 Framing specifications. Advanced framing techniques include the following:</p> <ol style="list-style-type: none"> 1. Building design using 2-foot modules; 2. Spacing wall studs up to 24 inches on center; 3. Spacing floor and roof framing members up to 24 inches on center; 4. Using 2-stud corner framing and drywall clips or scrap lumber for drywall backing; 5. Eliminating solid headers in non-load-bearing walls; 6. Using in-line framing, aligning floor, wall and roof framing members vertically for direct transfer of loads; and 7. Using single lumber headers and top plates where appropriate. <p>Note: Additional information can be obtained from the U.S. DOE Energy Efficiency and Renewable Energy (EERE) website. [2016 CALGreen]</p>	<p>Provide architectural plan sheet(s) demonstrating the use of wood framing.</p>	<p>Architectural plan</p>
<p>A5.405.1 Regional materials. Compared to other products in a given product category, select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site.</p> <ol style="list-style-type: none"> 1. For those materials locally manufactured, select materials manufactured using low embodied energy or those that will result in net energy savings over their useful life. 2. Regional materials shall make up at least 10 percent, based on cost, of total materials value. 3. If regional materials make up only part of a product, their values are calculated as percentages based on weight. 4. Provide documentation of the origin, net projected energy savings and value of regional materials.[2016 CALGreen] 	<ol style="list-style-type: none"> 1. Provide evidence that selected building materials or products for permanent installation on the Project has been harvested or manufactured within California or within 500 miles of the Project site. 	<p>Evidence that selected building materials or products have been harvested or manufactured within California and/or 500 miles</p>
<p>A5.405.2 Bio-based materials. Select bio-based building materials and products made from solid wood, engineered wood, bamboo, wool, cotton, cork, straw, natural fibers, products made from crops (soy-based, corn-based) and other bio-based materials with at least 50-percent bio-based content. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide architectural plans, exterior elevations, room finish schedules, and other sheets that indicate the use of bio-based building materials including certified wood products and, for 2.5 percent of wood products used, rapidly renewable materials. 	<p>Architectural plan, exterior elevations, and/or room finish schedules</p>
<p>A5.405.2.1 Certified wood products. Certified wood is an important component of green building strategies and the California Building Standards Commission will continue to develop a standard through the next code cycle. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide architectural plans, exterior elevations, room finish schedules, and other sheets that indicate the use of bio-based building materials including certified wood products and, for 2.5 percent of wood products used, rapidly renewable materials. 	<p>Architectural plan, exterior elevations, and/or room finish schedules</p>
<p>A5.405.2.2 Rapidly renewable materials. Use materials made from plants harvested within a ten-year cycle for at least 2.5 percent of total materials value, based on estimated cost. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide architectural plans, exterior elevations, room finish schedules, and other sheets that indicate the use of bio-based building materials including certified wood products and, for 2.5 percent of wood products used, rapidly renewable materials. 	<p>Architectural plan, exterior elevations, and/or room finish schedules</p>
<p>A5.405.3 Reused materials. Use salvaged, refurbished, refinished or reused materials for a minimum of 5 percent of the total value, based on estimated cost of materials on the project. Provide documentation as to the respective values.</p> <p>Note: Sources of some reused materials can be found at CalRecycle. See also Appendix A5, Division A5.1, Section A5.105.1 for on-site materials reuse. [2016 CALGreen]</p>	<p>Provide architectural plans, floor plans, or other plan sheet(s) that demonstrate the incorporation of reused materials for at least 5 percent of the total value into the Project design and construction.</p>	<p>Architectural plan, floor plan, or other plan sheets</p>
<p>A5.405.4 Recycled content. Use materials, equivalent in performance to virgin materials with a total (combined) recycled content value (RCV) of:</p> <p>Tier 1. The RCV shall not be less than 10 percent of the total material cost of the project, or use two products which meet the minimum recycled content levels in Table A5.405.4 for at least 75%, by cost, of all products in that category in the project.</p> <p>Required Total RCV (dollars) = Total Material Cost (dollars) × 10 percent (Equation A5. 4-1)</p> <p>Tier 2. The RCV shall not be less than 15 percent of the total material cost of the project, or use three products which meet the minimum recycled content levels in Table A5.405.4 for at least 75%, by cost, of all products in that category in the project.</p> <p>Required Total RCV (dollars) = Total Material Cost (dollars) × 15 percent (Equation A5. 4-2)</p> <p>For the purposes of this section, materials used as components of the structural frame shall not be used to calculate recycled content. The structural frame includes the load bearing structural elements such as wall studs, plates, sills, columns, beams, girders, joists, rafters and trusses.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Sample forms which allow user input and automatic calculation are located at www.hcd.ca.gov/CALGreen.html and may be used to simplify documenting compliance with this section and for calculating recycled content value of materials or assembly products. 2. Sources and recycled content of some recycled materials can be obtained from CalRecycle if not provided by the manufacturer. [2016 CALGreen] 	<p>Provide site plans, architectural plans, interior and exterior sections, room finish schedules, or other plan sheet(s) that identify the use of recycled content consistent with the criteria for the total recycled content value (RCV) defined in Section A5.405.4.</p>	<p>Site plan, architectural plan, interior and exterior sections, room finish schedules, or other plan sheets</p>

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.405.4.1 Total material cost. Total material cost is the total estimated or actual cost of materials and assembly products used in the project. The required total recycled content value for the project (in dollars) shall be determined by Equation A5.4-1 or A5.4-2. Total material cost shall be calculated by using one of the methods specified below:</p> <ol style="list-style-type: none"> 1. Simplified method. To obtain the total cost of the project multiply the square footage of the structure by the square foot valuation established by the enforcing agency. The total material cost is 45 percent of the total cost of the project. Use Equations A5.4-3A or A5.4-3B to determine total material costs using the simplified method. Total material costs = Project square footage × square foot valuation × 45 percent (Equation A5.4-3A) Total estimated or actual cost of project × 45 percent (Equation A5.4-3B) 2. Detailed method. To obtain the total cost of the project, add the estimated and/or actual costs of materials used for the project including the structure (steel, concrete, wood or masonry); the enclosure (roof, windows, doors and exterior walls); the interior walls, ceilings and finishes (gypsum board, ceiling tiles, etc.). The total estimated and/or actual costs shall not include fees, labor and installation costs, overhead, appliances, equipment, furniture or furnishings. 5 Alternate method for concrete. [2016 CALGreen] 	<p>Provide site plans, architectural plans, interior and exterior sections, room finish schedules, or other plan sheet(s) that identify the use of recycled content consistent with the criteria for the total recycled content value (RCV) defined in Section A5.405.4.</p>	<p>Site plan, architectural plan, interior and exterior sections, room finish schedules, or other plan sheets</p>
<p>A5.405.4.2 Determination of total recycled content value (RCV). Total RCV may be determined either by dollars or percentage as noted below. 1. Total recycled content value for the project (in dollars). This is the sum of the recycled content value of the materials and/or assemblies considered and shall be determined by Equation A5.4-4. The result of this calculation may be directly compared to Equations A5.4-1 and A5.4-2 to determine compliance with Tier 1 or Tier 2 prerequisites. Total Recycled Content Value (dollars) = (RCVM + RCVA) (Equation A5.4-4) 2. Total recycled content value for the project (by percentage). This is expressed as a percentage of the total material cost and shall be determined by Equations A5.4-4 and A5.4-5. The result of this calculation may be directly compared for compliance with Tier 1 (10 percent) or Tier 2 (15 percent) prerequisites. Total Recycled Content Value (percent) = [Total Recycled Content Value (dollars) ÷ Total Material Cost (dollars)] × 100 (Equation A5.4-5) [2016 CALGreen]</p>	<p>Provide site plans, architectural plans, interior and exterior sections, room finish schedules, or other plan sheet(s) that identify the use of recycled content consistent with the criteria for the total recycled content value (RCV) defined in Section A5.405.4.</p>	<p>Site plan, architectural plan, interior and exterior sections, room finish schedules, or other plan sheets</p>
<p>A5.405.4.3 Determination of recycled content value of materials (RCVM). The recycled content value of each material (RCVM) is calculated by multiplying the cost of material, as defined by the recycled content. See Equations A5.4-6 and A5.4-7. RCVM (dollars) = Material cost (dollars) × RCM (percent) (Equation A5.4-6) RCM (percent) = Postconsumer content percentage + (1/2) Preconsumer content percentage (Equation A5.4-7) Notes: 1. If the postconsumer and preconsumer recycled content is provided in pounds, Equation A5.4-7 may be used, but the final result (in pounds) must be multiplied by 100 to show RCM as a percentage. 2. If the manufacturer does not separately identify the pre-consumer and post-consumer recycled content of a material but reports it as a total single percentage, the total amount shall be considered preconsumer recycled material. [2016 CALGreen]</p>	<p>Provide site plans, architectural plans, interior and exterior sections, room finish schedules, or other plan sheet(s) that identify the use of recycled content consistent with the criteria for the total recycled content value (RCV) defined in Section A5.405.4.</p>	<p>Site plan, architectural plan, interior and exterior sections, room finish schedules, or other plan sheets</p>
<p>A5.405.4.4 Determination of recycled content value of assemblies – (RCVA). Recycled content value of assemblies is calculated by multiplying the total cost of assembly by the total recycled content of the assembly (RCA), and shall be determined by Equation A5.4-8. RCVA (dollars) = Assembly cost (dollars) × Total RCA (percent) (Equation A5.4-8) If not provided by the manufacturer, Total RCA (percent) is the sum (Σ) of the Proportional Recycled Content (PRCM) of each material in the assembly. RCA shall be determined by Equation A4.4-9. RCA = Σ PRCM (Equation A5.4-9) PRCM of each material may be calculated by one of two methods using the following formulas: Method 1: Recycled content (Postconsumer and Preconsumer) of each material provided in percentages PRCM (percent) = Weight of material (percent) × RCM (percent) (Equation A5.4-10) Weight of material (percent) = [Weight of material (lbs) ÷ Weight of assembly (lbs)] × 100 (Equation A5.4-11) RCM (percent) = Postconsumer content percentage + (1/2) Preconsumer content percentage (See Equation A5.4-7) Method 2: Recycled content (Postconsumer and Preconsumer) provided in pounds PRCM (percent) = [RCM (lbs) ÷ Weight of material (lbs)] × 100 (Equation A5.4-12) RCM (lbs) = Postconsumer content (lbs) + (1/2) Preconsumer content (lbs) (Equation A5.4-13) Note: If the manufacturer does not separately identify the pre-consumer and post-consumer recycled content of a material but reports it as a total single percentage, the total amount shall be considered preconsumer recycled material. [2016 CALGreen]</p>	<p>Provide site plans, architectural plans, interior and exterior sections, room finish schedules, or other plan sheet(s) that identify the use of recycled content consistent with the criteria for the total recycled content value (RCV) defined in Section A5.405.4.</p>	<p>Site plan, architectural plan, interior and exterior sections, room finish schedules, or other plan sheets</p>
<p>A5.405.4.5 Alternate method for concrete. When Supplementary Cementitious Materials (SCMs), such as fly ash or ground blast furnace slag cement, are used in concrete, an alternate method of calculating and reporting recycled content in concrete products shall be permitted. When determining the recycled content value, the percent recycled content shall be multiplied by the cost of the cementitious materials only, not the total cost of the concrete. [2016 CALGreen]</p>	<p>Provide site plans, architectural plans, interior and exterior sections, room finish schedules, or other plan sheet(s) that identify the use of recycled content consistent with the criteria for the total recycled content value (RCV) defined in Section A5.405.4.</p>	<p>Site plan, architectural plan, interior and exterior sections, room finish schedules, or other plan sheets</p>
<p>A5.405.5 Cement and concrete. Use cement and concrete made with recycled products and complying with the following sections: [2010 CALGreen]</p>	<p>Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.</p>	<p>Evidence that cement and concrete made with recycled products in compliance with standards</p>
<p>A5.405.5.1 Cement. Cement shall comply with one of the following standards: 1. Portland cement shall meet ASTM C 150. 2. Blended hydraulic cement shall meet ASTM C 595. 3. Other Hydraulic Cements shall meet ASTM C 1157. [2010 CALGreen]</p>	<p>Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.</p>	<p>Evidence that cement and concrete made with recycled products in compliance with standards</p>
<p>A5.405.5.2 Concrete. Unless otherwise directed by the Engineer of Record, use concrete manufactured with cementitious materials in accordance with Sections A5.405.5.2.1 and A5.405.5.2.1.1, as approved by the enforcing agency. [2010 CALGreen]</p>	<p>Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.</p>	<p>Evidence that cement and concrete made with recycled products in compliance with standards</p>

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.405.5.2.1 Supplementary cementitious materials (SCMs). Use concrete made with one or more supplementary cementitious materials (SCM) conforming to the following standards:</p> <ol style="list-style-type: none"> 1. Fly ash conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete. 2. Slag cement (GGBFS) conforming to ASTM C989, Specification for Use in Concrete and Mortars. 3. Silica fume conforming to ASTM C1240, Specification for Silica Fume Used in Cementitious Mixtures. 4. Natural pozzolan conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete. 5. Blended supplementary cementitious materials conforming to ASTM C1697, Standard Specification for Blended Supplementary Cementitious Materials. The amount of each SCM in the blend will be used separately in calculating Equation A5.4-1. If Class C fly ash is used in the blend, it will be considered to be "SL" for the purposes of satisfying the equation. 6. Ultra-fine fly ash (UFFA) conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete and the chemical and physical requirements found in table A5.405.5.2.1.A 7. Metakaolin conforming to ASTM C618, Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete, and the chemical and physical requirements found in table A5.405.5.2.1.B 8. Other materials with comparable or superior environmental benefits, as approved by the Engineer of Record and enforcing authority. [2016 CALGreen] 	<p>Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.</p>	<p>Evidence that cement and concrete made with recycled products in compliance with standards</p>
<p>A5.405.5.2.1.1 Mix design equation. Use any combination of one or more SCMs, satisfying Equation A4.5-14. Exception: Minimums in mix designs approved by the Engineer of Record may be lower where high early strength is needed. $F/25 + SL/50 + UF/12 \geq 1$ (Equation A5.4-14) where: F = Fly ash, natural pozzolan or other approved SCM as a percent of total cementitious material for concrete on the project. SL = GGBFS, as a percent of total cementitious material for concrete on the project. UF = Silica fume, metakaolin or UFFA, as a percent of total cementitious material for concrete on the project. [2016 CALGreen]</p>	<p>Provide evidence that cement and concrete made with recycled products comply with the standards defined in Sections A5.405.5.1, A5.405.5.2, A5.405.5.2.1, and A5.405.5.2.1.1.</p>	<p>Evidence that cement and concrete made with recycled products in compliance with standards</p>
<p>A5.405.5.3 Additional means of compliance. Any of the following measures shall be permitted to be employed for the production of cement or concrete, depending on their availability and suitability, in conjunction with Section A5.405.5.2. [2010 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	<p>Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record</p>
<p>A5.405.5.3.1 Cement. The following measures may be used in the manufacture of cement. [2010 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	<p>Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record</p>
<p>A5.405.5.3.1.1 Alternative fuels. Where permitted by state or local air quality standards. [2010 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	<p>Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record</p>
<p>A5.405.5.3.1.2 Alternative power. Use alternate electric power generated at the cement plant and/or green power purchased from the utility meeting the requirements of Section A5.211. [2010 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	<p>Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record</p>
<p>A5.405.5.3.1.3 Alternative ingredients. Use inorganic processing additions and limestone meeting ASTM C 150. [2010 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	<p>Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record</p>
<p>A5.405.5.3.2 Concrete. The following measures may be used in the manufacture of concrete, [2010 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	<p>Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record</p>
<p>A5.405.5.3.2.1 Alternative energy. Renewable or alternative energy meeting the requirements of Section A5.211. [2010 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	<p>Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record</p>

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
A5.405.5.3.2.2 Recycled aggregates. Concrete made with one or more of the materials listed in Section A5.405.5.3.2.2. [2010 CALGreen]	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.2.3 Mixing water. Water recycled by the local water purveyor or water reclaimed from manufacturing processes and conforming to ASTM C 1602. [2010 CALGreen]	<ol style="list-style-type: none"> 1. Provide evidence of additional means of compliance employed for the production of cement or concrete in conjunction with cement and concrete made with recycled products as defined in Section A5.405.5. 2. Provide documentation, with Metro approval, that defines the measures used in the manufacture of cement and concrete consistent with Sections A5.405.5.3.1 and A5.405.5.3.2, respectively. 3. Provide architectural plans and/or structural plans approved by the Engineer of Record that demonstrate use of high strength concrete designed to reduce the size of concrete elements. 	Evidence of additional means of compliance Documentation with Metro approval Architectural plan and/or structural plan approved by the Engineer of Record
A5.405.5.3.2.4 High strength concrete. Concrete elements designed to reduce their total size compared to standard 3,000 psi concrete, as approved by the Engineer of Record. [2013 CALGreen]	Provide evidence of approval by the Engineer of Record on the use of high strength concrete.	Evidence of approval by the Engineer of Record
A5.406.1 Choice of materials. Compared to other products in a given product category, choose materials proven to be characterized by one or more of the following. [2013 CALGreen]	Provide documentation, with Metro approval, that defines the materials that will be reused or recycled at the end of their service life.	Documentation, with Metro approval, that defines reused or recycled materials
A5.406.1.1 Service life. Select materials for longevity and minimal deterioration under conditions of use. [2013 CALGreen]	Provide documentation, with Metro approval, that defines the materials that will be reused or recycled at the end of their service life.	Documentation, with Metro approval, that defines reused or recycled materials
A5.406.1.2 Reduced maintenance. Select materials that require little, if any, finishing. For those with surface protection, choose materials that do not require frequent applications of toxic or malodorous finishes. [2013 CALGreen]	Provide documentation, with Metro approval, that defines the materials that will be reused or recycled at the end of their service life.	Documentation, with Metro approval, that defines reused or recycled materials
A5.406.1.3 Recyclability. Select materials that can be re-used or recycled at the end of their service life. [2013 CALGreen]	Provide documentation, with Metro approval, that defines the materials that will be reused or recycled at the end of their service life.	Documentation, with Metro approval, that defines reused or recycled materials
5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code, Section 1403.2 (Weather Protection) and California Energy Code, Section 150 (Mandatory Features and Devices), manufacturer's installation instructions or local ordinance, whichever is more stringent. [2013 CALGreen]	Provide building plans and details that indicate the provision of a weather-resistant exterior wall and foundation envelope.	Building plans and details
5.407.2 Moisture Control. Employ moisture control measures by the following methods. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent irrigation spray on structures. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following: <ol style="list-style-type: none"> 1. An installed awning at least 4 feet in depth. 2. The door is protected by a roof overhang at least 4 feet in depth. 3. The door is recessed at least 4 feet. 4. Other methods which provide equivalent protection. [2013 CALGreen] 	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control. 2. Provide building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing. 	Landscape irrigation plan and details Building plan, elevations, and details
5.408.1 Construction waste management. Recycle and/or salvage for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local construction and demolition waste management ordinance, whichever is more stringent. [2016 CALGreen]	<ol style="list-style-type: none"> 1. Provide evidence of approval of the Project's Construction Waste Management Plan consistent with the local ordinance and/or Municipal Code. The evidence of approval shall consist of correspondence indicating approval and/or signature page only of the Construction Waste Management Plan (signed by authorized City or County official or staff member). 2. Consistent with the local ordinance or Municipal Code, utilize a certified waste management company that provides the percentage of construction waste diverted from landfill(s) that will serve the Project. 3. Provide a Monthly Construction Waste Reduction, Disposal, and Recycling report tabulated monthly for the duration of Project construction. The report shall provide the monthly actual recycled tons and the percent recycled. 	Evidence of approval of Construction Waste Management Plan consistent with local requirements Evidence of waste management company's local certification Monthly Construction Waste Reduction, Disposal, and Recycling report

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2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a construction and demolition waste management ordinance that is more stringent, submit a construction waste management plan that complies with Items 1 through 4 of this section. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of approval of the Project's Construction Waste Management Plan consistent with the local ordinance and/or Municipal Code. The evidence of approval shall consist of correspondence indicating approval and/or signature page only of the Construction Waste Management Plan (signed by authorized City or County official or staff member). 2. Consistent with the local ordinance or Municipal Code, utilize a certified waste management company that provides the percentage of construction waste diverted from landfill(s) that will serve the Project. 3. Provide a Monthly Construction Waste Reduction, Disposal, and Recycling report tabulated monthly for the duration of Project construction. The report shall provide the monthly actual recycled tons and the percent recycled. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements Evidence of waste management company's local certification Monthly Construction Waste Reduction, Disposal, and Recycling report</p>
<p>5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction and demolition waste material diverted from the landfill complies with this section. Note: The owner or contractor shall make the determination if the construction and demolition waste material will be diverted by a waste management company. Exceptions to Sections 5.408.1.1 and 5.408.1.2: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. 5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence of approval of the Project's Construction Waste Management Plan consistent with the local ordinance and/or Municipal Code. The evidence of approval shall consist of correspondence indicating approval and/or signature page only of the Construction Waste Management Plan (signed by authorized City or County official or staff member). 2. Consistent with the local ordinance or Municipal Code, utilize a certified waste management company that provides the percentage of construction waste diverted from landfill(s) that will serve the Project. 3. Provide a Monthly Construction Waste Reduction, Disposal, and Recycling report tabulated monthly for the duration of Project construction. The report shall provide the monthly actual recycled tons and the percent recycled. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements Evidence of waste management company's local certification Monthly Construction Waste Reduction, Disposal, and Recycling report</p>
<p>5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed two pounds per square foot of building area may be deemed to meet the 65 percent minimum requirement as approved by the enforcing agency. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that the Construction Waste Management Plan meets the requirements of Section 5.408.1.1 et seq. 2. Ensure that the Construction Waste Management Plan is accessible to Metro ECSD staff. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements Evidence of waste management company's local certification Monthly Construction Waste Reduction, Disposal, and Recycling report submittal to Metro ECSD staff</p>
<p>5.408.1.4 Documentation. Provide documentation of the waste management plan that meets the requirements listed in Sections 5.408.1.1 through 5.408.1.3, and the plan is accessible to the enforcement authority. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that the Construction Waste Management Plan meets the requirements of Section 5.408.1.1 et seq. 2. Ensure that the Construction Waste Management Plan is accessible to Metro ECSD staff. 	<p>Evidence of approval of Construction Waste Management Plan consistent with local requirements Evidence of waste management company's local certification Monthly Construction Waste Reduction, Disposal, and Recycling report submittal to Metro ECSD staff</p>
<p>5.408.2 Universal waste. [A] Additions and alterations to a building or tenant space that meet the scoping provisions in Section 301.3 for nonresidential additions and alterations, shall require verification that Universal Waste items such as fluorescent lamps and ballast and mercury containing thermostats as well as other California prohibited Universal Waste materials are disposed of properly and are diverted from landfills. A list of prohibited Universal Waste materials shall be included in the construction documents. Note: Refer to the Universal Waste Rule link at: http://www.dtsc.ca.gov/LawsRegsPolicies/Regs/upload/OEAR-A_REGGS_UWR_FinalText.pdf [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that Universal Waste are diverted from landfill and disposed of properly by a certified hazardous waste hauler for Projects that will result in additions and alterations. 	<p>Documentation that Universal Waste is diverted from landfill and disposed of properly</p>
<p>5.408.3 Excavated soil and land clearing debris. 100 percent of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed. Exception: Reuse, either on- or off-site, of vegetation or soil contaminated by disease or pest infestation. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that 100 percent of excavated soil and land clearing debris shall be reused or recycled. 2. For phased development, provide documentation that excavated soil and land clearing debris shall be stockpiled onsite consistent with SCAQMD Rules for fugitive dust. 	<p>Documentation that all excavated soil and debris shall be reused or recycled.</p>
<p>A5.408.3.1 Enhanced construction waste reduction-Tier 1. Divert to recycle or salvage at least 65% of nonhazardous construction and demolition waste generated at the site. Any mixed recyclables that are sent to mixed-waste recycling facilities shall include a qualified third party verified facility average diversion rate. Verification of diversion rates shall meet minimum certification eligibility guidelines, acceptable to the local enforcing agency. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that enhanced reduction of nonhazardous construction or demolition waste, consisting of 65 percent for Tier 1 and 80 percent for Tier 2, will occur. 2. Provide signed cover of the completed Construction Waste Management Plan or approval correspondence and/or documentation of certification of the waste management company. 	<p>Documentation of enhanced reduction of nonhazardous construction or demolition waste Signed cover of Construction Waste Management Plan or approval correspondence and/or documentation of certification</p>
<p>A5.408.3.1.1 Enhanced construction waste reduction-Tier 2. Divert to recycle or salvage at least 80% of nonhazardous construction waste generated at the site. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that enhanced reduction of nonhazardous construction or demolition waste, consisting of 65 percent for Tier 1 and 80 percent for Tier 2, will occur. 2. Provide signed cover of the completed Construction Waste Management Plan or approval correspondence and/or documentation of certification of the waste management company. 	<p>Documentation of enhanced reduction of nonhazardous construction or demolition waste Signed cover of Construction Waste Management Plan or approval correspondence and/or documentation of certification</p>
<p>A5.408.3.1.2 Verification of compliance. A copy of the completed waste management report or documentation of certification of the waste management company utilized shall be provided. Exceptions: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist. 3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that enhanced reduction of nonhazardous construction or demolition waste, consisting of 65 percent for Tier 1 and 80 percent for Tier 2, will occur. 2. Provide signed cover of the completed Construction Waste Management Plan or approval correspondence and/or documentation of certification of the waste management company. 	<p>Documentation of enhanced reduction of nonhazardous construction or demolition waste Signed cover of Construction Waste Management Plan or approval correspondence and/or documentation of certification</p>
<p>A5.409.1 General. Life cycle assessment shall be ISO 14044 compliant. The service life of the building and materials assemblies shall not be less than 60 years. [2013 CALGreen]</p>	<p>This section is noted.</p>	<p>None</p>

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2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.409.2 Whole building life cycle assessment. Conduct a whole building life assessment, including operating energy, showing that the building project achieves at least a 10-percent improvement for at least three of the impacts listed in Section A5.409.2.2, one of which shall be climate change, compared to a reference building of similar size, function, complexity and operating energy performance, and meet the 2013 California Energy Code at a minimum. [2013 CALGreen]</p>	<p>1. Provide a whole building life assessment consistent with the requirements of Section A5.409.2.</p>	<p>Whole building life assessment</p>
<p>A5.409.2.1 Building components. The building envelope, structural elements, including footings and foundations, interior ceilings, walls, and floors; and exterior finishes shall be considered in the assessment.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Plumbing, mechanical and electrical systems and controls; fire and smoke detection and alarm systems and controls; and conveying systems. 2. Interior finishes are not required to be included. <p>Notes:</p> <ol style="list-style-type: none"> 1. Software for calculating whole building life cycle assessments includes those found at the Athena Institute website (Impact Estimator software), the PE International website (GaBi software), and the PRE Consultants website (SimaPro software). 2. Interior finishes, if included, may be assessed using the NIST BEES tool. [2016 CALGreen] 	<p>1. Provide a whole building life assessment consistent with the requirements of Section A5.409.2.</p>	<p>Whole building life assessment</p>
<p>A5.409.3 Materials and system assemblies. If whole building analysis of the project is not elected, select a minimum of 50% of materials or assemblies based on life cycle assessment of at least three for the impacts listed in Section A5.409.2.2, one of which shall be climate change. [2013 CALGreen]</p>	<p>1. Provide documentation of an alternative with a minimum of 50 percent of materials or assemblies based on a life cycle assessment of at least three (3) impacts listed in Section A5.409.2.2 (one of which addresses climate change).</p>	<p>Documentation of an alternative</p>
<p>A5.409.4 Substitution for prescriptive standards. Performance of a life cycle assessment completed in accordance with Section A5.409.2 may be substituted for other prescriptive provisions of Division A5.4, including those made mandatory through local adoption of Tier 1 or Tier 2 in Division A5.6. [2013 CALGreen]</p>	<p>1. Provide documentation of other prescriptive standards in Division A5.4, including those that are mandatory through local adoption of Tier 1 or Tier 2 in Division A5.6.</p>	<p>Documentation of other prescriptive standards</p>
<p>A5.409.5 Verification of compliance. Documentation of compliance shall be provided as follows:</p> <ol style="list-style-type: none"> 1. The assessment is performed in accordance with ISO 14044. 2. The project meets the requirements of other parts of Title 24. 3. A copy of the analysis shall be made available to the enforcement authority. 4. A copy of the analysis and any maintenance or training recommendations shall be included in the operation and maintenance manual. See notes for available tools. [2013 CALGreen] 	<p>1. Provide documentation of compliance through the provision of the following: (1) an assessment in accordance with ISO 14044; (2) evidence that Project meets requirements of other parts of Title 24; (3) copy of approval analysis (signature page or approval correspondence only); (4) a copy of the list of any maintenance or training recommendations that shall be included in the operation and maintenance manual.</p>	<p>Documentation of compliance</p>
<p>5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.</p> <p>Exception: Rural jurisdictions that meet and apply for the exemption in Public Resource Code 42649.82(a)(2)(A) et seq. shall be exempt from the organic waste portion of this section. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or detail plan sheet(s) that indicate recycling areas for depositing, storage, and collection of nonhazardous materials for recycling. 2. If the local ordinance is more restrictive, provide plans that document the required facilities per the requirements. 3. For additions to a Project that occurs with a 12-month period, and results in an increase of 30 percent or more of floor area, provide site plan, floor plan, and/or detailed plan sheet(s) that indicate recycling areas 	<p>Site plan, floor plan, and/or detail plan sheets</p>
<p>5.410.1.1 Additions. [A] All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30 percent or more in floor area, shall provide recycling areas on site.</p> <p>Exception: Additions within a tenant space resulting in less than a 30-percent increase in the tenant space floor area. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide site plan, floor plan, and/or detail plan sheet(s) that indicate recycling areas for depositing, storage, and collection of nonhazardous materials for recycling. 2. If the local ordinance is more restrictive, provide plans that document the required facilities per the requirements. 3. For additions to a Project that occurs with a 12-month period, and results in an increase of 30 percent or more of floor area, provide site plan, floor plan, and/or detailed plan sheet(s) that indicate recycling areas. 	<p>Site plan, floor plan, and/or detail plan sheets</p>
<p>5.410.1.2 Sample ordinance. Space allocation for recycling areas shall comply with Chapter 18, Part 3, Division 30 of the Public Resources Code. Chapter 18 is known as the California Solid Waste Reuse and Recycling Access Act of 1991 (Act).</p> <p>Note: A sample ordinance for use by local agencies may be found in Appendix A of this document at the CalRecycle's website. [2013 CALGreen]</p>	<p>Not applicable to Metro projects.</p>	<p>None</p>
<p>5.410.2 Commissioning. [N] For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. All occupancies other than I-occupancies and L-occupancies shall comply with the California Energy Code as prescribed in California Energy Code Section 120.8. For I-occupancies that are not regulated by OSHPD or I-occupancies and L-occupancies that are not regulated by California Energy Code Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply.</p> <p>Commissioning requirements shall include:</p> <ol style="list-style-type: none"> 1. Owner's or owner representative's project treatments. 2. Basis of design. 3. Commissioning measures shown in the construction documents. 4. Commissioning plan. 5. Functional performance testing. 6. Documentation and training. 7. Commissioning report. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. Unconditioned warehouses of any size. 2. Areas under 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses. 3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1. 4. Open parking garages of any size, or open parking garage areas, of any size, within a structure. <p>Note: For the purposes of this section, unconditioned shall mean a building, area, or room which does not provide heating or air conditioning. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide a copy of the Commissioning Plan (signature page or approval correspondence only). The Commissioning Plan shall include the following consistent with the requirements of Section 5.410.2.3: (1) general project information; (2) commissioning goals; (3) systems to be commissioned (plans of systems and components to be tested); (4) commissioning team information; and (5) commissioning process activities, schedules, and responsibilities. 2. Provide applicable plan sheet(s) for the completion of commissioning. 	<p>Copy of the Commissioning Plan (signature page or approval correspondence only)</p> <p>Plan sheet(s) for the completion of commissioning</p>
<p>5.410.2.1 Owner's Project Requirements (OPR). [N] The expectations and requirements of the building appropriate to its phase shall be documented before the design phase of the project begins. This documentation shall include the following:</p> <ol style="list-style-type: none"> 1. Environmental and sustainability goals. 2. Energy efficiency goals. 3. Indoor environmental quality requirements. 4. Project program, including facility functions and hours of operation, and need for after hours operation. 5. Equipment and systems expectations. 6. Building occupant and operation and maintenance (O&M) personnel expectations. [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Metro shall provide the expectation and requirements of the Project building(s) before the design phase of the Project begins. 2. Provide a Basis of Design document, a written explanation of how the design of building systems meets Metro's Project requirements. This document shall be completed at the design phase of the Project and address the following systems: (1) HVAC systems and controls; (2) indoor lighting systems and controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems. 	<p>Basis of Design document</p>

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2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:</p> <ol style="list-style-type: none"> 1. Heating, ventilation, air conditioning (HVAC) systems and controls. 2. Indoor lighting system and controls. 3. Water heating system. 4. Renewable energy systems. 5. Landscape irrigation systems. 6. Water reuse systems. [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Metro shall provide the expectation and requirements of the Project building(s) before the design phase of the Project begins. 2. Provide a Basis of Design document, a written explanation of how the design of building systems meets Metro's Project requirements. This document shall be completed at the design phase of the Project and address the following systems: (1) HVAC systems and controls; (2) indoor lighting systems and controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems. 	<p>Basis of Design document</p>
<p>5.410.2.3 Commissioning plan. [N] Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning shall include the following:</p> <ol style="list-style-type: none"> 1. General project information. 2. Commissioning goals. 3. Systems to be commissioned. Plans to test systems and components shall include: <ol style="list-style-type: none"> a. An explanation of the original design intent. b. Equipment and systems to be tested, including the extent of tests c. Functions to be tested. d. Conditions under which the test shall be performed. e. Measurable criteria for acceptable performance. 4. Commissioning team information. 5. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included. [2013 CALGreen] 	<p>See Supporting Documentation for Section 5.410.2 Commissioning</p>	<p>Copy of the Commissioning Plan (signature page or approval correspondence only) Plan sheet(s) for the completion of commissioning</p>
<p>5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made. [2013 CALGreen]</p>	<p>See Supporting Documentation for Section 5.410.2 Commissioning.</p>	<p>Copy of the Commissioning Plan (signature page or approval correspondence only) Plan sheet(s) for the completion of commissioning</p>
<p>5.410.2.5 Documentation and training. [N] A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide copy of the approved Systems Manual (signature page or approval correspondence only). The Systems Manual shall define the systems operations training required per the OSHA requirements in the California Code of Regulations, Title 8, Section 5142 and other related regulations. 2. The approved Systems Manual shall also include: (1) site information, facility description, Project history, and current requirements; (2) site contract information; (3) basic operations and maintenance including general operating procedures basic troubleshooting, recommended maintenance requirements, and site events log; (4) major systems; (5) site equipment inventory and maintenance notes; (6) verification required by Metro or CALGreen; and (7) other applicable resources and documentation. 	<p>Approved Systems Manual (signature page or approval correspondence only)</p>
<p>5.410.2.5.1 Systems manual. [N] Documentation of the operational aspects of the building shall be completed within the systems manual and delivered to the building owner or representative. The systems manual shall include the following:</p> <ol style="list-style-type: none"> 1. Site information, including facility description, history and current requirements. 2. Site contract information. 3. Basic operations and maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log. 4. Major systems. 5. Site equipment inventory and maintenance notes. 6. A copy of verifications required by the enforcing agency or this code. 7. Other resources and documentation, if applicable. [2013 CALGreen] 	<p>See Supporting Documentation for Section 5.410.2.5 Documentation and training.</p>	<p>Approved Systems Manual (signature page or approval correspondence only)</p>
<p>5.410.2.5.2 Systems operations training. [N] A program for training of the appropriate maintenance staff for each equipment type and/or system shall be developed and documented in the commissioning report and shall include the following:</p> <ol style="list-style-type: none"> 1. System/equipment overview (what it is, what it does and with what other systems and/or equipment it interfaces). 2. Review and demonstration of servicing/preventive maintenance. 3. Review of the information in the systems manual. 4. Review of the record drawings on the system/equipment. [2013 CALGreen] 	<p>See Supporting Documentation for Section 5.410.2.5 Documentation and training.</p>	<p>Approved Systems Manual (signature page or approval correspondence only)</p>
<p>5.410.2.6 Commissioning report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative. Note: Guidance on implementation and enforcement of commissioning requirements, including sample compliance forms and templates, may be found in Appendix A6, Division A6.1, of this code. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide copy of approved Commissioning Report (signature page or approval correspondence only). The Commissioning Report shall define: the commissioning process activities undertaken through the design and construction phases of the building process for the Project. 	<p>Copy of approved Commissioning Report (signature page or approval correspondence only)</p>
<p>5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only) Approved final report (signature page or approval correspondence only)</p>

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2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting systems shall include, as applicable to the project:</p> <ol style="list-style-type: none"> 1. HVAC systems and controls. 2. Indoor and outdoor lighting and controls. 3. Water heating systems. 4. Renewable energy systems. 5. Landscape irrigation systems. 6. Water reuse systems. [2013 CALGreen] 	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed</p> <p>Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only)</p> <p>Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system as determined by the enforcing agency. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed</p> <p>Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only)</p> <p>Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.3.1 HVAC balancing. In addition to testing and adjusting, before a new space-conditioning system serving a building or space is operated for normal use, balance the system in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards; the National Environmental Balancing Bureau Procedural Standards; Associated Air Balance Council National Standards or as approved by the enforcing agency. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed</p> <p>Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only)</p> <p>Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide evidence that the testing and adjusting of systems has been completed. 2. Provide copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only). The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable. 3. Provide approved final report (signature page or approval correspondence only) after completion of testing, adjusting and balancing. The report shall be signed by the individual responsible for performing these services. 	<p>Evidence testing and adjusting of systems is completed</p> <p>Copy of approved written plan of procedures for testing and adjusting systems (signature page or approval correspondence only)</p> <p>Approved final report (signature page or approval correspondence only)</p>
<p>5.410.4.5 Operation and maintenance (O&M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O&M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations. [2010 CALGreen]</p>	<p>Provide approved Operation and Maintenance (O&M) Manual (signature page or approval correspondence only). The O&M Manual shall include: (1) detailed operating and maintenance instruction; (2) copies of guaranties/warranties for each system. The O&M Manual instructions shall be consistent with OSHA requirements in the Code of California Regulations, Title 8, Section 5142, and other regulations.</p>	<p>Approved Operation and Maintenance (O&M) Manual (signature page or approval correspondence only)</p>
<p>5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency. [2010 CALGreen]</p>	<p>Provide approved inspection verifications and reports required by Metro (signature pages or approval correspondence only).</p>	<p>Approved inspection verifications and reports required by Metro (signature pages or approval correspondence only)</p>

APPENDIX C

Sustainability Plan Monthly Update Supporting Documentation

2016 CALGREEN, ENVIRONMENTAL QUALITY

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.503.1 Fireplaces. Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace or a sealed woodstove or pellet stove, and refer to residential requirements in the California Energy Code, Title 24, Part 6, Subchapter 7, Section 150. Woodstoves, pellet stoves and fireplaces shall comply with applicable local ordinances. [2016 CALGreen]	This Section is not applicable to Metro projects.	None
5.503.1.1 Woodstoves. Woodstoves and pellet stoves shall comply with US EPA New Source Performance Standards (NSPS) emission limits as applicable, and shall have a permanent label indicating they are certified to meet the emission limits. [2016 CALGreen]	This Section is not applicable to Metro projects.	None
5.504.1 Temporary ventilation. The permanent HVAC system shall only be used during construction if necessary to condition the building or areas of addition or alteration within the required temperature range for material and equipment installation. If the HVAC system is used during construction, use return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30 percent based on ASHRAE 52.1-1992. Replace all filters immediately prior to occupancy, or, if the building is occupied during alteration, at the conclusion of construction. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide mechanical plans or other appropriate documentation that show, if the HVAC system is used during construction, return air filters with a Minimum Efficiency Reporting Value (MERV) of 8, based on ASHRAE 52.2-1999, or an average efficiency of 30 percent based on ASHRAE 52.1-1992 will be used. 2. Provide mechanical plans or other appropriate documentation that, prior to building or facility occupancy, all filters shall be replaced. 	Mechanical plan or other appropriate documentation
A5.504.1 Indoor air quality (IAQ) during construction. Maintain IAQ as provided in Sections A5.504.1.1 and A5.504.1.2.		
A5.504.1.1 Temporary ventilation. Provide temporary ventilation during construction in accordance with Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8 and as listed in Items 1 and 2 in Section A5.504.1.2.		
A5.504.1.2 Additional IAQ measures. Employ additional measures as listed in Items 1 through 5 in Section A5.504.1.2. [2010 CALGreen]	Provide evidence that indoor air quality (IAQ) shall be maintained during construction through the use of temporary ventilation and/or additional indoor air quality measures.	Evidence that indoor air quality (IAQ) shall be maintained
A5.504.2 IAQ postconstruction. Flush out the building per Section A5.504.2 prior to occupancy or if the building is occupied. [2013 CALGreen]	Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM ₁₀], 4-Phenylechlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1 IAQ Testing. A testing alternative may be employed after all interior finishes have been installed, using testing protocols recognized by the United State Environmental Protection Agency (U.S. EPA) and in accordance with Section [2013 CALGreen]	Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM ₁₀], 4-Phenylechlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1.2. Retest as required in Section A5.504.2.1.3. [2013 CALGreen]	Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM ₁₀], 4-Phenylechlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1.1 Maximum levels of contaminants. Allowable levels of contaminant concentrations measured by testing shall not exceed the following: <ol style="list-style-type: none"> 1. Carbon Monoxide (CO): 9 parts per million, not to exceed outdoor levels by 2 parts per million; 2. Formaldehyde: 27 parts per billion; 3. Particulates (PM₁₀): 50 micrograms per cubic meter; 4. 4-Phenylcyclohexene (4-PCH): 6.5 micrograms per cubic meter; and 5. Total Volatile Organic Compounds (TVOC): 300 micrograms per cubic meter. A5.504.2.1.2 Test protocols. Testing of indoor air quality should include the elements listed in Items 1 through 4. [2013 CALGreen]	Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM ₁₀], 4-Phenylechlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
A5.504.2.1.3 Noncomplying building areas. For each sampling area of the building exceeding the maximum concentrations specified in Section A5.504.2.1.1, flush out with outside air and retest samples taken from the same area. Repeat the procedures until testing demonstrates compliance. [2013 CALGreen]	Provide evidence that indoor air quality (IAQ) post construction has been addressed. This shall include: flushing out the building prior to occupancy; testing and retesting of indoor air quality after all interior finishes have been installed; and verifying that the maximum levels of contaminants (Carbon Monoxide [CO], Formaldehyde, Particulates [PM ₁₀], 4-Phenylechlohexene [4-PCH], and Total Volatile Organic Compounds [TVOC]) measured by testing shall not exceed the contaminants defined in Section A5.504.2.1.1. The contaminant levels will be tested and retested until testing demonstrates compliance.	Evidence that indoor air quality (IAQ) post construction has been addressed
5.504.3 Covering of duct openings and protection of mechanical equipment during construction. At the time of rough installation and during storage on the construction site and until final startup of the heating, cooling and ventilating equipment, all duct and other related air distribution component openings shall be covered with tape, plastic, sheetmetal or other methods acceptable to the enforcing agency to reduce the amount of dust, water and debris which may enter the system. [2010 CALGreen]	Provide documentation that the covering of duct openings and protection of mechanical equipment shall occur during construction.	Documentation that duct openings would be covered and mechanical equipment protected
5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6. [2016 CALGreen]	See Supporting Documentation for Sections 5.504.4.1 through 5.504.4.6 below.	Architectural plan, floor plans, room finish schedules, or other information Evidence that adhesives, sealants, and caulks shall comply Evidence that aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds comply
5.504.4.1 Adhesives, sealants, caulks. Adhesives, sealants, and caulks used on the project shall meet the requirements of the following standards: <ol style="list-style-type: none"> 1. Adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers and caulks shall comply with local or regional air pollution control or air quality management district rules where applicable, or SCAQMD Rule 1168 VOC limits, as shown in Tables 5.504.4.1 and 5.504.4.2. Such products also shall comply with the Rule 1168 prohibition on the use of certain toxic compounds (chloroform, ethylene dichloride, methylene chloride, perchloroethylene and trichloroethylene), except for aerosol products as specified in subsection 2, below. 2. Aerosol adhesives and smaller unit sizes of adhesives, and sealant or caulking compounds (in units of product, less packaging, which do not weigh more than one pound and do not consist of more than 16 fluid ounces) shall comply with statewide VOC standards and other requirements, including prohibitions on use of certain toxic compounds, of California Code of Regulations, Title 17, commencing with Section 94507. [2010 CALGreen] 	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that lists the location, type, and quantities of adhesives, sealants, and caulks to be used on the Project. 2. Provide evidence that adhesives, sealants, and caulks shall comply with the South Coast Air Quality Management District (SCAQMD) Rule 1168 Volatile Organic Compound (VOC) limits, including compliance with prohibition of defined toxic substances. 3. Provide evidence that aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds (at quantities defined in Section 5.504.4.1) shall comply with the SCAQMD Rule 1168 VOC limits and/or the California Air Resource Board (CARB) VOC standards and requirements, including compliance with prohibition of certain toxic compounds as defined in California Code of Regulations, Title 17, Section 94507 et seq., whichever is more restrictive. 	Architectural plan, floor plans, room finish schedules, or other information Evidence adhesives, sealants, and caulks are in compliance Evidence aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds are in compliance

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.504.4.3 Paints and coatings. Architectural paints and coatings shall comply with VOC limits in Table 1 of the ARB Architectural Coatings Suggested Control Measure, as shown in Table 5.504.4.3, unless more stringent local limits apply. The VOC content limit for coatings that do not meet the definitions for the specialty coatings categories listed in Table 5.504.4.3 shall be determined by classifying the coating as a Flat, Nonflat or Nonflat-High Gloss coating, based on its gloss as defined in Subsections 4.21, 4.36 and 4.37 of the 2007 California Air Resources Board Suggested Control Measure, and the corresponding Flat, Nonflat or Nonflat-High Gloss VOC limit in Table 5.504.4.3 shall apply. [2010 CALGreen]	<ol style="list-style-type: none"> 1. Provide architectural plans and room finish schedules that list the location, type, and quantities of architectural paints and coatings to be used on the Project. 2. Provide evidence that architectural paints and coatings shall comply with Volatile Organic Compound (VOC) limits in CALGreen Table 5.504.4.3 and/or South Coast Air Quality Management District (SCAQMD) Rule 1168 VOC limits 	Architectural plan and room finish schedules Evidence that architectural paints and coatings shall comply
5.504.4.3.1 Aerosol paints and coatings. Aerosol paints and coatings shall meet the Product- Weighted MIR (PWMIR) Limits for ROC in Section 94522(a) (3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c) (2) and (d) (2) of the California Code of Regulations, Title 17, commencing with Section 94520; and in areas under the jurisdiction of the Bay Area Air Quality Management District additionally comply with the percent VOC by weight of product limits of Regulation 8 Rule 49.	<ol style="list-style-type: none"> 1. Provide plan sheet(s) or other information that list the location, type, and quantities of aerosol paints and coatings to be used on the Project. 2. Provide evidence that aerosol paints and coatings shall meet the Product-weighted Maximum Incremental Reactivity (MIR) limits for Reactive Organic Compounds (ROC) for certain toxic compounds and ozone depleting substances set forth in the California Code of Regulations, Title 17, Section 94520 et seq. 	Plan sheets or other information Evidence that architectural paints and coatings shall comply
5.504.4.3.2 Verification. Verification of compliance with this section shall be provided at the request of the enforcing agency. Documentation may include, but is not limited to, the following: <ol style="list-style-type: none"> 1. Manufacturer's product specification. 2. Field verification of on-site product containers. [2010 CALGreen] 	See Supporting Documentation for Sections 5.504.4.1 through 5.504.4.3.1 above.	Architectural plan and room finish schedules Evidence that architectural paints and coatings shall comply
5.504.4.4 Carpet systems. All carpet installed in the building interior shall meet at least one of the following testing and product requirements: <ol style="list-style-type: none"> 1. Carpet and Rug Institute's Green Label Plus Program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as CDPH Standard Method V1.1 or Specification 01350); 3. NSF/ANSI 140 at the Gold level or higher; 4. Scientific Certifications Systems Sustainable Choice; or 5. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and EQ 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database. [2013 CALGreen] 	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that list the location and the characteristics of all carpet installed in the interior of buildings. 2. Provide evidence that the carpet shall meet at least one of the testing and product requirements listed in Section 5.504.4.4. 3. Provide evidence that all carpet cushion installed in the interior of buildings shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4. Provide evidence that all carpet adhesive shall meet the requirements of CALGreen Table 5.504.4.1. 	Architectural plan, floor plans, room finish schedules, or other information Evidence that the carpet system shall meet at least one testing and product requirement Carpet cushion shall comply Carpet adhesive shall comply
5.504.4.4.1 Carpet cushion. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute's Green Label program. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that list the location and the characteristics of all carpet installed in the interior of buildings. 2. Provide evidence that the carpet shall meet at least one of the testing and product requirements listed in Section 5.504.4.4. 3. Provide evidence that all carpet cushion installed in the interior of buildings shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4. Provide evidence that all carpet adhesive shall meet the requirements of CALGreen Table 5.504.4.1. 	Architectural plan, floor plans, room finish schedules, or other information Evidence that the carpet system shall meet at least one testing and product requirement Carpet cushion shall comply Carpet adhesive shall comply
5.504.4.4.2 Carpet adhesive. All carpet adhesive shall meet the requirements of Table 5.504.4.1. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that list the location and the characteristics of all carpet installed in the interior of buildings. 2. Provide evidence that the carpet shall meet at least one of the testing and product requirements listed in Section 5.504.4.4. 3. Provide evidence that all carpet cushion installed in the interior of buildings shall meet the requirements of the Carpet and Rug Institute's Green Label program. 4. Provide evidence that all carpet adhesive shall meet the requirements of CALGreen Table 5.504.4.1. 	Architectural plan, floor plans, room finish schedules, or other information Evidence that the carpet system shall meet at least one testing and product requirement Carpet cushion shall comply Carpet adhesive shall comply
5.504.4.5 Composite wood products. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's Air Toxic Control Measure (ATCM) for Composite Wood (17 CCR 93120 et seq.) Those materials not exempted under the ATCM must meet the specified emission limits, as shown in Table 5.504.4.5. [2013 CALGreens]	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, interior or exterior elevations, room finish schedules, or and other information that indicates the location and types of composite wood products used on the interior or exterior of the buildings. 2. Provide documentation that the composite wood products shall meet the requirements for formaldehyde as specified in Section 5.504.4.5. This shall include at least one of the documentation listed in Section 5.504.4.5.3. 	Architectural plan, floor plans, interior or exterior elevations, room finish schedules, and/or other information
A5.504.4.5.1 No added formaldehyde, Tier 1. Use composite wood products approved by the ARB as no-added formaldehyde (NAF) based resins or ultra-low emitting formaldehyde (ULEF) resins. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, interior or exterior elevations, room finish schedules, or other information that indicates the location and types of composite wood products used on the interior or exterior of the buildings. 2. Provide documentation that the composite wood products is approved by the California Air Resources Board as no-formaldehyde based resins (NAF) or ultra-low emitting formaldehyde (ULEF) resins. 	Architectural plan, floor plans, interior or exterior elevations, room finish schedules, and/or other information Documentation that the composite wood products are approved by the California Air Resources Board
5.504.4.5.3 Documentation. Verification of compliance with this section shall be provided as requested by the enforcing agency. Documentation shall include at least one of the following: <ol style="list-style-type: none"> 1. Product certifications and specifications. 2. Chain of custody certifications. 3. Product labeled and invoiced as meeting the Composite Wood Products regulation (see CCR, Title 17, Section 93120, et seq.). 4. Exterior grade products marked as meeting the PS-1 or PS-2 standards of the Engineered Wood Association, the Australian AS/NZS 2269 or European 636 3S standards. 5. Other methods acceptable to the enforcing agency. 	See Supporting Documentation for Section 5.504.4.5 Composite Wood Products above.	Architectural plan, floor plans, interior or exterior elevations, room finish schedules, and/or other information Documentation that the composite wood products are approved by the California Air Resources Board
5.504.4.6 Resilient flooring systems. For 80 percent of floor area receiving resilient flooring, installed resilient flooring shall meet at least one of the following: <ol style="list-style-type: none"> 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). [2013 CALGreen] 	<ol style="list-style-type: none"> 1. Provide architectural plans, floor plans, room finish schedules, or other information that list the location and type of resilient flooring. 2. Provide documentation that percentage of the floor area receiving flooring meets one of the criteria listed in Section 5.504.4.6. 	Architectural plan, floor plans, room finish schedules, or other information Documentation that percentage of floor area shall comply

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>A5.504.4.7 Resilient flooring systems, Tier 1 [BSC]. For 90 percent of floor area receiving resilient flooring, install resilient flooring that is:</p> <ol style="list-style-type: none"> 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). [2016 CALGreen] 	<p>Provide floor plans, room finish schedules, or other information that verifies 90 percent (Tier 1) of the floor area will be receiving resilient flooring that meets the requirements of Section A5.504.4.7.</p>	<p>Floor plans, room finish schedules, or other information</p>
<p>A5.504.4.7.1 Resilient flooring systems, Tier 2 [BSC]. For 100 percent of floor area receiving resilient flooring, install resilient flooring that is:</p> <ol style="list-style-type: none"> 1. Certified under the Resilient Floor Covering Institute (RFCI) FloorScore program; 2. Compliant with the VOC-emission limits and testing requirements specified in the California Department of Public Health's 2010 Standard Method for the Testing and Evaluation Chambers, Version 1.1, February 2010; 3. Compliant with the Collaborative for High Performance Schools California (CA-CHPS) Criteria Interpretation for EQ 7.0 and 7.1 (formerly EQ. 2.2) dated July 2012 and listed in the CHPS High Performance Product Database; or 4. Products certified under UL GREENGUARD Gold (formerly the Greenguard Children's & Schools Program). <p>Exception: Allowance may be permitted in Tier 2 for up to 5-percent specialty purpose flooring. [2016 CALGreen]</p>	<p>Provide floor plans, room finish schedules, or other information that verifies 100 percent (Tier 2) of the floor area will be receiving resilient flooring that meets the requirements of Section A5.504.4.7.1.</p>	<p>Floor plans, room finish schedules, or other information</p>
<p>A5.504.4.7.2 Verification of compliance. Documentation shall be provided verifying that resilient flooring materials meet the pollutant emission limits. [2016 CALGreen]</p>	<p>Provide documentation that verifies resilient flooring materials meet the pollutant emission limits.</p>	<p>Documentation that verifies resilient flooring materials</p>
<p>A5.504.4.8 Thermal insulation, Tier 1. Comply with the following standards:</p> <ol style="list-style-type: none"> 1. Chapters 12-13 (Standards for Insulating Material) in Title 24, Part 12, the California Referenced Standards Code. 2. The VOC-emission limits defined in 2009 CHPS criteria and listed on its High Performance Products Database. 3. California Department of Public Health 2010 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers, Version 1.1, February 2010 (also known as Specification 01350). [2016 CALGreen] 	<ol style="list-style-type: none"> 1. Provide documentation that Tier 1 and Tier 2 thermal insulation complies with the standards defined in Sections A5.504.4.8 and A5.504.4.8.1, respectively. 2. The documentation shall verify that thermal insulation materials met the pollutant emission limits. 	<p>Documentation that thermal insulation materials meet pollutant emission limits</p>
<p>A5.504.4.8.1 Thermal insulation, Tier 2. Thermal insulation, No-added Formaldehyde. Install thermal insulation which complies with Tier 1 plus does not contain any added formaldehyde. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that Tier 1 and Tier 2 thermal insulation complies with the standards defined in Sections A5.504.4.8 and A5.504.4.8.1, respectively. 2. The documentation shall verify that thermal insulation materials met the pollutant emission limits. 	<p>Documentation that thermal insulation materials meet pollutant emission limits</p>
<p>A5.504.4.8.2 Verification of compliance. Documentation shall be provided verifying that thermal insulation materials meet the pollutant emission limits. [2016 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that Tier 1 and Tier 2 thermal insulation complies with the standards defined in Sections A5.504.4.8 and A5.504.4.8.1, respectively. 2. The documentation shall verify that thermal insulation materials met the pollutant emission limits. 	<p>Documentation that thermal insulation materials meet pollutant emission limits</p>
<p>A5.504.4.9.1 Verification of compliance. Documentation shall be provided verifying that acoustical finish materials meet the pollutant emission limits.</p> <p>Note: Products compliant with CHPS criteria certified under the Greenguard Children & Schools program may also be used. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that acoustical ceilings and wall panels shall comply with Chapter 8, Title 24, Part 2. 	<p>Documentation that acoustical ceilings and wall panels shall comply</p>
<p>A5.504.4.9 Acoustical ceilings and wall panels. Comply with Chapter 8 in Title 24, Part 2, the California Building Code and with the VOC-emission limits defined in the 2009 CHPS criteria and listed on its High Performance Products Database. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that acoustical ceilings and wall panels shall comply with Chapter 8, Title 24, Part 2. 	<p>Documentation that acoustical ceilings and wall panels shall comply</p>
<p>A5.504.5 Hazardous particulates and chemical pollutants. Minimize and control pollutant entry into buildings and cross-contamination of regularly occupied areas. [2010 CALGreen]</p>	<p>Provide documentation that measures shall be provided to minimize and control entry of hazardous particulates and chemical pollutants into buildings and cross-contamination of regularly occupied areas. This shall be accomplished through: the installation of permanent entry systems that capture dirt and particulates at entry ways directly connected to the outdoors; and/or the isolation of pollutant sources where activities produce hazardous fumes or chemicals.</p>	<p>Documentation that measures minimize and control entry of hazardous particulates and chemical pollutants</p>
<p>A5.504.5.1 Entryway systems. Install permanent entryway systems measuring at least six feet in the primary direction of travel to capture dirt and particulates at entryways directly connected to the outdoors as listed in Items 1 through 3 in Section A5.504.5.1. [2010 CALGreen]</p>	<p>Provide documentation that measures shall be provided to minimize and control entry of hazardous particulates and chemical pollutants into buildings and cross-contamination of regularly occupied areas. This shall be accomplished through: the installation of permanent entry systems that capture dirt and particulates at entry ways directly connected to the outdoors; and/or the isolation of pollutant sources where activities produce hazardous fumes or chemicals.</p>	<p>Documentation that measures minimize and control entry of hazardous particulates and chemical pollutants</p>
<p>A5.504.5.2 Isolation of pollutant sources. In rooms where activities produce hazardous fumes or chemicals, such as garages, janitorial or laundry rooms and copy or printing rooms, exhaust them and isolate them from their adjacent rooms as listed in Items 1 through 3 in Section A5.504.5.2. [2010 CALGreen]</p>	<p>Provide documentation that measures shall be provided to minimize and control entry of hazardous particulates and chemical pollutants into buildings and cross-contamination of regularly occupied areas. This shall be accomplished through: the installation of permanent entry systems that capture dirt and particulates at entry ways directly connected to the outdoors; and/or the isolation of pollutant sources where activities produce hazardous fumes or chemicals.</p>	<p>Documentation that measures minimize and control entry of hazardous particulates and chemical pollutants</p>
<p>5.504.5.3 Filters. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air that provides at least a Minimum Efficiency Reporting Value (MERV) of 8. MERV 8 filters shall be installed prior to occupancy, and recommendations for maintenance with filters of the same value shall be included in the operation and maintenance manual.</p> <p>Exceptions:</p> <ol style="list-style-type: none"> 1. An ASHRAE 10-percent to 15-percent efficiency filter shall be permitted for an HVAC unit meeting the 2013 California Energy Code having 60,000 Btu/h or less capacity per fan coil, if the energy use of the air delivery system is 0.4 W/cfm or less at design air flow. 2. Existing mechanical equipment. <p>5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide building plans and/or other documentation that provides evidence that, in mechanically ventilated buildings, regularly occupied areas of the building will have air filtration media for outside and return air that provides at least a MERV of 8. 2. Provide documentation that verifies the filters shall be installed prior to building occupancy. 3. Provide evidence that the maintenance of the MERV 8 filters shall be included in the Operation and Maintenance (O&M) Manual. 4. Provide evidence that the installed filters shall be clearly labeled by the manufacturer indicating the MERV rating. 	<p>Building plans and/or other documentation Documentation of filter installation Evidence maintenance of the MERV 8 filters is included in the Operation and Maintenance (O&M) Manual Evidence that the installed filters shall be clearly labeled</p>
<p>5.504.5.3.1 Labeling. Installed filters shall be clearly labeled by the manufacturer indicating the MERV rating. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide building plans and/or other documentation that provides evidence that, in mechanically ventilated buildings, regularly occupied areas of the building will have air filtration media for outside and return air that provides at least a MERV of 8. 2. Provide documentation that verifies the filters shall be installed prior to building occupancy. 3. Provide evidence that the maintenance of the MERV 8 filters shall be included in the Operation and Maintenance (O&M) Manual. 4. Provide evidence that the installed filters shall be clearly labeled by the manufacturer indicating the MERV rating. 	<p>Building plans and/or other documentation Documentation of filter installation Evidence maintenance of the MERV 8 filters is included in the Operation and Maintenance (O&M) Manual Evidence that the installed filters shall be clearly labeled</p>
<p>A5.504.5.3.1 Filters, Tier 1. In mechanically ventilated buildings, provide regularly occupied areas of the building with air infiltration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 11. [2013 CALGreen]</p>	<ol style="list-style-type: none"> 1. Provide documentation that in mechanically ventilated buildings, regularly occupied areas of the building with air filtration media for outside and return air shall be provided at a MERV of 11 for Tier 1 and a MERV of 13 for Tier 2, respectively. 2. Provide evidence that Tier 1 or Tier 2 filters were installed prior to occupancy. 	<p>Documentation that appropriate air filtration media shall be used in mechanically ventilated buildings Documentation that installation would occur prior to occupancy</p>

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
A5.504.5.3.1.1 Filters, Tier 2. In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 13. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide documentation that in mechanically ventilated buildings, regularly occupied areas of the building with air filtration media for outside and return air shall be provided at a MERV of 11 for Tier 1 and a MERV of 13 for Tier 2, respectively. 2. Provide evidence that Tier 1 or Tier 2 filters were installed prior to occupancy. 	Documentation that appropriate air filtration media shall be used in mechanically ventilated buildings Documentation that installation would occur prior to occupancy
5.504.7 Environmental tobacco smoke (ETS) control. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and within the building as already prohibited by other laws or regulations; or as enforced by ordinances, regulations or policies of any city, county, city and county, California Community College, campus of the California State University, or campus of the University of California, whichever are more stringent. When ordinances, regulations or policies are not in place, post signage to inform building occupants of the prohibitions. [2010 CALGreen]	Provide site plans, signage plans, and details that indicate signage that prohibits smoking within 25 feet of the building entries, outdoor air intakes, and operable windows consistent with existing State and local laws.	Site plan, signage plan, and details
5.505.1 Indoor moisture control. Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 and Chapter 14.1. For additional measures not applicable to low-rise residential occupancies, see Section 5.407.2 of this code. [2010 CALGreen]	Provide documentation that buildings shall meet or exceed the moisture control requirements of the California Building Code, California Code of Regulations, Title 24, Part 2, Sections 1203 and Chapter 14.1.	Documentation that buildings shall meet or exceed the moisture control requirements
5.506.1 Outside air delivery. For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 120.1 (Requirements for Ventilation) of the California Energy Code, or the applicable local code, whichever is more stringent, and Division 1, Chapter 4 of CCR, Title 8. [2013 CALGreen]	Provide documentation that mechanically or naturally ventilated spaces in buildings meet the requirements of Section 120.1 (Requirements for Ventilation) of the California Energy Code and Division 1, Chapter 4 of the California Code of Regulations, Title 8.	Documentation that mechanically or naturally ventilated spaces in buildings meet the requirements
5.506.2 Carbon dioxide (CO2) monitoring. For buildings or additions equipped with demand control ventilation, CO2 sensors and ventilation controls shall be specified and installed in accordance with the requirements of the 2013 California Energy Code, Section 120(c) (4). [2013 CALGreen]	Provide documentation, including building plans, legends, details, or other information, which provides evidence that buildings equipped with demand control ventilation will be equipped with Carbon Dioxide (CO2) sensors and ventilation controls consistent with the requirements of the California Energy Code, Section 120(c) (4).	Building plan, legends, details, and/or other information
A5.507.1 Lighting and thermal comfort controls. Provide controls in the workplace as described in Sections A5.507.1.1 and A5.507.1.2. [2010 CALGreen]	Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legends, details, and/or other information
A5.507.1.1 Single-occupant spaces. Provide individual controls that meet energy use requirements in the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2. [2010 CALGreen]	Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legends, details, and/or other information
A5.507.1.1.1 Lighting. Provide individual task lighting and/or daylighting controls for at least 90 percent of the building occupants. [2010 CALGreen]	Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legends, details, and/or other information
A5.507.1.1.2 Thermal comfort. Provide individual thermal comfort controls for at least 50 percent of the building occupants by Items 1 and 2 in Section A5.507.1.1.2. [2010 CALGreen]	Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legends, details, and/or other information
A5.507.1.2 Multi-occupant spaces. Provide lighting and thermal comfort system controls for all shared multi-occupant spaces, such as classrooms and conference rooms. [2010 CALGreen]	Provide documentation, including building plans, legend, details, or other information which provides evidence that lighting and thermal controls meet the requirements of the California Energy Code in accordance with Sections A5.507.1.1.1 and A5.507.1.1.2 for single-occupant spaces and Section A5.507.1.2 for multi-occupant spaces.	Building plan, legends, details, and/or other information
A5.507.3 Views. Achieve direct line of sight to the outdoor environment via vision glazing between 2'6" and 7'6" above finish floor for building occupants in 90 percent of all regularly occupied areas as demonstrated by plan view and section cut diagrams. [2010 CALGreen]	Provide elevations and section cut diagrams that indicate the building design achieves direct line of site to the outdoors for 90 percent of all regularly occupied areas and 75 percent of the entire area of interior office spaces.	Elevations and section cut diagrams
A5.507.3.1 Interior office spaces. Entire areas of interior office spaces may be included in the calculation if at least 75 percent of each area has direct line of sight to perimeter vision glazing. [2010 CALGreen]	Provide elevations and section cut diagrams that indicate the building design achieves direct line of site to the outdoors for 90 percent of all regularly occupied areas and 75 percent of the entire area of interior office spaces.	Elevations and section cut diagrams
A5.507.3.2 Multi-occupant spaces. Include in the calculation the square footage with direct line of sight to perimeter vision glazing. Exceptions to Sections A5.507.2 and A5.507.3. Copy/printing rooms, storage areas, mechanical spaces, restrooms, auditoria and other intermittently or infrequently occupied spaces or spaces where daylight would interfere with use of the space. [2010 CALGreen]	Provide elevations and section cut diagrams that indicate the building design achieves direct line of site to the outdoors for 90 percent of all regularly occupied areas and 75 percent of the entire area of interior office spaces.	Elevations and section cut diagrams
5.507.4 Acoustical control. Employ building assemblies and components with Sound Transmission Class (STC) values determined in accordance with ASTM E 90 and ASTM E 413 or Outdoor-Indoor Sound Transmission Class (OITC) determined in accordance with ASTM E 1332, using either the prescriptive or performance method in Section 5.507.4.1 or 5.507.4.2. Exception: Buildings with few or no occupants or where occupants are not likely to be affected by exterior noise, as determined by the enforcement authority, such as factories, stadiums, enclosed parking structures and utility buildings. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels. 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.1 Exterior noise transmission, prescriptive method. Wall and floor-ceiling assemblies exposed to the noise source making up the building envelope shall have exterior wall and roof ceiling assemblies meeting a composite STC rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels. 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Leq-1Hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30). [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels. 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.2 Performance method. For buildings located as defined in Sections 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building envelope or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq-1Hr) of 50 dBA in occupied areas during any hour of operation. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels. 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition or alteration project to mitigate sound migration to the interior. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels. 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record. [2013 CALGreen]	<ol style="list-style-type: none"> 1. Provide approved acoustical analysis (signature page or approval letter only) that indicates wall and floor-ceiling assemblies exposed to the Project noise source making up the building envelope shall have exterior wall and roof assemblies meeting a composite Sound Transmission Class (STC) rating of at least 50 or a composite OITC rating of no less than 40 with exterior windows of a minimum STC of 40 or OITC of 30 in the locations described in Items 1 and 2. 2. Where noise contours are not available, the acoustical analysis shall use the prescriptive method consistent with Section 5.507.4.1. 3. Provide evidence in the acoustical analysis that the wall and roof-ceiling assemblies making up the building envelope shall be constructed to provide an interior noise environment that does not exceed an hourly equivalent noise level (Leq-1 Hr) of 50 dBA in occupied areas during any hour of operation. 4. Provide site plans, elevations, or any other information where sound walls or earthen berms are incorporated into the Project to mitigate interior sound levels. 	Approved acoustical analysis (signature page or approval letter only) Where noise contours are not available, an acoustical analysis using prescriptive method Site plan, elevations, and/or any other information
5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40. [2013 CALGreen]	Provide plans that indicate, if wall and floor-ceiling assemblies separate tenant spaces, tenant spaces and public spaces shall have a Sound Transmission Class (STC) of at least 40.	Floor plans and details
5.508.1 Ozone depletion and global warming reductions. Installations of HVAC, refrigeration and fire suppression equipment shall comply with Sections 5.508.1.1 and 5.508.1.2. [2010 CALGreen]	1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain chlorofluorocarbons (CFCs). Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain Halons.	Documentation with evidence
5.508.1.1 Chlorofluorocarbons (CFCs). Install HVAC, refrigeration and fire suppression equipment that do not contain CFCs. [2010 CALGreen]	1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain chlorofluorocarbons (CFCs). Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain Halons.	Documentation with evidence
5.508.1.2 Halons. Install HVAC, refrigeration and fire suppression equipment that do not contain Halons. [2010 CALGreen]	1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain chlorofluorocarbons (CFCs). Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment does not contain Halons.	Documentation with evidence
A5.508.1.3 Hydrochlorofluorocarbons (HCFCs). Install HVAC and refrigeration equipment that does not contain HCFCs. [2010 CALGreen]	Provide documentation with evidence HVAC systems and refrigeration does not contain Hydrochlorofluorocarbons (HCFCs).	Documentation with evidence
A5.508.1.4 Hydrofluorocarbons (HFCs). Install HVAC complying with either of the following: 1. Install HVAC, refrigeration and fire suppression equipment that do not contain HFCs or that do not contain HFCs with a global warming potential greater than 150. 2. Install HVAC and refrigeration equipment that limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1. [2010 CALGreen]	<ol style="list-style-type: none"> 1. Provide documentation with evidence HVAC systems, refrigeration, and fire suppression equipment will not contain Hydrocarbons (HFCs) or will not contain HFCs with a global warming potential greater than 150. 2. Provide documentation with evidence HVAC systems and refrigeration equipment will limit the use of HFC refrigerant through the use of a secondary heat transfer fluid with a global warming potential no greater than 1. 	Documentation with evidence

APPENDIX C

2016 CALGREEN, MATERIAL CONSERVATION & RECYCLING EFFICIENCY *continued*

CALGREEN SUSTAINABLE COMMITMENTS	SUSTAINABILITY PLAN MONTHLY UPDATE SUPPORTING DOCUMENTATION TO BE PROVIDED BY CONTRACTOR	SUMMARY OF SUPPORTING DOCUMENTS
<p>5.508.2 Supermarket refrigerant leak reduction. New commercial refrigeration systems shall comply with the provisions of this section when installed in retail food stores 8,000 square feet or more conditioned area, and that utilize either refrigerated display cases, or walk-in coolers or freezers connected to remote compressor units or condensing units. The leak reduction measures apply to refrigeration systems containing high-global-warming potential (high-GWP) refrigerants with a GWP of 150 or greater. New refrigeration systems include both new facilities and the replacement of existing refrigeration systems in existing facilities.</p> <p>Exception: Refrigeration systems containing low-global warming potential (low-GWP) refrigerant with a GWP value less than 150 are not subject to this section. Low-GWP refrigerants are nonozone-depleting refrigerants that include ammonia, carbon dioxide (CO₂), and potentially other refrigerants.</p> <p>5.508.2.1 Refrigerant piping. Piping compliant with the California Mechanical Code shall be installed to be accessible for leak protection and repairs. Piping runs using threaded pipe, copper tubing with an outside diameter (OD) less than 1/4 inch, flared tubing connections and short radius elbows shall not be used in refrigerant systems except as noted below.</p> <p>5.508.2.1.1 Threaded pipe. Threaded connections are permitted at the compressor rack.</p> <p>5.508.2.1.2 Copper pipe. Copper tubing with an OD less than 1/4 inch may be used in systems with a refrigerant charge of 5 pounds or less.</p> <p>5.508.2.1.2.1 Anchorage. 1/4 inch OD tubing shall be securely clamped to a rigid base to keep vibration levels below 8 mils.</p> <p>5.508.2.1.3 Flared tubing connections. Double-flared tubing connections may be used for pressure controls, valve pilot lines and oil.</p> <p>Exception: Single-flared tubing connections may be used with a multi-ring seal coated with industrial sealant suitable for use with refrigerants and tightened in accordance with manufacturer's recommendations.</p> <p>5.508.2.1.4 Elbows. Short radius elbows are only permitted where space limitations prohibit use of long radius elbows.</p> <p>5.508.2.2 Valves. Valves and fittings shall comply with the California Mechanical Code and as follows.</p> <p>5.508.2.2.1 Pressure relief valves. For vessels containing high-GWP refrigerant, a rupture disc shall be installed between the outlet of the vessel and the inlet of the pressure relief valve.</p> <p>5.508.2.2.1.1 Pressure detection. A pressure gauge, pressure transducer or other device shall be installed in the space between the rupture disc and the relief valve inlet to indicate a disc rupture or discharge of the relief valve.</p> <p>5.508.2.2.2 Access valves. Only Schrader access valves with a brass or steel body are permitted for use.</p> <p>5.508.2.2.2.1 Valve caps. For systems with a refrigerant charge of 5 pounds or more, valve caps shall be brass or steel and not plastic.</p> <p>5.508.2.2.2.2 Seal caps. If designed for it, the cap shall have a neoprene O-ring in place.</p> <p>5.508.2.2.2.1 Chain tethers. Chain tethers to fit over the stem are required for valves designed to have seal caps.</p> <p>Exception: Valves with seal caps that are not removed from the valve during stem operation.</p> <p>5.508.2.3 Refrigerated service cases. Refrigerated service cases holding food products containing vinegar and salt shall have evaporator coils of corrosion-resistant material, such as stainless steel; or be coated to prevent corrosion from these substances.</p> <p>5.508.2.3.1 Coil coating. Consideration shall be given the heat transfer efficiency of coil coating to maximize energy efficiency.</p> <p>5.508.2.4 Refrigerant receivers. The system shall be pressure tested during installation prior to evacuation and charging.</p> <p>5.508.2.5 Pressure testing. Refrigerant receivers with capacities greater than 200 pounds shall be fitted with a device that indicates the level of refrigerant in the receiver.</p> <p>5.508.2.5.1 Minimum pressure. The system shall be charged with regulated dry nitrogen and appropriate tracer gas to bring system pressure up to 300 psig minimum.</p> <p>5.508.2.5.2 Leaks. Check the system for leaks, repair any leaks, and retest for pressure using the same gauge.</p> <p>5.508.2.5.3 Allowable pressure change. The system shall stand, unaltered, for 24 hours with no more than a +/- one pound pressure change from 300 psig, measured with the same gauge.</p> <p>5.508.2.6 Evacuation. The system shall be evacuated after pressure testing and prior to charging.</p> <p>5.508.2.6.1 First vacuum. Pull a system vacuum down to at least 1000 microns (+/- 50 microns), and hold for 30 minutes.</p> <p>5.508.2.6.2 Second vacuum. Pull a second system vacuum to a minimum of 500 microns and hold for 30 minutes.</p> <p>5.508.2.6.3 Third vacuum. Pull a third vacuum down to a minimum of 300 microns, and hold for 24 hours with a maximum drift of 100 microns over a 24-hour period. [2013 CALGreen]</p>	<p>This section is not applicable to Metro projects.</p>	<p>none</p>

APPENDIX D

Sustainability Information Sheets

APPENDIX D

Sustainability Information Sheet

BICYCLE PARKING SPACE CALCULATION – STAND-ALONE BUILDINGS

REGULATORY REQUIREMENTS

For projects within the City of Los Angeles, refer to Ordinance No. 182386 (replaces 2016 CALGreen Section 5.106.4.1 which requires “meet the applicable local ordinance, which ever is stricter.”)

For projects in the County of Los Angeles or another city, refer to that jurisdiction’s Municipal Code. In the event that no local regulations address bicycle parking, 2016 CALGreen Section 5.106.4.1 would provide the regulatory requirements.

Calculation of Required Short-term and Long-Term Bicycle Parking Per MRDC 6.12.5

Requirements:

Bicycle parking shall be integrated into the stand-alone building site at locations directly accessible to building entrances and visible to passers-by for natural surveillance. Bicycle parking at Metro buildings shall consist of one or a combination of the following:

- > Short-Term Bicycle Parking provided at an inverted-U bicycle rack that allows two (2) bicycles to be securely affixed to the rack with a personal bike lock on a first-come-first served basis. The minimum number of short-term bicycle parking spaces shall be no lower than six (6) spaces, even if the calculated number of spaces is less than 6.
- > Long-term Bicycle Parking provided through the payment of a fee for bicycle storage in a secure-access, enclosed area. The types of paid-secure bicycle parking include:
 - (a) Bicycle lockers that allow for the secure-access and storage of one (1) bicycle to a registered user; or
 - (b) High capacity bicycle parking facility that allows for the storage of multiple bikes locked to bicycle racks (tiered and/or inverted-U) with a personal bicycle lock that is inside an enclosed, but “shared” area, that is securely-accessed by registered users. The minimum number of long-term secured bicycle parking spaces shall be eight (8) lockers, even if the calculated number of lockers is less than 8.

For each stand-alone Metro building, bicycle parking spaces shall be provided to meet current and future demand for both short-term free bicycle parking and long-term bicycle parking based upon the gross floor area calculated as shown in the next page.

CALCULATION OF REQUIRED BICYCLE PARKING SPACES:

To calculate the required number of bicycle parking spaces for each stand-alone Metro building, the following formulas and guidance shall be used:

- > To calculate the current demand, use gross floor area.
- > To calculate the future demand, use gross floor area.
- > To calculate the short-term bicycle parking, use gross floor area.
- > To calculate the long-term secure bicycle parking, use gross floor area.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

BICYCLE PARKING SPACE CALCULATION – STAND-ALONE BUILDINGS *continued*

EXAMPLE CALCULATION FORMAT:

The following provides an example table format that can be used:

Total Building (Gross Floor Area)			
B Occupancy	24,845	33.26%	
F-1 Occupancy	20,666	27.66%	
S-1 Occupancy	29,197	39.08%	
S-2 (***)	0	0.00%	
	74,708	100%	
Notes: (***) S-2 is parking on 3rd level is excluded.			
Analysis			
B Occupancy percent	33.20%		
Allowable office for Industrial use	10%		
Excess s.f. to be computed at Office use ratio	23.20%		
Draft Parking Analysis			
Industrial Use		76.80%	
Per code -			
Short-term bike parking	1 per 10,000 SF		
Long-term bike parking	1 per 10,000 SF		
Total Gross SF		87,204	SF
SF For bike Parking		66,973	SF
Short-term bike spaces		6.70	(7 spaces)
Long-term bike spaces		6.70	(7 spaces)
Office Use		23.20%	
Per code -			
Short-term bike parking		1 per 10,000 SF	
Long-term bike parking		1 per 5,000 SF	
SF For bike Parking		20,231	SF
Short-term bike spaces		2.02	(2 spaces)
Long-term bike spaces		4.05	(4 spaces)
Total No. of Spaces			
Short-term spaces =		8.72	9 spaces
Long-term spaces =		10.74	11 spaces

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

BICYCLE PARKING SPACE CALCULATION – STAND-ALONE BUILDINGS *continued*

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit the following supporting documentation with the Sustainability Plan Monthly Update once the Bicycle Parking Sustainability Element has been defined as complete. Provide separate calculations and plans for each stand-alone building, with a summary for the total bicycle parking for the Metro project addressed in the approved Sustainability Plan.

- > Calculations for the number of required short-term bicycle parking spaces and long-term bicycle parking spaces. Metro projects consisting of stand-alone building(s) shall use the methodology defined in the City of Los Angeles Ordinance No. 182386. The calculations shall include applicable information such as: square footage, land use type, generation factors, sources, and other information related to the methodology used.
- > Plan sheet(s) with the statistical summary of the short-term and long-term bicycle parking.
- > Plan sheets for each station or stand alone building(s) indicating the location of the short-term and long-term bicycle parking spaces and the type of facilities that will be provided (i.e., rack, locker).
- > Plan sheets with details illustrating the dimensions and design of the bicycle parking facilities (i.e., rack, locker).

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

BICYCLE PARKING SPACE CALCULATION – METRO STATIONS

REGULATORY REQUIREMENTS

Metro Rail Design Criteria 6.12.5 (replaces 2016 CALGreen Section 5.106.4.1 which requires a project to “Comply with Sections 5.106.4.1.1 and 5.106.4.1.2; or meet the applicable local ordinance, which ever is stricter.”)

CALCULATION OF REQUIRED SHORT-TERM AND LONG-TERM BICYCLE PARKING PER MRDC 6.12.5

REQUIREMENTS:

Bicycle parking shall be integrated into the station area site at locations directly accessible to station entrances and visible to passers-by for natural surveillance. Bicycle parking at Metro stations shall consist of one or a combination of the following:

- > Short-Term Free Bicycle Parking provided at an inverted-U bicycle rack that allows two (2) bicycles to be securely affixed to the rack with a personal bike lock on a first-come-first served basis. The minimum number of short-term free bicycle parking spaces shall be six (6) spaces, even if the calculated number of spaces is less than 6.
- > Long-term Paid-Secure Bicycle Parking provided through the payment of a fee for bicycle storage in a secure-access, enclosed area. Types of paid-secure bicycle parking consist of:
 - (a) Bicycle lockers that allow for the secure-access and storage of one (1) bicycle to a registered user; or
 - (b) High capacity bicycle parking facilities that allow for the storage of multiple bikes locked to bicycle racks (tiered and/or inverted-U) with a personal bicycle lock that is inside an enclosed, but “shared” area, that is securely-accessed by registered users. The minimum number of long-term paid-secured bicycle parking spaces shall be eight (8) lockers, even if the calculated number of lockers is less than 8.

For each Metro station, bicycle parking spaces shall be provided to meet current and future demand for both short-term free bicycle parking and long-term paid-secure bicycle parking based upon the projected ridership calculated as shown below.

CALCULATION OF REQUIRED BICYCLE PARKING SPACES:

To calculate the required number of bicycle parking spaces for each Metro station, the following formulas and guidance shall be used:

- > Current demand, is 1.25% times the peak ridership.
- > Future demand, is 2.5% times the peak ridership.
- > Short-term free bicycle parking reflects the number of spaces with racks is equal to 60% the total required number of bicycle parking spaces required for the Metro station.
- > Long-term paid-secure bicycle parking reflects the number of spaces with multiple racks and/or in lockers is equal to 40% the total required number of bicycle parking spaces required for the Metro station.

EXAMPLE CALCULATION:

The following provides an example of the table format that can be used for calculations:

CALCULATION OF ESTIMATED DAILY BOARDING			
Metro Stations	Est. Daily Boarding	Est. AM & PM Peak Period Boarding	Est. AM Peak Period Boarding
Wilshire/La Brea	3,636	1,818	909
Wilshire/Fairfax	6,025	3,013	1,506
Wilshire/La Cienega	10,120	5,060	2,530
Total	19,781	9,891	4,945

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

BICYCLE PARKING SPACE CALCULATION – METRO STATIONS *continued*

BICYCLE PARKING SPACES CURRENT DEMAND - METRO MODEL			
Metro Stations	Total Spaces Required	Short-Term Free Bicycle Parking Spaces Required	Long-Term Secured-Access Bicycle Parking Spaces Required
Wilshire/La Brea	23	14	9
Wilshire/Fairfax	38	23	15
Wilshire/La Cienega	63	38	25
Total	124	74	49

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit separate calculations and plans for each station with a summary for the total bicycle parking for the Metro project as supporting documentation with the Sustainability Plan Monthly Update where the Bicycle Parking Sustainability Element is defined as complete:

- > For both current and future demand, provide a table showing the estimated AM and PM Peak Period Boardings (defined as the estimated total Daily Boarding divided by 2) for each Metro station. The estimated total Daily Boarding data can be obtained from Metro Planning.
- > For each Metro station, provide a separate table and summary calculations of the short-term free bicycle parking spaces and long-term secure-access bicycle parking spaces consistent with the requirements of MRDC 6.12.5 summarized above.
- > Site and floor plans (consistent with the requirements of Metro Architectural Standard Drawing AS-013) for each Metro station with clear labels that highlight the location and number of short-term free bicycle parking spaces and long-term secure-access bicycle parking spaces. Plans that are 65% or less complete require a signature on the plans or in correspondence.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY: COMMISSIONING INCLUDED IN DESIGN AND CONSTRUCTION PROCESSES

REGULATORY REQUIREMENTS

MRDC _____

2016 CALGreen Section 5.410.2

COMMISSIONING INCLUDED IN DESIGN AND CONSTRUCTION PROCESSES

California's Building Energy Efficiency Standards (Energy Standards), Title 24, Part 6 defines commissioning as "a systematic quality assurance process that spans the entire design and construction process, including verifying and documenting that building systems and components are planned, designed, installed, tested, operated and maintained to meet the owner's project requirements." CALGreen requirements are complementary to Energy Standards requirements. The Metro Rail Design Criteria specifically defines the commissioning process as a requirement of the Contractor.

To address commissioning as a part of project sustainability, 2016 CALGreen states the following requirements for commissioning of projects during the design and construction processes prior to building occupancy.

Section 5.410.2 Commissioning. [N]. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's or owner representative's project requirements. Commissioning shall be performed in accordance with this section by trained personnel with experience on projects of comparable size and complexity. All occupancies other than I-occupancies and L-occupancies shall comply with the California Energy Code as prescribed in California Energy Code Section 120.8. For I-occupancies that are not regulated by OSHPD or I-occupancies and L-occupancies that are not regulated by California Energy Code Section 100.0 Scope, all requirements in Sections 5.410.2 through 5.410.2.6 shall apply.

Commissioning requirements shall include:

1. Owner's or owner representative's project treatments.
2. Basis of design.
3. Commissioning measures shown in the construction documents.
4. Commissioning plan.
5. Functional performance testing.
6. Documentation and training.
7. Commissioning report.

Exceptions:

1. Unconditioned warehouses of any size.
2. Areas under 10,000 square feet used for offices or other conditioned accessory spaces within unconditioned warehouses.
3. Tenant improvements less than 10,000 square feet as described in Section 303.1.1.
4. Open parking garages of any size, or open parking garage areas, of any size, within a structure.

Note: For the purposes of this section, unconditioned shall mean a building, area, or room which does not provide heating or air conditioning. [2016 CALGreen]

Section 5.410.2.1 Owner's Project Requirements (OPR). [N] The expectations and requirements of the building appropriate to its

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY: COMMISSIONING INCLUDED IN DESIGN AND CONSTRUCTION PROCESSES *continued*

phase shall be documented before the design phase of the project begins. This documentation shall include the following:

1. Environmental and sustainability goals.
2. Energy efficiency goals.
3. Indoor environmental quality requirements.
4. Project program, including facility functions and hours of operation, and need for after hours operation.
5. Equipment and systems expectations.
6. Building occupant and operation and maintenance (O&M) personnel expectations. [2016 CALGreen]

Section 5.410.2.2 Basis of Design (BOD). [N] A written explanation of how the design of the building systems meets the OPR shall be completed at the design phase of the building project. The Basis of Design document shall cover the following systems:

1. Heating, ventilation, air conditioning (HVAC) systems and controls.
2. Indoor lighting system and controls.
3. Water heating system.
4. Renewable energy systems.
5. Landscape irrigation systems.
6. Water reuse systems. [2016 CALGreen]

Section 5.410.2.3 Commissioning Plan. [N] Prior to permit issuance a commissioning plan shall be completed to document how the project will be commissioned. The commissioning shall include the following:

1. General project information.
2. Commissioning goals.
3. Systems to be commissioned. Plans to test systems and components shall include:
 - a. An explanation of the original design intent.
 - b. Equipment and systems to be tested, including the extent of tests
 - c. Functions to be tested.
 - d. Conditions under which the test shall be performed.
- e. Measurable criteria for acceptable performance.
4. Commissioning team information.
5. Commissioning process activities, schedules and responsibilities. Plans for the completion of commissioning shall be included. [2013 CALGreen]

Section 5.410.2.4 Functional performance testing. [N] Functional performance tests shall demonstrate the correct installation and operation of each component, system and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made. [2013 CALGreen]

Section 5.410.2.5 Documentation and Training. [N] A systems manual and systems operations training are required, including Occupational Safety and Health Act (OSHA) requirements in California Code of Regulations (CCR), Title 8, Section 5142, and other related regulations. [2013 CALGreen]

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY: COMMISSIONING INCLUDED IN DESIGN AND CONSTRUCTION PROCESSES *continued*

Section 5.410.2.6 Commissioning Report. [N] A report of commissioning process activities undertaken through the design and construction phases of the building project shall be completed and provided to the owner or representative.

Note: Guidance on implementation and enforcement of commissioning requirements, including sample compliance forms and templates, may be found in Appendix A6, Division A6.1, of this code. [2013 CALGreen]

Section 5.410.4 Testing and adjusting. Testing and adjusting of systems shall be required for new buildings less than 10,000 square feet or new systems to serve an addition or alteration subject to Section 303.1. [2013 CALGreen]

Section 5.410.4.2 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included for testing and adjusting systems shall include, as applicable to the project:

1. HVAC systems and controls.
2. Indoor and outdoor lighting and controls.
3. Water heating systems.
4. Renewable energy systems.
5. Landscape irrigation systems.
6. Water reuse systems. [2013 CALGreen]

Section 5.410.4.3 Procedures. Perform testing and adjusting procedures in accordance with manufacturer's specifications and applicable standards on each system as determined by the enforcing agency. [2013 CALGreen]

Section 5.410.4.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services. [2013 CALGreen]

Section 5.410.4.5 Operation and maintenance (O&M) manual. Provide the building owner or representative with detailed operating and maintenance instructions and copies of guaranties/warranties for each system. O&M instructions shall be consistent with OSHA requirements in CCR, Title 8, Section 5142, and other related regulations. [2010 CALGreen]

Section 5.410.4.5.1 Inspections and reports. Include a copy of all inspection verifications and reports required by the enforcing agency. [2010 CALGreen]

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit the following supporting documentation with the Sustainability Plan Monthly Update when the Commissioning Sustainability Element has been defined as complete. Provide separate plans and manuals for each station addressed in the approved Sustainability Plan:

- > Provide a copy of the Commissioning Plan (signature page or approval correspondence only). The Commissioning Plan, consistent with the requirements of Section 5.410.2.3, shall include: (1) general project information; (2) commissioning goals; (3) systems to be commissioned (plans of systems and components to be tested); (4) commissioning team information; and (5) commissioning process activities, schedules, and responsibilities.
- > Provide applicable plan sheet(s) for the completion of commissioning.
- > Metro shall provide the expectation and requirements of the Project building(s) before the design phase of the Project begins.
- > At the completion of the design phase of the Project, provide a Basis of Design document with a written explanation of how the design of building systems meets Metro's Project requirements that address the following systems: (1) HVAC systems and controls; (2) indoor lighting systems and controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY: COMMISSIONING INCLUDED IN DESIGN AND CONSTRUCTION PROCESSES *continued*

- > A copy of the signature page or approval correspondence for the approved Systems Manual.
- > The approved Systems Manual shall include: (1) site information, facility description, Project history, and current requirements; (2) site contract information; (3) basic operations and maintenance including general operating procedures basic troubleshooting, recommended maintenance requirements, and site events log; (4) major systems; (5) site equipment inventory and maintenance notes; (6) verification required by Metro or CALGreen; (7) definition of systems operations training required per OSHA requirements in the California Code of Regulations, Title 8, Section 5142 and other related regulations; and (8) other applicable resources and documentation.
- > A copy of the signature page or approval correspondence for the approved Commissioning Report. The Commissioning Report shall define the commissioning process activities undertaken through the design and construction phases of the building process for the Project.
- > Provide evidence that the testing and adjusting of systems has been completed.
- > A copy of the signature page or approval correspondence for the approved written plan of procedures for testing and adjusting systems. The plan of procedures for testing and adjusting shall address the following systems: (1) HVAC systems and controls; (2) indoor and outdoor lighting controls; (3) water heating systems; (4) renewable energy systems; (5) landscape irrigation systems; and (6) water reuse systems, if applicable.
- > The signature page or approval correspondence for the approved final report after completion of testing, adjusting, and balancing. The report shall be signed by the individual responsible for performing these services.
- > The signature page or approval correspondence for the approved Operation and Maintenance (O&M) Manual. The O&M Manual shall include: (1) detailed operating and maintenance instruction; (2) copies of guaranties/warranties for each system. The O&M Manual instructions shall be consistent with OSHA requirements in the Code of California Regulations, Title 8, Section 5142, and other regulations.
- > Provide signature pages or approval correspondence for approved inspection verifications and reports required by Metro.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

PLANNING AND DESIGN: ELECTRIC VEHICLE (EV) CHARGING

REGULATORY REQUIREMENTS

Metro Rail Design Criteria 2.1.3

2016 CALGreen Section 5.106.5.3 and Sections 5.106.5.3.1 through 5.106.5.3.3

ELECTRIC VEHICLE (EV) CHARGING SPECIFICATIONS

Metro Rail Design Criteria (MRDC) states the following related to EV charging:

Section 2.1.3 Metro Sustainability and Energy Policy. As it applies to this criteria, all Metro rail projects shall at a minimum:

- > Aggressively pursue renewable energy sources, take advantage of rebates and subsidies for energy and water conservation, wherever feasible, and implement energy conservation measure where they are feasible and fiscally prudent.
- > Construct all new facilities and projects, including new transit corridor projects, using energy-efficiency and conservation strategies. For buildings or structures over 10,000 square feet, projects must be constructed to achieve Leadership in Energy and Environmental Design (LEED®) Silver certification, at a minimum.

2016 CALGreen states the following related to EV charging:

CALGreen Section 5.106.5.3 Electric Vehicle (EV) Charging. [N] Construction shall comply with Section 106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code and as [the following subsections].

CALGreen Sections 5.106.5.3.1 through 5.106.5.3.3. Included in these subsections are specifications for single charging space and multiple charging space requirements.

CALCULATIONS OF EV CHARGING SPACES:

For relevant calculations, 2016 CALGreen states the following:

CALGreen 5.106.5.3.3 EV charging space calculation. [N] Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.

TOTAL NUMBER OF PARKING SPACES	NUMBER OF REQUIRED
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	At least 6 percent of total

1. Calculation for spaces shall be rounded up to the nearest whole number.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

PLANNING AND DESIGN: ELECTRIC VEHICLE (EV) CHARGING *continued*

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit separate plans and calculations for each station addressed in the approved Sustainability Plan as the supporting documentation as part of the Sustainability Plan Monthly Update when the Electric Vehicle Charging Sustainability Element has been defined as complete:

- > A site plan and/or parking plan sheet(s) that indicate the location and type of facilities provided to facilitate future installation of electric vehicle supply equipment (EVSE).
- > Calculations of charging spaces required per Table 5.106.5.3.3.
- > In the event that only a single-charging space is required, provide a plan and details of the required raceway consistent with the specifications in Section 5.106.5.3.1.
- > If multiple charging spaces are required, provide plans and details of the required raceways consistent with the specifications in Section 5.106.5.3.2.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

ENVIRONMENTAL QUALITY: FINISH MATERIAL POLLUTANT CONTROL AND DOCUMENTATION (VOC LIMITS AND OTHER REQUIREMENTS)

REGULATORY REQUIREMENTS

South Coast Air Quality Management District Rule 1168

Metro Rail Design Criteria Sections 6.7 and 6.7.3

2016 CALGreen Sections 5.504.4 and 5.504.4.1 through 5.504.4.6

PROVISIONS FOR CONTROL AND DOCUMENTATION OF FINISH MATERIAL POLLUTANTS

South Coast Air Quality Management District (SCAQMD) Rule 1168 Subsection (c) (<http://www.aqmd.gov/docs/default-source/rule-book/reg-xi/rule-1168.pdf>) provides the requirements for the purposes of reducing emissions of volatile organic compounds (VOC) as a result of the application of adhesives, adhesive bonding primers, adhesive primers, sealants, sealant primers, and any other primers.

Metro Rail Design Criteria (MRDC) Section 6.7 provides basic requirements and criteria established for the finish of Metro Rail System public areas. MRDC Subsections 6.7.3.A through 6.7.3.K provide specific general criteria for finish materials.

2016 CALGreen states the following requirements related to VOC associated with finish material pollutant control and documentation:

Section 5.504.4 Finish material pollutant control. Finish materials shall comply with Sections 5.504.4.1 through 5.504.4.6.

CALGreen Sections 5.504.4.1 through 5.504.4.6 provide specific control methods for adhesives, sealants, caulks, paints and coatings, aerosol paints and coatings, carpet systems, composite wood products, and resilient flooring systems.

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit separate plans, schedules, and other requested documentation for each station addressed in the approved Sustainability Plan as the supporting documentation with the Sustainability Plan Monthly Update when the Finish Material Pollutant Control and Documentation Sustainability Element is defined as complete.

Adhesives, sealants, and caulks

- > Architectural plans, floor plans, room finish schedules, or other information that lists the location, type, and quantities of adhesives, sealants, and caulks to be used on the Project.
- > Evidence that adhesives, sealants, and caulks shall comply with the South Coast Air Quality Management District (SCAQMD) Rule 1168 Volatile Organic Compound (VOC) limits, including compliance with prohibition of defined toxic substances.
- > Evidence that aerosol adhesives and smaller unit sizes of adhesives and sealant or caulking compounds (at quantities defined in Section 5.504.4.1) shall comply with the SCAQMD Rule 1168 VOC limits and/or the California Air Resource Board (CARB) VOC standards and requirements, including compliance with prohibition of certain toxic compounds as defined in California Code of Regulations, Title 17, Section 94507 et seq., whichever is more restrictive.

Paints and Coatings

- > Architectural plans and room finish schedules that list the location, type, and quantities of architectural paints and coatings to be used on the Project.
- > Evidence that architectural paints and coatings shall comply with Volatile Organic Compound (VOC) limits in CALGreen Table 5.504.4.3 and/or South Coast Air Quality Management District (SCAQMD) Rule 1168 VOC limits.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

ENVIRONMENTAL QUALITY: FINISH MATERIAL POLLUTANT CONTROL AND DOCUMENTATION (VOC LIMITS AND OTHER REQUIREMENTS) *continued*

Aerosol Paints and Coatings

- > Plan sheet(s) and other information that list the location, type, and quantities of aerosol paints and coatings to be used on the Project.
- > Evidence that aerosol paints and coatings shall meet the Product-weighted Maximum Incremental Reactivity (MIR) limits for Reactive Organic Compounds (ROC) for certain toxic compounds and ozone depleting substances set forth in the California Code of Regulations, Title 17, Section 94520 et seq.

Carpet Systems

- > Architectural plans, floor plans, room finish schedules, or other information that list the location and the characteristics of all carpet installed in the interior of buildings.
- > Evidence that the carpet shall meet at least one of the testing and product requirements listed in Section 5.504.4.4.
- > Evidence that all carpet cushion installed in the interior of buildings shall meet the requirements of the Carpet and Rug Institute's Green Label program.
- > Evidence that all carpet adhesive shall meet the requirements of CALGreen Table 5.504.4.1.

Composite Wood Products

- > Architectural plans, floor plans, interior or exterior elevations, room finish schedules, and/or other information that indicates the location and types of composite wood products used on the interior or exterior of the buildings.
- > Documentation verifying that the composite wood products shall meet the requirements for formaldehyde as specified in Section 5.504.4.5. This shall include at least one of the documentation options listed in Section 5.504.4.5.3.

Resilient Flooring Systems

- > Architectural plans, floor plans, interior or exterior elevations, room finish schedules, or other information that indicates the location and types of resilient flooring.
- > Documentation verifying that percentage of the floor area receiving flooring meets one of the criteria listed in Section 5.504.4.6.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

WATER EFFICIENCY AND CONSERVATION: LANDSCAPING AND IRRIGATION DESIGN

REGULATORY REQUIREMENTS

Metro Rail Design Criteria 2.12 and 6.6

2016 CALGreen Sections 5.304.1, 5.304.2, 5.304.3, and 5.304.4

REQUIREMENTS

Metro Rail Design Criteria (MRDC) describes ornamental landscaping associated with Metro Rail Projects.

MRDC 2.12.1.B. Ornamental Landscape states the following:

As a result of implementing the Metro Rail Projects, it will be necessary to remove some landscaped areas and street trees. In order to mitigate these losses, the following criteria shall apply:

- > Where existing vegetation must be removed, new landscaping shall be planted where possible and appropriate, the placement and types of which shall be as specified in an established landscaping plan.
- > The selected landscape material shall be drought tolerant and California native, if possible.
- > The landscape plan shall be designed to allow plants to attain their ultimate height and spread, and to minimize maintenance requirements.
- > The landscaping plan shall include a master plant list, which shall call for new vegetation that is designed to conform with the surrounding environment and enhance its visual appeal.
- > The landscape plan shall extend to the system right-of-way, station, parking and public areas, and other areas of fixed system facilities.
- > A program shall be developed, as part of the overall operating procedures for the Metro Rail System, which shall provide for the regular maintenance of landscaping owned by Metro.

The design of landscaping shall be prepared as part of the rail facilities' detailed engineering and included in facilities contract documents. In station areas, landscaping may match the themes of the station adopted by the designer.

MRDC Section 6.6 Landscaping describes in detail the following information for Metro projects:

- > Objectives of the landscape design
- > Coordination of the design team and local agencies
- > Design criteria including plant material that is compatible with the transit system design, maintenance, utilities operation, pedestrian design barriers, and view preservation in right of way
- > Site preparation and irrigation
- > Selection of plant materials including growth rate, environmental adaptability, and soil types
- > Street tree selection and tree protection
- > Entry plazas with planting design that encourages separation of vehicles and pedestrians
- > Station/Park-and-Ride Lots including planting within parking lots and along borders
- > Minimal and simplicity of planting design along Metro Rail At-Grade right of way
- > Minimal maintenance requirements

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

WATER EFFICIENCY AND CONSERVATION: LANDSCAPING AND IRRIGATION DESIGN *continued*

2016 CALGreen provides the following requirements for landscape irrigation:

Section 5.304.1 Scope. The provisions of Section 5.304, Outdoor Water Use reference the mandatory Model Water Efficiency Landscape Ordinance (MWELO) contained within Chapter 2.7, Division 2, Title 23, California Code of Regulations.

Section 5.304.2 Outdoor water use in rehabilitated landscape projects equal to or greater than 2,500 square feet. When water is used for outdoor irrigation for new construction projects with an aggregate landscape area equal to or greater than 500 square feet requiring a building or landscape permit, plan check or design review, one of the following shall apply:

1. A local water efficient landscape ordinance that is, based on evidence in the record, at least as effective in conserving water as the updated model ordinance adopted by the Department of Water Resources (DWR) per Government Code Section 65595 (c).
2. The California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO) commencing with Section 490 of Chapter 2.7, Division 2, Title 23, California Code of Regulations.

Section 5.304.2.1 Outdoor potable water use. For new water service not subject to the provisions of Water Code Section 535, separate meters or sub-meters shall be installed for indoor and outdoor potable water use for landscaped areas of at least 500 square feet but not more than 1,000 square feet (the level at which Section 5.304.2 applies).

Section 5.304.3 Outdoor water use in rehabilitated landscape projects equal to or greater than 2,500 square feet. Rehabilitated landscape projects with an aggregate landscape area equal to or greater than 2,500 square feet requiring a building or landscape permit, plan check, or design review shall comply with Section 5.304.2, Items 1 or 2.

Section 5.304.4 Outdoor water use in landscape areas of 2,500 square feet or less. Any project with an aggregate landscape area of 2,500 square feet or less may comply with the performance requirements of MWELO or conform to the prescriptive compliance measures contained in MWELO's Appendix D.

CALCULATIONS AND TOOLS FOR LANDSCAPING:

The Contractor shall use the following prescriptive measures to assist in compliance. The following tools can be found at: <http://water.ca.gov/wateruseefficiency/landscapeordinance>.

- > DWR's Model Water Efficient Landscape Ordinance
- > A water budget calculator
- > The MWELO prescriptive compliance measure Appendix D

Section 492.4 of the Water Efficient Landscape Worksheet provides the relevant calculations for MWELO at <http://water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf>.

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit separate plans and calculations for each station or stand-alone building addressed in the approved Sustainability Plan as the following supporting documentation as part of the Sustainability Plan Monthly Update when the Landscape and Irrigation Design Sustainability Element has been defined as complete:

- > Landscape plans, irrigation plans, legend, and details that comply with the local water efficient landscape ordinance or the California Department of Water Resources Model Water Efficient Landscape Ordinance (MWELO), whichever is more stringent.
- > Evidence of approved building or landscape permit, plan check, or design review consistent with Section 5.304.2.
- > Provide landscape plans, irrigation plans, legend, and details that comply with the performance requirements of MWELO or conform to the prescriptive compliance measures contained in MWELO's Appendix D.
- > List of the performance requirements of MWELO or the prescriptive compliance measures contained in MWELO's Appendix D that are incorporated into the Project

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

PLANNING AND DESIGN: LIGHT POLLUTION REDUCTION

REGULATORY REQUIREMENTS

Metro Rail Design Criteria 2.7.3, 7.13.1 through 7.13.9, and 7.13.10 (replaces 2016 CALGreen 5.106.8 which requires outdoor lighting system design “comply with a local ordinance lawfully enacted pursuant to Section 101.7, whichever is more stringent.”)

DESIGN AND INSTALLATION OF OUTDOOR LIGHTING SYSTEMS PER MRDC

Requirements:

Per **Metro Rail Design Criteria 2.7.3 Light and Glare**, outdoor lighting systems shall be designed and installed to comply with the following:

Lights used for construction and for operational lighting can illuminate adjacent properties in undesirable ways. Designs will follow the principle of keeping direct and reflected illumination or glare from the project from striking adjacent properties, where feasible. Design should consider least interference from these elements consistent with safe and efficient Rail System Operations.

Station plazas, parking lots, yard area and guideway lighting fixtures and standards shall incorporate directional shielding where needed, to avoid the intrusion of unwanted light and glare into adjacent sensitive land uses, such as residential.

Additionally, **Metro Rail Design Criteria 7.13.1 through 7.13.9** provide requirements for normal and emergency lighting systems. Refer to MRDC 7.13.1 through 7.13.9 for detailed information.

Calculation of Outdoor Illumination Levels:

For relevant calculations, **MRDC 7.13.10** states the following:

- A. Calculations shall conform to the procedures and recommendations in the applicable IES publications (and their appendixes). Calculated values shall be presented on calculated illuminance/exitance summary form 7-A shown herein.
- B. A computer software photometric calculations must be performed for all areas including but not limited to station public areas and egress routes train crossing, etc. to assure competent and thorough lighting design. Photometric drawings with lighting summary and calculations shall be provided.
- C. Illumination levels for work areas shall be calculated at the working plane, generally a horizontal plane set at 2'-6" above the finished floor level, except that for task lighting the actual working height shall be used whenever this information is available.
- D. Illumination levels for walking surfaces, egress paths and security lighting shall be calculated at the surface being illuminated, except as otherwise required by codes or regulations or as specified herein.
- E. An average Light Loss Factor for use in all areas of the transit system lighting other than offices should not exceed 70%.
- F. Reflectance values shall be based, whenever possible, on the actual reflectances of the proposed materials. Generally, material used shall meet the reflectance values tabulated in Tables 7.2 and 7.4 (see below). Where specific reflectances are not available, use appropriate value from IES Standard.

EXCERPT FROM TABLE 7.4 IN MRDC 7.13.10

RECOMMENDED PERCENT REFLECTANCE VALUES FOR OUTDOOR AREAS

SURFACE	% REFLECTANCE VALUE (MINIMUM)
1. Ceiling	10
2. Wall	50
3. Floor	10

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

PLANNING AND DESIGN: LIGHT POLLUTION REDUCTION *continued*

Required Supporting Documentation for Sustainability Plan Monthly Update

The Contractor shall submit separate plans and calculations for each station addressed in the approved Sustainability Plan as the supporting documentation as part of the Sustainability Plan Monthly Update where the Light Pollution Sustainability Element is defined as complete:

- > Photometric plans and calculations reflecting that the outdoor lighting systems shall be designed and installed to comply with the minimum requirement of:
 - The California Energy Code;
 - The Backlight, Uplight and Glare (BUG) ratings as defined in IES TM-15-11; and
 - The allowable BUG ratings not exceeding those shown in CALGreen Table 5.106.8.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

WATER EFFICIENCY & CONSERVATION: METERS, SUBMETERS & METERING DEVICES

REGULATORY REQUIREMENTS

2016 CALGreen Sections 5.303.1, 5.303.1.1, and 5.303.1.2

USE OF WATER METERS, SUBMETERS AND METERING DEVICES FOR WATER CONSERVATION

2013 CALGreen states the following requirements apply to the use of separate meters, sub-meters, or metering devices for conservation of potable water. Metro projects are required to provide separate devices for building utilities, fire protection, and landscaping.

Section 5.303.1. Separate submeters or metering devices shall be installed for the uses described in Sections 5.303.1.1 and 5.303.1.2.

Section 5.303.1.1 New buildings or additions in excess of 50,000 square feet. Separate submeters or metering devices shall be installed as follows:

1. For each individual leased, rented, or other tenant spaces within the building projected to consume more than 100 gal/day (380 L/day), including, but not limited to, spaces used for laundry or cleaners, restaurant or food service, medical or dental office, laboratory, or beauty salon or barber shop.
2. Where separate submeters for individual building tenants are unfeasible, for water supplied to the following subsystems:
 - a. Makeup water for cooling towers where flow through is greater than 500 gpm (30 L/s).
 - b. Makeup water for evaporative coolers greater than 6 gpm (0.04 L/s).
 - c. Steam and hot-water boilers with energy input more than 500,000 Btu/h (147 kW).

Section 5.303.1.2 Excess consumption. A separate submeter or metering device shall be provided for any tenant within a new building or within an addition that is projected to consume more than 1,000 gal/day.

Required Supporting Documentation for Sustainability Plan Monthly Update

The Contractor shall submit separate plans and calculations for each station addressed in the approved Sustainability Plan. The following supporting documentation shall be provided as part of the Sustainability Plan Monthly Update once the water meter, sub-meter and/or metering devices sustainability element has been defined as complete:

- > Utility and landscape plans that show separate sub-meters for domestic utility services, fire services, and landscape irrigation.
- > Landscape plan irrigation legend and details that show sub-meters or metering devices for the irrigation plan.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

PLANNING AND DESIGN: ON-SITE RENEWABLE ENERGY

REGULATORY REQUIREMENTS

Metro Rail Design Criteria 2.1.3.3, 2.1.3.6, and 2.10.4

2016 CALGREEN A5.211.1 AND A5.211.1

Definition of Renewable Energy Sources Per MRDC and 2016 CALGreen

Metro Rail Design Criteria Requirements:

Metro Rail Design Criteria 2.1.3.3 Codes and Standards – Metro Sustainability and Energy Policy. As it applies to this criteria, all Metro rail projects shall at a minimum:

- > Aggressively pursue renewable energy sources, take advantage of rebates and subsidies for energy and water conservation, and implement energy conservation measures where they are feasible and fiscally prudent.
- > Construct all new facilities and projects, including new transit corridor projects, using energy-efficiency and conservation strategies. For buildings or structures over 10,000 square feet, projects must be constructed to achieve Leadership in Energy and Environmental Design (LEED®) Silver certification, at minimum.

Metro Rail Design Criteria 2.10.4 Energy – Green or Renewable Energy.

 This Section states:

To the maximum extent feasible, design and specify the use of on-site non-polluting renewable technologies (such as solar, geothermal, wind, biomass and biogas) and/or the purchase of green or renewable energy from an accredited utility program or equivalent to contribute to the total energy requirements of the project.

2016 CALGreen Requirements:

Section A5.211.1 On-site renewable energy. Use on-site renewable energy sources such as solar, wind, geothermal, low-impact hydro, biomass and bio-gas for at least 1 percent of the electric power calculated as the product of the building service voltage and the amperage specified by the electrical service overcurrent protection device rating or 1kW (whichever greater), in addition to the electrical demand required to meet 1 percent of the natural gas and propane use. The building project's electrical service overcurrent protection device rating shall be calculated in accordance with the 2016 California Electrical Code. Natural gas or propane use is calculated in accordance with the 2016 California Plumbing Code.

Section A5.211.1.1 Documentation. Using a method approved by the California Energy Commission, calculate the renewable on-site energy system to meet the requirements of Section A5.211.1, expressed in kW. Factor in net-metering, if offered by a local utility, on an annual basis.

EVALUATION OF POTENTIAL RENEWABLE ENERGY SOURCES:

Metro shall require, at a minimum, evaluation and comparison of renewable energy technologies that are applicable, feasible, and practicable for use in the project using the following criteria:

- > Cost
- > Environmental Benefit
- > Land Use Efficiency
- > Peaking Shaving Benefit
- > Hedging Benefit
- > Local Content Use

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

PLANNING AND DESIGN: ON-SITE RENEWABLE ENERGY *continued*

METHODOLOGY FOR RENEWABLE ENERGY SCREENING :

For energy screening, Chapter 6 and Appendix E: Renewable Energy Screening Tool (REST) of Metro's Energy Conservation and Management Plan¹ shall be utilized. Chapter 6 and Appendix E provide details for assessment and list resources to be used. REST provides six categories that should be evaluated across one or more metrics that indicate how each project would perform relative to baseline utility electricity (for renewable electricity project) or natural gas (for solar water heating projects that displace natural gas).

The outcomes (e.g., cost savings or emissions reductions) for each screening factor are assigned point values to make the results comparable across each of the categories. The number of points assigned to each outcome reflects the system's performance relative to a chosen maximum and minimum performance level.

Finally, a weighting was applied to each category's score based on the assumed importance of that category. The starting category weights are based on the collected experience of large renewable project hosts such as Metro. Metro can adjust these values to reflect its current and future renewable program priorities. A renewable project's weighted scores for each category are added, giving a final total score. The total score provides a measure of the project's performance relative to an assumed maximum. An example REST summary for a renewable project is provided below. Appendix E2 shows how the Excel evaluation tool developed to support this screening process, REST, allows the user to compare the system performance metrics and weighted scores for up to 4 potential renewable energy projects side-by-side simultaneously.

Once a renewable energy technology is selected, it shall be compared with baseline energy supply for life-cycle benefits and costs to determine whether to proceed with the renewable energy technology for the project. Metro will use green power when/where available and priced competitively with other energy sources.

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit separate plans and calculations for each station addressed in the approved Sustainability Plan with the following supporting documentation as part of the Sustainability Plan Monthly Update where the On-site Renewable Energy Sustainability Element is defined as complete:.

- > Evidence that the Project will use on-site renewable energy as specified in Section A5.211.1.
- > Supporting calculations to meet the requirements of A5.211.1.
- > Evidence of participation in the local utility's renewable energy portfolio program that has a minimum of 50% electrical power from renewable sources.

¹ Los Angeles County Metropolitan Transportation Authority, Energy Conservation and Management Plan, Los Angeles, September 2011.

http://media.metro.net/projects_studies/sustainability/images/Sustainability_Report_Energy_Conservation_Plan.pdf

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

MATERIAL CONSERVATION & RESOURCE EFFICIENCY: RECYCLING BY OCCUPANTS

REGULATORY REQUIREMENTS

2016 CALGreen Sections 5.410.1 and 5.10.1.1

PROVISIONS FOR RECYCLING BY OCCUPANTS

2016 CALGreen states the following related to recycling by occupants. Due to the lack of space at the Metro stations to address the on-site recycling waste storage requirements, recycling by occupants typically includes Metro buildings for employees.

Section 5.410.1 Recycling by occupants. Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of nonhazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics, organic waste, and metals or meet a lawfully enacted local recycling ordinance, if more restrictive.

Section 5.410.1.1 Additions. [A] All additions conducted within a 12-month period under single or multiple permits, resulting in an increase of 30 percent or more in floor area, shall provide recycling areas on site.

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit separate plans and calculations for each station addressed in the approved Sustainability Plan with the following supporting documentation as part of the Sustainability Plan Monthly Update when the Recycling by Occupants Sustainability Element is defined as complete:

- > Site plan, floor plan, and/or detail plan sheet(s) that indicate recycling areas for depositing, storage, and collection of nonhazardous materials for recycling.
- > If the local ordinance is more restrictive, provide plans that document the required facilities per the requirements.
- > For additions to a Project that occurs with a 12-month period, and results in an increase of 30 percent or more of floor area, provide site plan, floor plan, and/or detailed plan sheet(s) that indicate recycling areas.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

ENERGY EFFICIENCY: SOLAR POTENTIAL

REGULATORY REQUIREMENTS

Metro Rail Design Criteria 2.1.3, 2.1.3.3, 2.10.1, 2.10.4, and 2.10.6

CALCULATIONS OF SOLAR POTENTIAL

Requirements:

Metro Design Criteria 2.1.3.1 Metro Environmental Policy requires:

All Metro Rail Projects shall consider, as a minimum, the following strategies to demonstrate its commitment to planning and constructing our projects, operating and maintaining our facilities and vehicles, and procuring products and services consistent with State and Federal laws and regulations and in a manner that protects human health and the environment but not neglecting the efficient delivery of quality public transit services within our financial ability:

- > Comply with all environmental, Federal, State, and local laws and regulations;
- > Avoid environmental degradation by minimizing releases to air, water, and land;
- > Prevent pollution and conserve resources by reducing waste, reusing materials, recycling, and preferentially procuring for environmentally-friendly products and materials;
- > Ensure that the planning, design, construction, and operation of our facilities and services consider environmental protection and sustainable features; and
- > Consider alternative energy solutions such as promoting and tapping renewable energy sources to address energy and environmental challenges.

Metro Design Criteria 2.1.3.3 Metro Sustainability and Energy Policy requires:

As it applies to this criteria, all Metro rail projects shall at a minimum:

- > Aggressively pursue renewable energy sources, take advantage of rebates and subsidies for energy and water conservation, wherever feasible, and implement energy conservation measures where they are feasible and fiscally prudent.
- > Construct all new facilities and projects, including new transit corridor projects, using energy-efficiency and conservation strategies. For buildings or structures over 10,000 square feet, projects must be constructed to achieve Leadership in Energy and Environmental Design (LEED®) Silver certification, at minimum.

Metro Design Criteria 2.10.1 Project Planning and Design requires Metro project planning and design:

To the maximum extent feasible, prepare and implement a comprehensive resource management plan for the integrated consideration of energy resources with the goal of identifying, evaluating, and optimizing its use for the project. Incorporate sustainable design measures to maximize the project's efficient use of energy.

Metro Design Criteria 2.10.4 Green or Renewable Energy requires:

To the maximum extent feasible, design and specify the use of on-site non-polluting renewable technologies (such as solar, geothermal, wind, biomass and biogas) and/or the purchase of green or renewable energy from an accredited utility program or equivalent to contribute to the total energy requirements of the project.

Metro Design Criteria 2.10.6 Energy Conservation requires:

To the maximum extent feasible, conservation features and operating procedures shall be incorporated into the operating systems and subsystems as part of the final design activities to reduce energy consumption. Install an Energy Management System, where applicable.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

ENERGY EFFICIENCY: SOLAR POTENTIAL *continued*

CALCULATION OF SOLAR POTENTIAL:

ECSD Evaluation: Solar Potential for Stations

- > Prepare analysis using LA County Solar Planning Tool <http://solarmap.lacounty.gov/>
- > Sites with “good” solar loading on-site, or on adjacent 1-2 story buildings, are considered “GOOD”.
- > Metro requests that station sites considered “GOOD” to be evaluated further by Contractor in accordance with Metro Energy Policy per MRDC 2.10.4 and 2.10. 6. The analysis needs to:
 - Provide the roof area of the station canopy and estimate of solar energy generating potential; and consider future development currently designed for surrounding parcels. Station canopies at “GOOD” sites are also required to be “solar ready” per the City of Los Angeles CALGreen Section 5.211.1.
- > Metro requests the conclusions of the solar potential analysis be incorporated into the Comprehensive Energy Resource Management Plan required per MRCD 2.10.1. The plan should address all stations, including those not recommended for solar, and include solar maps and other supporting documentation.

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN AND MONTHLY UPDATE:

Contractor shall submit the following supporting documentation:

- > A report that summarizes the evaluation, design, and specification of the use of on-site non-polluting renewable technologies (such as solar, geothermal, wind, biomass and biogas) and/or the purchase of green or renewable energy from an accredited utility program or equivalent. Included in the report are the potential site locations and technologies based on project characteristics. The report shall indicate findings and alternatives for the project, the amount of annual electricity generation, and life-cycle costs analysis (LCCA) data. This report will demonstrate how the total energy requirements of the project as required by Metro’s Renewable Energy Policy and CALGreen.
- > Contractor shall provide a report with calculations that present the alternatives and associated life-cycle cost analysis (LCCA), per Section 3.05. The LACMTA recognizes that renewable energy applications may precede energy efficiency retrofits if upfront cost and life-cycle benefits of renewable energy applications significantly outweigh those of energy efficiency retrofits.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

PLANNING AND DESIGN: STORMWATER DRAINAGE

REGULATORY REQUIREMENTS

Metro Rail Design Criteria (MRDC) 3.8

Storm drainage system design shall be in conformance with the requirements of the Agency having jurisdiction.

2016 CALGreen Section 5.106.1

Comply with a lawfully enacted stormwater management and/or erosion control ordinance.

City of Los Angeles Ordinance No. 181899 – Low Impact Development (LID) Strategies:

Many cities and counties in southern California have more stringent requirements than the above mentioned Metro Design Rail Criteria and CALGreen Measures and is therefore the governing regulation. For example, the City of Los Angeles' Ordinance No. 181899 is more stringent. Drainage systems designs must manage and capture stormwater runoff to the maximum extent feasible through, in order of priority: infiltration, evapotranspiration, capture and use, and treatment with a high removal efficiency biofiltration/biotreatment system.

CALCULATION OF STORMWATER RUNOFF

Hydrology:

Surface hydrology and aerial construction shall be based upon standards and methods of computation used by the LA County Department of Public Works and the City of LA Bureau of Engineering Design Standards.

> Underground Sections in Earth designed to exclude groundwater and shall be based on the formula $q = a + L$.

(a) q = Volume of water, in gal/min

(b) a = Horizontal projected area of all subway openings in square feet, i.e., station entrances, fan shafts, etc.

(c) L = Linear feet of structure in the drainage system

> Underground Sections in Rock designed to collect groundwater to relieve hydrostatic pressure and shall be based on the formula $q = a + L$.

(d) q = Volume of water, in gal/min

DESIGN STORM DRAINAGE AREA	STORM FREQUENCY
All culverts and drainage crossing the rail system where flooding could damage system	50-year
Track Roadbed (to top of subballast)	10-year
Main storm drains	10-year
Parking lots	10-year
All longitudinal drains or subdrains that could flood the roadbed	10-year
All sump condition areas (defined as a low area which prevents the free passage of water with consequent flooding of streets of Private property)	50-year
All other areas	50-years

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

PLANNING AND DESIGN: STORMWATER DRAINAGE *continued*

RAINFALL INTENSITY:

For calculation of design flows, Rainfall Intensity (I) shall be determined using procedures outlined in the LA County Department of Public Works Hydrology Manual, where:

$$\text{Intensity} = \frac{\text{Rain Depth}}{\text{Duration}}$$

RAINFALL INTENSITY CALCULATIONS FOR VARIOUS DURATIONS														
	Storm Time (minutes)	0	5	10	15	20	25	30	35	40	45	50	55	60
	Cumulative Precipitation (in)	0	0.5	1.5	2.0	2.25	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Duration (in/hr)	15	-	6.0	12.0	6.0	3.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	110	-	-	9.0	9.0	4.5	3.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
	130	-	-	-	-	-	-	5.0	4.0	2.0	1.0	0.5	0.0	0.0
	160	-	-	-	-	-	-	-	-	-	-	-	-	2.5

SURFACE DRAINAGE:

MRDC 3.8 provides specifications for the following surface drainage areas:

- > Plaza Area Drainage shall have a minimum grade of 0.3 percent and a maximum grade of 2.0 percent in open plaza areas. Maximum water surface over drains shall be 1/2 inch. Maximum water velocity in plaza areas shall be 2 feet per second. Special drains shall be installed where necessary.
- > Parking Lot Drainage shall have a minimum grade of 0.3 percent, and shall not run for more than 75 feet before being intercepted by a drainage structure such as a gutter or a drain. The maximum flow (flood width) in a parking area gutter shall not exceed 12 feet before being collected in a drainage system.
- > Street Drainage shall be designed such that water surface remains below the top of the curb and does not flow more than 1/2 inch deep in the traveled way (the lane beginning 8 feet away from the curb face).
- > Trackway Drainage shall consist of storm drainage systems along all trackways and at all yards. Yard trackwork areas shall be underlain by a minimum 6-inch layer of semi-impervious subballast and graded to a minimum slope of 24:1 to the subdrains. Open surface track and material storage areas shall be covered by an 8-inch layer of semi-impervious compactable material and shall be graded to a minimum slope of 24:1.
 - (a) Cleanouts shall be provided at the terminus of each subdrain. Mainholes shall be provided at maximum intervals of 300 feet on laterals and main collectors, and at junctions shall be provided on angle points greater than 10 degrees. Individual subdrain runs shall not be longer than 300 feet.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

PLANNING AND DESIGN: STORMWATER DRAINAGE *continued*

DRAINAGE STRUCTURES

Drainage structures shall be designed in order to satisfy the conditions. The use of agency standards is permissible.

- > Parking Lot Drainage Structures shall be constructed based on the standard storm drains for the jurisdiction in which the parking lot is to be constructed.
- > Inlets shall be provided to intercept surface drainage. Inlets on grade shall be designed to intercept 85% or more of the design flow, while inlets in sump areas shall be designed to intercept 100% of the design flow. The amount of flow to be intercepted by individual inlets shall be determined through the procedures outlined in the Federal Highway Administration's Hydraulic Circular No. 12 HEC-12 and HEC-22.

STORM DRAINS:

Storm drain systems may vary as the circumstances require:

- > Closed Conduit drainage systems will consist of a main line with a minimum size of 24 inches and a catch basin connector pipe with a minimum size of 18 inches. Storm drains which run greater than 100 feet shall use, at a minimum, a 24 inch reinforced concrete pipe (RCP).
 - (a) Hydraulic design specifications are provided in the LA County Flood Control District Hydraulic Design Manual. Materials are provided in MRDC 3.8.7.2.
- > Open Channel drainage systems shall be designed based on the Criteria for Hydraulic Design: Open Channels, of the LA County Flood Control District Hydraulic Design Manual.

FLOOD CONTROL:

Design of the transit system shall include an analysis of the potential for flooding near transit facilities. The analysis should consider flood sources such as storm surge river flooding, flood control channels, storm drainage systems, and surface flows. The Designer shall perform the analysis early in the design process and submit the analysis, together with recommendations for protecting the transit facilities from flooding, to Metro for approval.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX D

Sustainability Information Sheet

MATERIAL CONSERVATION & RESOURCE EFFICIENCY: WEATHER PROTECTION AND MOISTURE CONTROL

REGULATORY REQUIREMENTS

2016 CALGreen Sections 5.407.1, 5.407.2, 5.407.2.1, 5.407.2.2, 5.407.2.2.1, and 5.407.2.2.2

CONTROL MEASURES FOR WEATHER PROTECTION AND MOISTURE CONTROL

2016 CALGreen states the following related to weather protection and moisture control:

Section 5.407.1 Weather protection. Provide a weather-resistant exterior wall and foundation envelope as required by California Building Code, Section 1403.2 (Weather Protection) and California Energy Code, Section 150 (Mandatory Features and Devices), manufacturer's installation instructions or local ordinance, whichever is more stringent.

Section 5.407.2 Moisture control. Employ moisture control measures by the following methods.

Section 5.407.2.1 Sprinklers. Design and maintain landscape irrigation systems to prevent irrigation spray on structures.

Section 5.407.2.2 Entries and openings. Design exterior entries and/or openings subject to foot traffic or wind-driven rain to prevent water intrusion into buildings as follows.

Section 5.407.2.2.1 Exterior door protection. Primary exterior entries shall be covered to prevent water intrusion by using nonabsorbent floor and wall finishes within at least 2 feet around and perpendicular to such openings plus at least one of the following:

1. An installed awning at least 4 feet in depth.
2. The door is protected by a roof overhang at least 4 feet in depth.
3. The door is recessed at least 4 feet.
4. Other methods which provide equivalent protection.

Section 5.407.2.2.2 Flashing. Install flashings integrated with a drainage plane.

REQUIRED SUPPORTING DOCUMENTATION FOR SUSTAINABILITY PLAN MONTHLY UPDATE

The Contractor shall submit separate plans and details for each station addressed in the approved Sustainability Plan as the supporting documentation as part of the Sustainability Plan Monthly Update where the Weather Protection and Moisture Control Sustainability Element has been defined as complete:

- > Building plans and details that indicate the provision of a weather-resistant exterior wall and foundation envelope.
- > Landscape irrigation plans and details that show prevention of irrigation spray on Project building(s) and other methods of moisture control.
- > Building plans, elevations, and details that show prevention of water intrusion into the building(s) through the entries and openings with exterior door protection and flashing.

BASED ON 2016 CALGREEN REQUIREMENTS

APPENDIX E

Local Jurisdictions – Sustainability Requirements

E-1 City of Los Angeles

E-2 County of Los Angeles

E-3 City of Beverly Hills

APPENDIX E

Local Jurisdictions – Sustainability Requirements

BEVERLY HILLS DOCUMENTS:

Beverly Hills Sustainable City Plan, February 2009

> [Beverly Hills Sustainable City Plan \(2009\).pdf](#)

Beverly Hills Economic Sustainability Plan, Programs and Priorities 2011-2015, 2011

> [Beverly Hills Economic_Sustainability_Plan_FINAL_2011-2015.pdf](#)

INGLEWOOD DOCUMENTS:

Inglewood Energy and Climate Action Plan, March 2013

> [Inglewood Energy and Climate Action Plan \(ECAP\) 2013.pdf](#)

City of Inglewood Energy Efficiency Climate Action Plan, December 2015

> [Inglewood Energy Efficiency Climate Action Plan 2015.pdf](#)

Final Draft 2015 Urban Water Management Plan. August 2016

> [Inglewood Urban Water Management Plan 2015.pdf](#)

Inglewood and Lennox Greening plan 2016

> https://www.treepeople.org/sites/default/files/pdf/publications/Inglewood%20Lennox%20Greening%20Plan_Digital.pdf

COUNTY OF LOS ANGELES DOCUMENTS:

CCAP Implementation Ordinances 2017 / Project No. 2017-003637-(1-5), RPPL201600293

> February 28, 2017 Draft Ordinance

CITY OF LOS ANGELES DOCUMENTS:

Sustainable City Plan, 2015

> <http://plan.lamayor.org/>

South LA Green Alleys Master Plan

> <http://www.lastormwater.org/green-la/south-la-green-alley-master-plan/>

Green Street & Green Alleys Design Guidelines Standards

CITY OF SANTA MONICA DOCUMENTS:

Sustainable City Plan, City of Santa Monica, Updated 2014

> <https://www.smgov.net/uploadedFiles/Departments/OSE/Categories/Sustainability/Sustainable-City-Plan.pdf>

City of Santa Monica Urban Watershed Management Program, Working for a Cleaner Bay (user-friendly primer)

> https://www.smgov.net/uploadedFiles/Departments/OSE/Categories/Urban_Runoff/UR_Brochure.pdf

Metro Green Places Toolkit, 2016

> <https://www.metro.net/interactives/greenplaces/>

Metro Complete Streets Policy, 2014

> http://media.metro.net/projects_studies/sustainability/images/policy_completestreets_2014-10.pdf

First, Last Mile Strategic Plan, 2014

> http://media.metro.net/docs/First_Last_Mile_Strategic_Plan.pdf

REGIONAL DOCUMENTS:

SCAG Sustainability Program

> <http://www.scag.ca.gov/programs/Pages/Programs/Sustainability.aspx>

South Coast Air Quality Management Plan, 2016

> <http://www.aqmd.gov/home/library/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>

California Model Water Efficient Landscape Ordinance, 2015 Update

> <http://www.water.ca.gov/wateruseefficiency/landscapeordinance/docs/2015%20MWELO%20Guidance%20for%20Local%20Agencies.pdf>

Los Angeles Enhanced Watershed Management Plans

> https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/

APPENDIX E

Local Jurisdictions – Sustainability Requirements

CITY OF LOS ANGELES

ORDINANCE NO.	ORDINANCE EFFECTIVE DATE	MUNICIPAL CODE SECTION	SUMMARY DESCRIPTION OF ORDINANCE
No. 174706	September 1, 2002	Sections 66.32 through 66.32.8	Added Sections 66.32 through 66.32.8 to the Los Angeles Municipal Code related to the collection of solid waste and the imposition of certain Assembly Bill (AB) 939 compliance fees on private waste haulers. In order to meet AB 939 diversion goals and the City of Los Angeles goal of 70% by the year 2020, private waste haulers are required to register with the City and display a permit decal and number issued by the City through the Department of Public Works, Bureau of Sanitation. Based on gross receipts of solid waste collected, private waste haulers are required to pay an AB 939 compliance fee. This program is intended to maintain an open and competitive market for all companies providing solid waste and disposal services in the City.
No. 181480	December 27, 2010	Article 9, Chapter IX	Added Article 9 to Chapter IX of the Los Angeles Municipal Code to incorporate various provisions of the 2010 California Green Building Standards Code (CALGreen Code). This addition, known as the Los Angeles Green Building Code, adopts by reference the CALGreen Code except as further amended by the Ordinance in Article 9. Article 9 was further amended by Ordinance No. 182849 on January 1, 2014 by incorporating portions of the 2013 Edition of the CALGreen Code as summarized below.
No. 181519	February 12, 2011	Article 6, Chapter VI	Amended Article 6 of Chapter VI of the Los Angeles Municipal Code to require that construction and demolition waste be taken to a certified construction and demolition waste processing facility. The ordinance addresses the requirement for solid waste haulers, contractors, and recyclers to register to obtain a permit to assist the City to reach the Assembly Bill 939 and City of Los Angeles goal of a total of 70% diversion by the year 2013. Article 6 was further amended by Ordinance No. 182986 summarized below.
No. 181899	October 14, 2011	Article 4.4, Chapter VI	Amended Article 4.4 of Chapter VI of the Los Angeles Municipal Code to expand the applicability of the existing Standard Urban Stormwater Mitigation Plan (SUSMP) requirements by imposing rainwater Low Impact Development (LID) strategies on projects that require building permits. Further amends Article 1 of Chapter IX of the Municipal Code to collect fees to recover Bureau of Sanitation costs of administering provisions of the ordinance. The purpose of the ordinance includes rainwater harvesting and stormwater runoff management, water conservation, and recycled water reuse and grey water use, which are key elements of the City's "Water Supply Action Plan" and essential to ensuring sustainable development.
No. 182386	March 13, 2103	Sections 12.03, 12.21, and 12.21.1	Amended Sections 12.03, 12.21, and 12.21.1 of the Los Angeles Municipal Code to extend bicycle parking requirements to some multi-family residential developments; to increase the levels of bicycle parking required under the current code for new developments and additions to commercial, institutional, and industrial uses; to expand bicycle parking requirements to include commercial, industrial, and manufacturing uses of less than 10,000 square feet; to define acceptable locations for bicycle parking; to require that both short-term and long-term bicycle parking be provided; to improve design standards; to amend the amount of bicycle parking that may be substituted for automobile parking; and to provide rules for the installation of bicycle parking within the public right-of-way by private businesses.
No. 182514	June 3, 2103	Section 85.04, Chapter VIII	Amend Section 85.04 of Chapter VIII of the Los Angeles Municipal Code to authorize the Department of Transportation to establish bicycle infrastructure zones to provide facilities for the parking of bicycles and amenities for a bikeshare operation on public streets. This includes the set aside of space in the public right-of-way for the use of the parking or sharing of bicycles, provided that the installation of such accommodates pedestrians and complies with the Americans with Disabilities Act (ADA).
No. 182847	January 3, 2014	Article 4, Chapter IX	Amended Article 4 of Chapter IX of the Los Angeles Municipal Code and incorporated by reference, with certain exceptions, the 2013 Edition of the California Plumbing Code (CPC).
No. 182849	January 1, 2014	Amended Article 9, Chapter IX	Amended certain provisions of Article 9 of Chapter IX of the Los Angeles Municipal Code to reflect local administrative changes and incorporate by reference portions of the 2013 edition of the California Green Building Standards Code (CALGreen Code). The ordinance includes Table A5.602 that provides a checklist for nonresidential buildings and reflects mandatory and voluntary (with Tiers 1 and 2) CALGreen Code commitments.
No. 182851	January 3, 2014	Article 3, Chapter IX	Amended certain provisions of Article 3 of Chapter IX of the Los Angeles Municipal Code to reflect local administrative changes and incorporate by reference portions of the 2013 Edition of the California Electrical Code (CEC).

APPENDIX E

CITY OF LOS ANGELES *continued*

ORDINANCE NO.	ORDINANCE EFFECTIVE DATE	MUNICIPAL CODE SECTION	SUMMARY DESCRIPTION OF ORDINANCE
No. 182986	May 28, 2014	Article 6, Chapter VI	Retitled and amended Article 6 of Chapter VI of the Los Angeles Municipal Code relating to solid waste from commercial uses and multi-family dwellings. The ordinance addresses: solid waste services, collection, and container specifications; solid waste services required; solid waste disposal facility franchises or contracts, operation, franchise fees and provisions; and proof of solid waste collection service. In order to meet the diversion goals of AB 939 and the City of Los Angeles, which is Zero Waste by 2025, solid waste haulers, contractors, and recyclers are required to register with the City to obtain an AB 939 Compliance Permit. The ordinance also discusses the City's "RENEW LA Plan" in which the City commits to reaching Zero Waste by diverting 70% of the solid waste generated in the City by 2013, diverting 90% by 2025, and becoming a Zero Waste City by 2030. Further, the ordinance defines the exclusive, competitive franchise system for collection, transportation, and processing of commercial and multi-family solid waste to aid the City in meeting its diversion goals.
No. 183833	October 3, 2015	Article 4.4, Chapter VI	Amends Article 4.4 of Chapter VI of the Los Angeles Municipal Code, entitled "Stormwater and Urban Runoff Pollution Control," to meet the requirements of the Municipal Separate Storm Sewer (MS4) Permit and to make the Article consistent with other existing ordinances. The Watershed Protection Program (Stormwater Program) for the City of Los Angeles is managed by the Bureau of Sanitation along with all City Flood Protection and Pollution Abatement (Water Quality) Programs including regulatory compliance, implementation, operations, reporting, and funding. The Article, as amended, provides requirements and prohibitions for discharges and places of discharge into the storm drain system and receiving waters necessary to adequately enforce and administer all federal and state laws, legal standards, orders, and/or special orders that provide for the protection, enhancement, and restoration of water quality.
No. 184248	June 6, 2016	Articles 4 and 9, Chapter IX	Amended certain provisions of Articles 4 and 9 of Chapter IX of the Los Angeles Municipal Code to establish citywide water efficiency standards and require water-saving systems and technologies in buildings and landscapes to conserve water and reduce water usage. The ordinance addresses many sustainability commitments including indoor and outdoor water use and water reuse systems (grey water and recycled water in fixtures).
No. 184250	May 3, 2016	Article 1, Chapter XII	Amended Article I of Chapter XII of the Los Angeles Municipal Code to clarify prohibited uses and modify certain water conservations requirements of the Water Conservation Plan adopted in 1990 for the of the City of Los Angeles. Because of the conditions in the City of Los Angeles, in areas in the State of California, and elsewhere from which the City obtains its water supplies, it is required that the available water resources be put to the maximum beneficial use and that waste and unreasonable use of water be prevented. The Amended Article, known as The Emergency Water Conservation Plan, provides provision to significantly reduce the consumption of water over an extended period of time through the implementation of mandatory water conservation phases.
No. 184692	January 1, 2017	Amended Article 9, Chapter IX	Amended certain provisions of Article 9 of Chapter IX of the Los Angeles Municipal Code to incorporate by reference certain portions of the 2015 International Building Code and the 2016 edition of the California Green Building Standards Code (CALGreen Code). In addition, make local administrative, climatic, geologic, and topographical changes to Article 9.

Source: City of Los Angeles, City Clerk, <https://cityclerkconnect/index>, October 2106.

APPENDIX E

Local Jurisdictions – Sustainability Requirements

COUNTY OF LOS ANGELES

ORDINANCE NO.	ORDINANCE EFFECTIVE DATE	MUNICIPAL CODE SECTION	SUMMARY DESCRIPTION OF ORDINANCE
Ord. 2016-0058 (2016)	January 1, 2017	Title 31 California Green Building Code, Chapter 2 through 8, Appendix A4 and Appendix A5	Adopted the California Green Building Standards Code 2016. Major amendments and changes include: In Section 4, added language to Section 301.1 - 301.3 to include construction of low and high-rise structures. Language was also added to Section 301.3.3 to include Nonresidential buildings greater than or equal to 25,000 square feet. In addition to the requirements of Section 301.1, any newly constructed nonresidential building greater than or equal to 25,000 square feet, shall comply with Section A5.601.2.4 Tier 1. High-rise residential buildings of seven stories or greater shall comply with Table A4.106.5.1(3) in lieu of Table A5.106.11.2.2. In Section 7, added Section 5.106.2 Low Impact development (LID) that states: New development or alterations to existing developed sites shall comply with Chapter 12.84 of Title 12 of the Los Angeles County Code. In Section 9, amended Section 5.408 Construction Waste Reduction, Disposal and Recycling to include 5.408.1 Construction waste management which states: Newly-constructed projects and additions and alterations to existing buildings shall recycle and/or salvage for reuse a minimum of 65 percent of the non-hazardous construction and demolition debris or meet local construction and demolition waste management ordinance, whichever is more stringent. Calculate the amount of materials diverted by weight or by the volume, but not by both. The Los Angeles County Code also removed language for 5.408.1.1 through 5.408.3.
Ord. 2016-0054	January 1, 2017	Title 27, Electrical Code	The provisions of the Los Angeles County Electrical Code shall apply to the installation of electrical systems, including but not limited to, alteration, repair, replacement, equipment, appliances, fixtures and appurtenances.
Ord. 2016-0055	January 1, 2017	Title 28, Plumbing Code	The provisions of the Los Angeles County Plumbing Code shall apply to the installation, alteration, repair, and replacement of plumbing systems, including equipment, appliances, fittings, and appurtenances to a water or sewage system.
Ord. 2016-0056	January 1, 2017	Title 29, Mechanical Code	The provisions of the Los Angeles Mechanical Code shall apply to the installation, alteration, repair, and replacement of mechanical systems, including equipment, appliances, fixture, fittings and or appurtenances including ventilating, heating, cooling, air conditioning, and refrigeration systems, incinerators, and other energy related systems.
Ord. 2016-0059	January 1, 2017	Title 33, Building Code	The provisions of the Los Angeles County Building Code, as applicable, shall apply to the construction, alteration, enlargement, repair, use and occupancy, location, maintenance, removal, and demolition of every structure or any appurtenances connected or attached to such buildings or structures.
Ord. 2013-0001	2013	Title 22, Division 1, Chapter 22, 22.52.1225	Bicycle requirements.
	Currently being Drafted	Draft Title 22, Cool Roof Ordinance	Currently under development. Estimated to go into effect January 2018.
	Currently being Drafted	Draft Net Zero Water Ordinance	Currently under development. Estimated to go into effect July 2018.

Source: County of Los Angeles, August 2017 and EW Consulting August 2017.

APPENDIX E

Local Jurisdictions – Sustainability Requirements

CITY OF BEVERLY HILLS

ORDINANCE NO.	ORDINANCE EFFECTIVE DATE	MUNICIPAL CODE SECTION	SUMMARY DESCRIPTION OF ORDINANCE
Ord. 16-0-2719	January 20, 2017	Article 11, 9-1-1101, 9 -1-11-2	Adopted the California Green Building Standards Code 2016. Amendments and changes included: City of Beverly Hills added Section 102.1.1 that requires electronic documents submittal. Section 202 was revised to add Sustainability definition. Table 5.106.5.3.3 also amended to increases the number of required cars from 0 to 1 for 0-9 parking spaces. The City of Beverly Hills also added Section 5.106.11 Prewiring for Future Solar and 5.106.12 Off-Grid Prewiring For Future Solar. Other amended new sections include Section 5.304.7 Metering Outdoor Water Use and Section 5.305 Water Systems (including 5.305.1 Cooling Towers, 5.305.1.1 Existing Buildings, and 5.305.1.2 New Buildings).
Ord. 93-0-2164	March 19, 1993	Article 3, 10-7-301	Provides Transportation Demand and Trip Reduction measures that includes bicycle requirements.

Source: City of Beverly Hills, August 2017 and EW Consulting, August 2017.

APPENDIX F

Contractor's Monthly Submittal Forms

F-1 Monthly Submittal Review Form

F-2 Monthly Sustainability Plan Element Checklist

APPENDIX F

Contractor's Monthly Submittal Forms

MONTHLY SUBMITTAL REVIEW FORM



WESTSIDE PURPLE LINE EXTENSION #2 - SUBMITTAL REVIEW FORM/RESUBMITTAL/FINAL DISPOSITION

CONTRACT NO.	Contract xyz
CONTRACTOR SUB NO.:	
METRO SUB NO.:	CM 123
TITLE:	Sustainability Plan Progress Update - June 2017

REVIEWER:	Metro PM
TECHNICAL DISCIPLINE:	Sustainability/ Environmental
% DESIGN STAGE:	10%
DATE	6/30/17
DISPOSITION:	Approved As Noted

*Initial Response Code: 1-Incorporation Planned Next Submittal; 2-Discussion/Clarification; 3- Not Applicable; 4-Input/Direction Req'd from Others
 **CRM Response Code: 1-Incorporation Planned Next Submittal; 3- Not Applicable; 4-Input/Direction Req'd from Others; 5-Under separate submittal
 ***Critical-Place a CI (Critical in the Crit. Column). This comment may have a significant cost impact.
 ****Status Code: C - Complete R-Resolved; U-Unresolved

To be completed by Reviewer									To be completed by Contractor				To be completed by Reviewer				
Review Comments									Initial Response		Comment Resolution Meeting		Final Disposition				
No.	Reviewer	Metro/Agency /3rd Party	Comment Date	Sustainability Plan Page No.	CALGreen Category/ Sustainability Topic	Contract Document Reference	Submittal Document Type for Review (Dwg./Spec/ Calc) Report)	Comment	Initial Response Code *	Critical ***	Responder	Comment Review Meeting Actions/ Response	CRM Response Code **	Status Code ****	Status Date	Initial	Additional Notes

APPENDIX G

Annual Reporting to Metro Executive Board

G-1 Annual Report Card

G-2 Contractor's Self Reporting of Achievements

APPENDIX G

Annual Reporting to Metro Executive Board

ANNUAL REPORT CARD

TO Metro Design Build (D/B) Team
FROM Rick Clark, Metro Program Management
Cris Liban, Metro Environmental Compliance and Sustainability Section
RE: Sustainability Plan Annual Board Report Data Request
DATE March 24, 2017

PURPOSE

The purpose of this data request is to collect information for each project related to sustainable activities, as defined by Specification 01 35 63. In addition, Metro would like to know if the D/B team has gone above and beyond the CalGreen requirements, local ordinances, and/or their Sustainability Plan commitments. This information will be included in a Board Update this Spring. Below is the information being requested of each team:

I. TOP FIVE SUSTAINABLE ACTIVITIES COMPLETED THIS YEAR

Please provide details of and/or describe the top five sustainable activities completed by your D/B team for the 2016 year. Indicate why each effort is of significance and a notable accomplishment. Of particular interest are those activities that exceeded contract requirements, which include MRDC and CalGreen requirements. Please submit this information under separate cover.

1. _____
2. _____
3. _____
4. _____
5. _____

II. RENEWABLE ENERGY

Under separate cover, please provide a description and/or results of the renewable energy analysis. Please indicate what type of renewable energy is planned for the project.

III. CALGREEN COMPLIANCE REPORT CARD

Attached is a blank CalGreen Report Card that was completed for each project last year. Please work with your ENV PM using last year's information as a starting point to minimize your effort. If your project is new, your ENV PM will be able to assist in data compilation and input for reporting.

IV. QUANTIFICATION OF SUSTAINABLE EFFORTS

Please summarize the following with metrics for your project:

- > Number of bicycle spaces. Please include the number of lockers in addition to the spaces _____
- > Alternative Vehicle spaces # _____
- > Number of Community meetings related to the project # _____
- > Expected project energy consumption savings due to energy efficient design # (kWh) _____
- > Construction site energy savings due to efficient construction activities # (kWh) _____
- > Potable Water demand # (gallons) _____
- > Quantity of recycled water used during construction # (gallons) _____
- > Quantity of dewatered water used during construction. # (gallons) _____
- > Quantity of construction waste diverted from typical landfill # (tons) _____
- > Quantity of construction waste reused or re-purposed # (tons) _____

Please provide these items to your ENV PM by April 14th, 2017 and feel free to contact the Cumming team via your Environmental PM regarding any question on these metrics and/or the CalGreen Report Card.

APPENDIX G

Annual Reporting to Metro Executive Board

CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS

CAPITAL PROJECT	PROJECT STATUS (12/31/16)
RCC	100 % Design 20 % Construction

SYMBOL	KEY
M	Mandatory
V	Voluntary
C	SP Commitment
OT	On Track
NOT	Not On Track
FA	Future Activity

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
PLANNING AND DESIGN									
1	Community Connectivity	CalGreen A5.103.1	2010 & 2013	V	V			OT	
2	Brownfield or Greyfield Redevelopment or Infill	CalGreen A5.103.2	2010 & 2013	V	V			OT	
3	Brownfield Redevelopment	CalGreen A5.103.2.1	2010 & 2013	V	V			OT	
4	Reduce Footprint and Optimize Open Space	CalGreen A5.104.1	2010 & 2013	V	V			NOT	
5	Local Zoning Requirement In Place	CalGreen A5.104.1.1	2010 & 2013	V	V			NOT	
6	No Local Zoning Requirement In Place	CalGreen A5.104.1.2	2010 & 2013	V	V			NOT	
7	No Open Space Required	CalGreen A5.104.1.3	2010 & 2013	V	V			NOT	
8	Deconstruction and Reuse of Existing Structures	CalGreen A5.105.1	2010 & 2013	V	V			NOT	
9	Existing Building Structure	CalGreen A5.105.1.1	2010 & 2013	V	V			NOT	
10	Existing Nonstructural Elements	CalGreen A5.105.1.2	2010 & 2013	V	V			NOT	
11	Salvage	CalGreen A5.105.1.3	2010 & 2013	V	V			NOT	
12	Storm Water Pollution Prevention	CalGreen 5.106.1	2010 & 2013	M	M		C	OT	
13	Local Ordinance	CalGreen 5.106.1.1	2013	M	M		C	OT	
14	Best Management Practices	CalGreen 5.106.1.2	2013	M	M		C	OT	
15	Storm Water Design	CalGreen A5.106.2	2010 & 2013	V	V			OT	
16	Storm Water Runoff Rate and Quantity	CalGreen A5.106.2.1	2010 & 2013	V	V			OT	
17	Storm Water Runoff Quality	CalGreen A5.106.2.2	2010 & 2013	V	V			OT	
18	Low Impact Development (LID)	CalGreen A5.106.3	2010 & 2013	V	M			FA	Negotiations ongoing with BOS, specifically for public ROW
19	Bicycle Parking and Changing Rooms	CalGreen 5.106.4	2010	M	M			OT	
20	Short-Term Bicycle Parking	CalGreen 5.106.4.1	2010	M	M			OT	
21	Long-Term Bicycle Parking	CalGreen 5.106.4.2	2010	M	M			OT	
22	Bicycle Parking	CalGreen 5.106.4	2013	M	M			OT	
23	Short-Term Bicycle Parking	CalGreen 5.106.4.1.1	2013	M	M			OT	
24	Long-Term Bicycle Parking	CalGreen 5.106.4.1.2	2013	M	M			OT	
25	Changing Rooms	CalGreen A5.106.4.3	2010 & 2013	V	V			NOT	
26	Designated Parking for Fuel-Efficient Vehicles	CalGreen A5.106.5.1	2010 & 2013	V	V			NOT	No vehicle parking
27	Tier 1 10% of Spaces	CalGreen A5.106.5.1.1	2010 & 2013	V	V			NOT	No vehicle parking
28	Tier 2 12% of Spaces	CalGreen A5.106.5.1.2	2010 & 2013	V	V			NOT	No vehicle parking
29	Designated Parking - Low Emitting, Fuel Efficient, Car and Van Pool	CalGreen 5.106.5.2	2010 & 2013	M	M			NOT	No vehicle parking
30	Parking Stall Marking	CalGreen 5.106.5.2.1	2010 & 2013	M	not included			NOT	No vehicle parking
31	Electric Vehicle (EV) Charging	Calgreen 5.106.5.3	2013	M	M			NOT	No vehicle parking
32	Single Charging Space Requirements	CalGreen 5.106.5.3.1	2013	M	M			NOT	No vehicle parking
33	Multiple Charging Space Requirements	CalGreen 5.106.5.3.2	2013	M	M			NOT	No vehicle parking
34	EV Charging Space Calculation	CalGreen 5.106.5.3.3	2013	M	M			NOT	No vehicle parking
35	Identification	CalGreen 5.106.5.3.4	2013	M	M			NOT	No vehicle parking
36	Future Charging Spaces Qualify as Designated Parking	CalGreen 5.106.5.3.5	2013	M	M			NOT	No vehicle parking
37	Electric Vehicle (EV) Charging	CalGreen A5.106.5.3	2010	V	V			NOT	No vehicle parking

APPENDIX G

CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS *continued*

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
38	Electric Vehicle Supply Wiring	CalGreen A5.106.5.3.1	2010	V	V			NOT	No vehicle parking
39	Parking Capacity	CalGreen A5.106.6	2010 & 2013	V	V			NOT	No vehicle parking
40	Reduce Parking Capacity	CalGreen A5.106.6.1	2010 & 2013	V	V			OT	
41	Street Parking or Compact Spaces	CalGreen A5.106.6.1.1	2013	V	V			NOT	
42	Programs for Alternative Transportation/Carpool	CalGreen A5.106.6.1.2	2013	V	V			OT	Reduced on-street parking and added new transit station
43	Exterior Walls (Shading)	CalGreen A5.106.7	2010 & 2013	V	V			N/A	Stations are underground
44	Fenestration	CalGreen A5.106.7.1	2010 & 2013	V	V			N/A	Stations are underground
45	East and West Walls	CalGreen A5.106.7.1.1	2010 & 2013	V	V			N/A	Stations are underground
46	South Walls	CalGreen A5.106.7.1.2	2010 & 2013	V	V			N/A	Stations are underground
47	Opaque Wall Areas	CalGreen A5.106.7.2	2010 & 2013	V	V			N/A	Stations are underground
47	Opaque Wall Areas	CalGreen A5.106.7.2	2010 & 2013	V	V			N/A	Stations are underground
48	Light Pollution Reduction	CalGreen 5.106.8	2010 & 2013	M	M		C	OT	
49	Local Ordinance if More Stringent	CalGreen 5.106.8	2010 & 2013	M	M		C	OT	
50	Building Orientation	CalGreen A5.106.9	2010	V				N/A	Stations are underground
51	Grading and Paving	CalGreen 5.106.10	2010 & 2013	M	M		C	FA	Compliance pending based on Change discussions to add uprights to canopy as a "beacon" for the community
52	Heat Island Effect	CalGreen A5.106.11	2010 & 2013	V	M			OT	
53	Hardscape Alternatives	CalGreen A5.106.11.1	2010 & 2013	V	M			OT	
54	Light Colored Materials	CalGreen A5.106.11.1.1	2013	V	V			OT	
55	Open Grid Pavement Paving System	CalGreen A5.106.11.1.2	2013	V	V			OT	
56	Cool Roof for Reduction of Heat Island Effect	CalGreen A5.106.11.2	2010 & 2013	V	V			OT	
57	Tier 1	CalGreen A5.106.11.2.2	2010 & 2013	V	V			NOT	
58	Tier 2	CalGreen A5.106.11.2.3	2010 & 2013	V	V			NOT	
ENERGY EFFICIENCY									
59	Meets or Exceeds California Energy Efficient Standards	CalGreen 5.201.1	2010 & 2013	M	M		C	N/A	Standards are not applicable to transit stations
60	Energy Performance	CalGreen A5.203.1	2010	V	M			N/A	Standards are not applicable to transit stations
61	Energy Efficiency	CalGreen A5.203.1	2013	V	V			N/A	Standards are not applicable to transit stations
62	Outdoor Lighting	CalGreen A5.203.1.1.1	2013	V	V		C	OT	
63	Service Water Heating in Restaurants	CalGreen A5.203.1.1.2	2013	V	V			N/A	
64	Areas Requiring Compliance with Residential Lighting Standards	CalGreen A5.203.1.1.3	2013	V	V			N/A	
65	Tier 1 < 95% of Title 24 Energy Budget	CalGreen A5.203.1.2.1	2013	V	V			N/A	
66	Tier 2 < 90% of Title 24 Energy Budget	CalGreen A5.203.1.2.2	2013	V	V			N/A	
67	ENERGY STAR Equipment and Appliances	CalGreen A5.204.1	2010	V	M			N/A	No appliances
68	Energy Monitoring	CalGreen A5.204.2	2010	V	V			NOT	
69	Demand Response	CalGreen A5.204.3	2010	V	V			NOT	
70	Commissioning	CalGreen A5.204.4	2010	V	V			N/A	
71	Building Orientation and Shading	CalGreen A5.204.6	2010	V	V			N/A	
72	Fenestration Products and Exterior Doors	CalGreen A5.205.1	2010	V	V			N/A	
73	Joints and Other Openings	CalGreen A5.205.2	2010	V	V			N/A	
74	Insulation and Roofing Products	CalGreen A5.205.3	2010	V	V			N/A	
75	Space-conditioning Equipment Certification	CalGreen A5.207.1	2010	V	V			NOT	
76	Space-Conditioning Systems	CalGreen A5.207.2	2010	V	V			NOT	

APPENDIX G

CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS *continued*

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
77	Service Water-heating Systems and Equipment	CalGreen A5.207.3	2010	V	V			NOT	
78	Pilot Lights Prohibited	CalGreen A5.207.4	2010	V	V			NOT	
79	Controls for Space-Conditioned Systems	CalGreen A5.207.5	2010	V	V			NOT	
80	Pipe Insulation	CalGreen A5.207.6	2010	V	V		C	OT	
81	Lighting Control Devices, Ballasts, and Luminaires	CalGreen A5.209.1	2010	V	V		C	OT	
82	Indoor Lighting Controls	CalGreen A5.209.2	2010	V	V		C	OT	
83	Outdoor Lighting Controls and Equipment	CalGreen A5.209.3	2010	V	V		C	OT	
84	Outdoor Lighting	CalGreen A5.209.4	2010	V	V		C	OT	
85	Signs	CalGreen A5.209.5	2010	V	V			NOT	Platform signs are illuminated
86	Sign Lighting Controls	CalGreen A5.209.6	2010	V	V			NOT	VMS Signs are illuminated
87	Appliance Efficiency Regulations	CalGreen A5.210.1	2010	V	V			N/A	No Appliances
88	On-site Renewable Energy	CalGreen A5.211.1	2010 & 2013	V	M			NOT	Site not conducive for renewable energy production
89	Documentation	CalGreen A5.211.1.1	2013	V	V			NOT	
90	Green Power	CalGreen A5.211.3	2010 & 2013	V	V			NOT	
91	Prewiring for Future Solar	CalGreen A5.211.4	2010	V	M			NOT	
92	Elevators and Escalators	CalGreen A5.212.1	2010 & 2013	V	V			NOT	
93	Elevators	CalGreen A5.212.1.1	2010 & 2013	V	V			NOT	No traction elevators
94	Car Lights and Fan	CalGreen A5.212.1.1.1	2010 & 2013	V	V		C	OT	
95	Escalators	CalGreen A5.212.1.2	2010 & 2013	V	V				
96	Controls	CalGreen A5.212.1.4	2010 & 2013	V	not included			NOT	
97	Steel Framing	CalGreen A5.213.1	2010 & 2013	V	V			NOT	
WATER EFFICIENCY AND CONSERVATION									
98	Meters - Indoor Water Use Separate Meters	CalGreen 5.303.1	2010 & 2013	M	M		C	N/A	Designed per MRDC standards
99	New Buildings > 50,000 SF	CalGreen 5.303.1.1	2010 & 2013	M	M		C	N/A	Transit stations do not classify as a commercial building
100	Each Space Consuming > 100 G/d	CalGreen 5.303.1.1	2010 & 2013	M	M		C	N/A	Transit stations do not classify as a commercial building
101	Cooling Towers > 500 gpm	CalGreen 5.303.1.1	2010 & 2013	M	M		C	N/A	No coolings towers
102	Evaporative Coolers > 6 gpm	CalGreen 5.303.1.1	2010 & 2013	M	M		C	N/A	No coolers
103	Boilers with > 500K Btu/hr	CalGreen 5.303.1.1	2010 & 2013	M	M		C	N/A	No boilers
104	Excess Consumption - Additions > 1,000 G/d	CalGreen 5.303.1.2	2010 & 2013	M	M		C	N/A	Transit stations do not classify as a commercial building
105	20% Savings	CalGreen 5.303.2	2010	M	M		C	N/A	Transit stations do not classify as a commercial building
106	Multiple Showerheads Serving One Shower	CalGreen 5.303.2.1	2010	M	M		C	N/A	No showerheads
107	Tier 1 30 % Water Savings	CalGreen A5.303.2.3.1	2010	V	V		C	N/A	No showerheads
108	Tier 2 35% Water Savings	CalGreen A5.303.2.3.2	2010	V	V		C	N/A	No showerheads
109	40% Water Savings	CalGreen A5.303.3.3	2010	V	V		C	N/A	No showerheads
110	Water Reduction	CalGreen 5.303.2	2013	M	M		C	N/A	Transit stations do not classify as a commercial building
111	Areas of Additions and Alteration	CalGreen 5.303.2.1	2013	M	M		C	N/A	Transit stations do not classify as a commercial building
112	Tier 1 12% Savings	CalGreen A5.303.2.3.1	2013	V	V		C	N/A	Transit stations do not classify as a commercial building
113	Tier 2 20% Savings	CalGreen A5.303.2.3.2	2013	V	V		C	N/A	Transit stations do not classify as a commercial building
114	25% Savings	CalGreen A5.303.2.3.3	2013	V	V		C	N/A	Transit stations do not classify as a commercial building
115	Nonpotable Water Systems for Indoor Use	CalGreen A5.303.2.3.4	2013	V	V		C	N/A	Designed per MRDC standards

APPENDIX G

CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS *continued*

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
116	Water Conserving Plumbing Fixtures and Fittings	CalGreen 5.303.3	2013	M	M			N/A	Designed per MRDC standards
117	Water Closets	CalGreen 5.303.3.1	2013	M	M			N/A	One water closet at security restroom at each station with low flow fixture
118	Urinals	CalGreen 5.303.3.2	2013	M	M			N/A	None
119	Showerheads	CalGreen 5.303.3.3	2013	M	M			N/A	None
120	Single Showerhead	CalGreen 5.303.3.3.1	2013	M	M			N/A	None
121	Multiple Showerheads	CalGreen 5.303.3.3.2	2013	M	M			N/A	None
122	Appliances and Fixtures - Commercial Application	CalGreen A5.303.3	2010 & 2013	V	V			N/A	None
123	Faucets and Fountains	CalGreen 5.303.3.4	2013	M	not included		C	OT	
124	Nonresidential Lavatory Faucets	CalGreen 5.303.3.4.1	2013	M	not included		C	OT	One Nonresidential Lavatory Faucets at each station
125	Kitchen Faucets	CalGreen 5.303.3.4.2	2013	M	not included			N/A	none
126	Wash Fountains	CalGreen 5.303.3.4.3	2013	M	not included			N/A	none
127	Metering Faucets	CalGreen 5.303.3.4.4	2013	M	not included			N/A	none
128	Metering Faucets for Wash Fountains	CalGreen 5.303.3.4.5	2013	M	not included			N/A	none
129	Wastewater Reduction	CalGreen 5.303.4	2010 & 2013	M	M		C	N/A	Transit stations do not classify as a commercial building
130	Areas of Addition or Alterations	CalGreen 5.303.4	2013	M	not included		C	N/A	Transit stations do not classify as a commercial building
131	Non-potable Water Systems	CalGreen 5.303.4.2	2013	M	not included			N/A	Transit stations do not classify as a commercial building
132	Dual Plumbing	CalGreen A5.303.5	2010 & 2013	V	V			N/A	
133	Standards for Plumbing Fixtures and Appliances	CalGreen 5.303.6	2010 & 2013	M	M		C	OT	
134	Water Budget - Outdoor Water Use	CalGreen 5.304.1	2010 & 2013	M	M		C	OT	
135	Outdoor Potable Water Use	CalGreen 5.304.2	2010 & 2013	M	M		C	OT	
136	Outdoor Potable Water - Use Not Subject to Sec. 535	CalGreen A5.304.2.1	2010 & 2013	V	V			OT	
137	Irrigation Design	CalGreen 5.304.3	2010 & 2013	M	M		C	OT	
138	Irrigation Controllers	CalGreen 5.304.3.1	2010 & 2013	M	M		C	OT	
139	Weather/Soil Moisture Based Controllers 1	CalGreen 5.304.3.1.1	2010 & 2013	M	M		C	OT	
140	Weather/Soil Moisture Based Controllers 2	CalGreen 5.304.3.1.2	2010 & 2013	M	M			N/A	
141	Potable Water Reduction	CalGreen A5.304.4	2010 & 2013	V	V		C	OT	
142	Tier 1 < 60% of ETo Times	CalGreen A5.304.4.1	2010 & 2013	V	V		C	OT	
143	Tier 2 < 55% of ETo Times	CalGreen A5.304.4.2	2010 & 2013	V	V		C	OT	
144	Verification of Compliance	CalGreen A5.304.4.3	2010 & 2013	V	V		C	OT	
145	Potable Water Elimination	CalGreen A5.304.5	2010 & 2013	V	V		C	OT	
146	Restoration of Areas Disturbed by Construction	CalGreen A5.304.6	2010 & 2013	V	V		C	OT	
147	Previously Developed Sites	CalGreen A5.304.7	2010 & 2013	V	V		C	OT	
148	Greywater Irrigation System	CalGreen A5.304.8	2010 & 2013	V	V			NOT	
149	Nonpotable Water Systems	CalGreen A5.305.1	2013	V	V			NOT	
150	Irrigation Systems - Recycled Water	CalGreen A5.305.2	2013	V	V			NOT	
MATERIAL CONSERVATION AND RESOURCE EFFICIENCY									
151	Wood Framing	CalGreen A5.404.1	2010 & 2013	V	V			N/A	No wood framing
152	Regional Materials	CalGreen A5.405.1	2010 & 2013	V	V			OT	
153	Bio-based Materials	CalGreen A5.405.2	2010 & 2013	V	V			NOT	No permanent materials
154	Certified Wood Products	CalGreen A5.405.2.1	2013	V	V			N/A	No permanent materials
155	Rapidly Renewable Materials	CalGreen A5.405.2.2	2013	V	V			NOT	No permanent materials
156	Resused Materials	CalGreen A5.405.3	2010 & 2013	V	V			NOT	

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CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS *continued*

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
157	Recycled Content	CalGreen A5.405.4	2010 & 2013	V	V			NOT	
158	Tier 1 No < 10% Recycled Content Value	CalGreen A5.405.4.1	2013	V	V			NOT	
159	Tier 2 No < 15% Recycled Content Value	CalGreen A5.405.4.2	2013	V	V			NOT	
160	Cement and Concrete	CalGreen A5.405.5	2010 & 2013	V	V			OT	
161	Cement	CalGreen A5.405.5.1	2010 & 2013	V	V			N/A	
162	Concrete	CalGreen A5.405.5.2	2010 & 2013	V	V			N/A	
163	Supplementary Cementitious Materials	CalGreen A5.405.5.2.1	2010 & 2013	V	V			NOT	
164	Mixed Design Equation	CalGreen A5.405.5.2.1.1	2010 & 2013	V	V			NOT	
165	Additional Means of Compliance	CalGreen A5.405.5.3	2010 & 2013	V	v			NOT	
166	Cement	CalGreen A5.405.5.3.1	2010 & 2013	V	V			NOT	
167	Alternative Fuels	CalGreen A5.405.5.3.1.1	2010 & 2013	V	V			NOT	
168	Alternative Power	CalGreen A5.405.5.3.1.2	2010 & 2013	V	V			NOT	
169	Concrete Manufacture	CalGreen A5.405.5.3.2	2010 & 2013	V	V			NOT	
170	Alternative Energy in Manufacture	CalGreen A5.405.5.3.2.1	2010 & 2013	V	V			NOT	
171	Recycled Aggregates in Concrete	CalGreen A5.405.5.3.2.2	2010 & 2013	V	V			NOT	
172	Recycled Water in Mixing	CalGreen A5.405.5.3.2.3	2010 & 2013	V	V			NOT	
173	High Strength Concrete	CalGreen A5.405.5.3.2.4	2013	V	V			NOT	
174	Choice of Materials	CalGreen A5.406.1	2013	V	V			NOT	
175	Service Life	CalGreen A5.406.1.1	2010 & 2013	V	not included			NOT	
176	Reduced Maintenance	CalGreen A5.406.1.2	2010 & 2013	V	V			NOT	
177	Recyclability	CalGreen A5.406.1.3	2010 & 2013	V	not included			NOT	
178	Weather Protection	CalGreen 5.407.1	2010 & 2013	M	M		C	OT	
179	Moisture Control	CalGreen 5.407.2	2010 & 2013	M	M		C	OT	
180	Sprinklers	CalGreen 5.407.2.1	2010 & 2013	M	M		C	OT	
181	Entries and Opening	CalGreen 5.407.2.2	2010 & 2013	M	M		C	OT	
182	Exterior Door Protection	CalGreen 5.407.2.2.1	2013	M	not included			N/A	
183	Flashing	CalGreen 5.407.2.2.2	2013	M	not included			N/A	
184	Construction Waste Management	CalGreen 5.408.1	2010 & 2013	M	M		C	OT	
185	Construction Waste Management Plan	CalGreen 5.408.1.1	2013	M	not included		C	OT	
186	Waste Management Company	CalGreen 5.408.1.2	2013	M	not included		C	OT	
187	Waste Stream Reduction Alternatives	CalGreen 5.408.1.3	2013	M	not included		C	OT	
188	Documentation	CalGreen 5.408.1.4	2013	M	not included		C	OT	
189	Construction Waste Diversion	CalGreen 5.408.1	2010	M	M		C	OT	
190	Construction Waste Management Plan	CalGreen 5.408.2	2010	M	M			OT	
191	Documentation	CalGreen 5.408.2.1	2010	M	M			OT	
192	Isolated Jobsites	CalGreen 5.408.2.2	2010	M	M			OT	
193	Construction Waste Reduction of at least 50%	CalGreen 5.408.3	2010	M	M		C	OT	
194	Enhanced Construction Waste Reduction	CalGreen A5.408.3.1	2010	V	V			OT	
195	Verification of Compliance	CalGreen A5.408.3.1.1	2010	V	V			OT	
196	Excavated Soil and Land Clearing Debris - 100%	CalGreen 5.408.3	2013	M	M			OT	
197	Enhanced Construction Waste Reduction - Tier 1 65%	CalGreen A5.408.3.1	2013	V	V			N/A	
198	Enhanced Construction Waste Reduction - Tier 2 80%	CalGreen A5.408.3.1.1	2013	V	V			N/A	
199	Verification of Compliance	CalGreen A5.408.3.1.2	2013	V	V			OT	
200	Excavated Soil and Land Clearing Debris - 100%	CalGreen 5.408.4	2010	M	M			OT	

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CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS *continued*

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
201	Life Cycle Assessment - General	CalGreen A4.409.1	2013	V	V			NOT	
202	Materials and System Assemblies	CalGreen A5.409.1	2010	V	V			NOT	
203	Whole Building Life Cycle Assessment	CalGreen A5.409.2	2013	V	V			NOT	
204	Materials and System Assemblies	CalGreen A5.409.3	2013	V	V			NOT	
205	Substitution of Prescriptive Standards	CalGreen A5.409.4	2013	V	V			NOT	
206	Verification of Compliance	CalGreen A5.409.5	2013	V	V			NOT	
207	Recycling by Occupants	CalGreen 5.410.1	2010 & 2013	M	M			N/A	
208	Additions	CalGreen 5.410.1.1	2013	M	not included			N/A	
209	Commissioning (Buildings 10k S.F. and Greater)	CalGreen 5.410.2	2010 & 2013	M	M			OT	
210	Owners' Project Requirements	CalGreen 5.410.2.1	2010 & 2013	M	M			OT	
211	Basis of Design	CalGreen 5.410.2.2	2010 & 2013	M	M			OT	
212	Comissioning Plan	CalGreen 5.410.2.3	2010 & 2013	M	M			OT	
213	Functional Performance Testing	CalGreen 5.410.2.4	2010 & 2013	M	M			OT	
214	Documentation and Training	CalGreen 5.410.2.5	2010 & 2013	M	M			OT	
215	Systems Manual	CalGreen 5.410.2.5.1	2010 & 2013	M	M			OT	
216	Systems Operations Training	CalGreen 5.410.2.5.2	2010 & 2013	M	M			OT	
217	Commissioning Report	CalGreen 5.410.2.6	2010 & 2013	M	M			OT	
218	Testing and Adjusting of Systems (Building < 10K SF)	CalGreen 5.410.4	2010 & 2013	M	M			OT	
219	Systems	CalGreen 5.410.4.2	2010 & 2013	M	M			OT	
220	Procedures	CalGreen 5.410.4.3	2010 & 2013	M	M			OT	
221	HVAC Balancing	CalGreen 5.410.4.3.1	2010 & 2013	M	M			OT	
222	Reporting	CalGreen 5.410.4.4	2010 & 2013	M	M			OT	
223	Operation and Maintenance Manual	CalGreen 5.410.4.5	2010 & 2013	M	M			OT	
224	Inspections and Reports	CalGreen 5.410.4.5.1	2010 & 2013	M	M			OT	
ENVIRONMENTAL QUALITY									
225	Fireplaces	CalGreen 5.503.1	2010 & 2013	M	M			N/A	Not in scope
226	Woodstoves	CalGreen 5.503.2	2010 & 2013	M	M			N/A	Not in scope
227	Indoor Air Quality During Construction	Cal Green A5.504.1	2010 & 2013	V	V		C	OT	
228	Temporary Ventilation During Construction	Cal Green A5.504.1.1	2010 & 2013	V	V		C	OT	
229	Additional IAQ Measures	Cal Green A5.504.1.2	2010 & 2013	V	V		C	OT	
230	Temporary Ventilation with HVAC	CalGreen 5.504.1.3	2013	M	M			NOT	
231	IAQ Postconstruction	CalGreen A5.504.2	2010 & 2013	V	V			OT	
232	IAQ Testing	CalGreen A5.504.2.1	2010 & 2013	V	V			OT	
233	Max Levels of Contaminants	CalGreen A5.504.2.1.1	2010 & 2013	V	V			OT	
234	CO	CalGreen A5.504.2.1.1.1	2010 & 2013	V	V			OT	
235	Formaldehyde	CalGreen A5.504.2.1.1.2	2010 & 2013	V	V			OT	
236	PM 10	CalGreen A5.504.2.1.1.3	2010 & 2013	V	V			OT	
237	4-PCH	CalGreen A5.504.2.1.1.4	2010 & 2013	V	V			OT	
238	Total VOC	CalGreen A5.504.2.1.1.5	2010 & 2013	V	V			OT	
239	Test Protocols for IAQ	CalGreen A5.504.2.1.2	2010 & 2013	V	V			OT	
240	Noncomplying Building Areas	CalGreen A5.504.2.1.3	2010 & 2013	V	V			OT	
241	Covering Duct Openings and Protection of Mechanical Equipment During Construction	CalGreen 5.504.3	2010 & 2013	M	M		C	OT	
242	Finish Material Pollutant Control	CalGreen 5.504.4	2010 & 2013	M	M		C	OT	

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CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS *continued*

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
243	Adhesives, Sealants, Caulks	CalGreen 5.504.4.1	2010 & 2013	M	M		C	OT	
244	Comply with Local or SCAQMD Rule 1168 (VOC)	CalGreen 5.504.4.1.1	2010 & 2013	M	M		C	OT	
245	Comply with State VOC and Other Standards	CalGreen 5.504.4.1.2	2010 & 2013	M	M		C	OT	
246	Paints and Coatings	CalGreen 5.504.4.3	2010 & 2013	M	M			OT	
247	Aerosol Paints and Coatings	CalGreen 5.504.4.3.1	2010 & 2013	M	M			OT	
248	Verification of Compliance	CalGreen 5.504.4.3.2	2010 & 2013	M	M			OT	
249	Carpet Systems	CalGreen 5.504.4.4	2010 & 2013	M	M			N/A	No carpet
250	Carpet Cushion	CalGreen 5.504.4.4.1	2010 & 2013	M	M			N/A	No carpet
251	Carpet Adhesive	CalGreen 5.504.4.4.2	2010 & 2013	M	M			N/A	No carpet
252	Composite Wood Products	CalGreen 5.504.4.5	2010 & 2013	M	M			OT	
253	Early Compliance with Formaldehyde Limits	CalGreen A5.504.4.5.1	2010	V	V			OT	
254	Documentation	CalGreen 5.504.4.5.2	2010	M	M			OT	
255	Early Compliance with Formaldehyde Limits, Tier 1	CalGreen A5.504.4.5.1	2013	V	V			OT	
256	No Added Formaldehyde, Tier 2	CalGreen 5.504.4.5.2	2013	M	not included			OT	
257	Documentation	CalGreen 5.504.4.5.3	2013	M	M			OT	
258	Documentation Material Pollutant Control	CalGreen 5.504.4.5.3	2013	M	M			OT	
259	Product Certification and Specs	CalGreen 5.504.4.5.3.1	2013	M	M			OT	
260	Chain of Custody	CalGreen 5.504.4.5.3.2	2013	M	M			OT	
261	Labeled as Meeting Composite Wood Product Regulations	CalGreen 5.504.4.5.3.3	2013	M	M			N/A	No wood framing
262	Exterior Grade Products Marked as Meeting Engineered Product Regulation	CalGreen 5.504.4.5.3.4	2013	M	M			N/A	No wood framing
263	Other Methods Acceptable	CalGreen 5.504.4.5.3.5	2013	M	M			N/A	No wood framing
264	Resilient Flooring Systems	CalGreen 5.504.4.6	2010 & 2013	M	M			OT	
265	Verification of Compliance with Emission Limits	CalGreen A5.504.4.6.1	2010 & 2013	V	V			NOT	
266	Resilient Flooring Systems Tier 1	CalGreen A5.504.4.7	2010 & 2013	V	V			NOT	
267	Resilient Flooring Systems Tier 2	CalGreen A5.504.4.7.1	2010 & 2013	V	V			NOT	
268	Verification of Compliance	CalGreen A5.504.4.7.2	2010 & 2013	V	V			NOT	
269	Thermal Insulation Tier 1	CalGreen A5.504.4.8	2010 & 2013	V	V			NOT	
270	Thermal Insulation Tier 2	CalGreen A5.504.4.8.1	2010 & 2013	V	V			NOT	
271	Verification of Compliance - Thermal Insulation	CalGreen A5.504.4.8.2	2010 & 2013	V	V			NOT	
272	Acoustical Ceilings and Wall Panels	CalGreen A5.504.4.9	2010 & 2013	V	V			N/A	
273	Verification of Compliance - Acoustical Finish	CalGreen A5.504.4.9.1	2010 & 2013	V	V			N/A	
274	Hazardous Particulates and Chemical Pollutants	CalGreen A5.504.5	2010 & 2013	V	V			OT	
275	Entryway Systems	CalGreen A5.504.5.1	2010 & 2013	V	V			OT	
276	Isolation of Pollutant Sources	CalGreen A5.504.5.2	2010 & 2013	V	V			OT	
277	Filters	CalGreen 5.504.5.3	2010 & 2013	M	M			OT	
278	Labeling Installed Filters	CalGreen 5.504.5.3.1	2013	M	V			OT	
279	Filters	CalGreen A5.504.5.3.1	2010 & 2013	V	V			NOT	
280	Filters Tier 1	CalGreen A5.504.5.3.1	2013	V	V			NOT	
281	Filters Tier 2	CalGreen A5.504.5.3.2	2013	V	V			NOT	
282	Environmental Tobacco Smoke (ETS) Control	CalGreen 5.504.7	2010 & 2013	M	M			OT	
283	Indoor Moisture Control	CalGreen 5.505.1	2010 & 2013	M	M			OT	
284	Outside Air Delivery	CalGreen 5.506.1	2010 & 2013	M	M		C	OT	
285	Carbon Dioxide Monitoring	CalGreen 5.506.2	2010 & 2013	M	M		C	OT	
286	Lighting and Thermal Comfort Controls	CalGreen A5.507.1	2010 & 2013	V	V			N/A	

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CONTRACTOR'S SELF REPORTING OF ACHIEVEMENTS *continued*

	COMMITMENT	CODE/ REFERENCE	CALGREEN YEAR	STATE MANDATORY OR VOLUNTARY	LOCAL MANDATORY OR VOLUNTARY*	LOCAL MANDATORY OR VOLUNTARY**	PROJECT SUSTAINABILITY PLAN COMMITMENTS		COMMENTS
							LIST CS	STATUS	
287	Single-Occupant Spaces	CalGreen A5.507.1.1	2010 & 2013	V	V			N/A	
288	Lighting	CalGreen A5.507.1.1.1	2010 & 2013	V	V			N/A	
289	Thermal Comfort	CalGreen A5.507.1.1.2	2010 & 2013	V	V			N/A	
290	Multi-Occupant Spaces	CalGreen A5.507.1.2	2010 & 2013	V	V			N/A	
291	Daylight	CalGreen A5.507.2	2010 & 2013	V	V			N/A	
292	Views	CalGreen A5.507.3	2010 & 2013	V	not included			N/A	
293	Acoustical Control	CalGreen 5.507.4	2010 & 2013	M	M			OT	
294	Exterior Noise Transmission	CalGreen 5.507.4.1	2010 & 2013	M	M			OT	
295	Noise Exposure Where Contours Are Not Available	CalGreen 5.507.4.1.1	2013	M	M			OT	
296	Interior Sound	CalGreen 5.507.4.2	2010	M	M			OT	
297	Performance Method	CalGreen 5.507.4.2	2013	M	M			OT	
298	Site Features	CalGreen 5.507.4.2.1	2013	M	M			OT	
299	Documentation of Compliance	CalGreen 5.507.4.2.2	2013	M	M			OT	
300	Interior Sound Transmission	CalGreen 5.507.4.3	2013	M	M			OT	
301	Ozone Depletion and Global Warming Reductions	CalGreen 5.508.1	2010 & 2013	M	M		C	OT	
302	CFCs	CalGreen 5.508.1.1	2010 & 2013	M	M		C	OT	
303	Halons	CalGreen 5.508.1.2	2010 & 2013	M	M		C	OT	
304	HCFCs	CalGreen A5.508.1.3	2010 & 2013	V	V			OT	
305	HFCs	CalGreen A5.508.1.4	2010 & 2013	V	V			OT	
306	No HFCs in HVAC, Refrigeration, or Fire Suppression Equipment	CalGreen A5.508.1.4.1	2013	V	V			OT	
307	Limited HFCs in HVAC and Refrigeration Equipment	CalGreen A5.508.1.4.2	2013	V	not included			N/A	No refrigerant equipment
308	Supermarket Refrigerant Leak Reduction	CalGreen 5.508.2	2013	M	M			N/A	No refrigerant equipment

	TOTAL # CALGREEN 2010	TOTAL # STS (OT)	TOTAL # STS (NOT)	TOTAL # STS (FA)	TOTAL # STS (N/A)	STS% OT OR FA
MANDATORY STATE	82	61	2	1	18	76%
VOLUNTARY STATE	138	47	59	1	31	35%
MANDATORY LOCAL	82	61	2	1	18	76%
VOLUNTARY LOCAL	138	47	59	1	31	35%
	TOTAL # CALGREEN 2013	TOTAL # STS (OT)	TOTAL # STS (NOT)	TOTAL # STS (FA)	TOTAL # STS (N/A)	STS% OT OR FA
MANDATORY STATE	120	73	9	1	37	62%
VOLUNTARY STATE	141	46	62	1	32	33%
MANDATORY LOCAL	120	73	9	1	37	62%
VOLUNTARY LOCAL	141	46	62	1	32	33%

* City of Los Angeles Ordinance No. 181480 incorporated provisions of the 2010 California Green Building Standards Code (CalGreen) as Article 9, Chapter IX of the Municipal Code (LAMC). Ordinance No. 182849 amended Article 9 to incorporate the updated provisions of the 2013 CalGreen into the LAMC.

** Provide applicable CalGreen requirements for the other jurisdictions where the Crenshaw/LAX project will occur.