



**DATE:** September 26, 2018

**TO:** Waste Management Authority Board

**FROM:** Wendy Sommer, Executive Director

**BY:** Miya Kitahara, Program Manager II

**SUBJECT:** BAAQMD Embodied Carbon Grant

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**SUMMARY**

Staff requests Waste Management Authority approval to enter into an agreement with the County of Marin for \$118,993 to help implement the Reducing Embodied Carbon in the Built Environment project funded through a Bay Area Air Quality Management District (BAAQMD) Climate Protection Grant.

**DISCUSSION**

The term “embodied carbon” refers to the greenhouse gas emissions resulting from the extraction, production, and transportation of materials prior to consumption. In the built environment, this includes all of the supply chain emissions from building material production and the construction process. Reducing embodied carbon aligns with the Agency’s priorities on solutions to upstream waste prevention, because practices that increase material efficiency and reuse typically results in reduced embodied carbon as well as less material to manage at end of life disposal.

The BAAQMD grant guidelines allowed for “embodied emissions” which relates directly to the upstream co-benefits of waste prevention. Agency staff partnered with staff at the County of Marin to develop a regional proposal entitled Reducing Embodied Carbon in the Built Environment. This proposal was the only proposal BAAQMD received that addressed upstream embodied carbon emissions in materials.

The grant builds upon the Agency’s project 1350 Member Agency Building Services, which has shifted its focus to circular economy and embodied carbon strategies to align with the Agency’s upstream priority. The scope of work leverages external funding and regional partnerships to increase the impact of project 1350. A regional approach will be important to achieve market transformation because the building industry and suppliers operate regionally.

BAAQMD has awarded \$206,456 in grant funding to the County of Marin as lead applicant. The County of Marin's primary task is to adopt code language requiring reduced embodied carbon in concrete for projects built in unincorporated Marin County. The Agency's role is to conduct a regional stakeholder process and provide technical assistance to four pilot projects in the Bay Area. Attachment A describes the Agency's scope in more detail.

Project outcomes will include model policy language that can be adopted by WMA member agencies and other jurisdictions in California; increased awareness in the industry and among local government staff of embodied carbon and methods to reduce it; a regional stakeholder network which can be leveraged to continue advancing embodied carbon and waste prevention initiatives; and case studies from the four pilot projects, any and all of which could be in Alameda County.

This is the third of three successful proposals to BAAQMD's Climate Protection Grant with Agency participation. The other two, Prototyping Technology to Reduce Contamination and Heat Pump Water Heaters, were presented in July to WMA and Energy Council, respectively.

## **RECOMMENDATION**

Adopt the attached Resolution authorizing the Executive Director to sign a Memorandum of Understanding with the County of Marin to accept \$118,993 and to enter into all necessary contract agreements with subconsultants, and make corresponding changes to the FY 18/19 budget.

Attachment A: Resolution #WMA 2018 – 05

Attachment B: Reducing Embodied Carbon Agency Scope of Work Outline

**Attachment A**

**ALAMEDA COUNTY WASTE MANAGEMENT AUTHORITY  
RESOLUTION #WMA 2018 - 05**

**MOVED:  
SECONDED:**

**AT THE MEETING HELD SEPTEMBER 26, 2018**

**RESOLUTION AUTHORIZING THE EXECUTIVE DIRECTOR TO ENTER INTO  
AN AGREEMENT WITH THE COUNTY OF MARIN FOR  
REDUCING EMBODIED CARBON IN THE BUILT ENVIRONMENT  
AND OTHER RELATED ACTIONS**

**WHEREAS**, the WMA Board adopted guiding principles that prioritize waste prevention, projects with multiple sustainability benefits and innovative approaches; and

**WHEREAS**, the term “embodied carbon” refers to the greenhouse gas emissions resulting from the extraction, production, and transportation of materials prior to consumption, including all of the supply chain emissions from building material production and the construction process; and

**WHEREAS**, reducing embodied carbon aligns with WMA priorities; and

**WHEREAS**, WMA staff partnered with the County of Marin to submit a regional proposal to the Bay Area Air Quality Management District (BAAQMD) 2018 Climate Protection Grant program for Reducing Embodied Carbon in the Built Environment; and

**WHEREAS**, BAAQMD awarded \$206,456 of grant funding to the County of Marin as lead applicant; and

**WHEREAS**, the County of Marin intends to provide the WMA with an agreement for \$118,993 for the scope of work outlined in Attachment B;

**NOW THEREFORE, BE IT RESOLVED**, that the Waste Management Authority hereby authorizes the Executive Director to:

1. Enter into all necessary agreements with the County of Marin in order to accept funds in the amount of \$118,993.
2. Enter into all necessary contracts and agreements with project partners, including Arup and Carbon Leadership Forum, to implement the scope of work.
3. Approve any required time extensions, modifications, or amendments thereto.
4. Make any necessary changes to the FY 2018/19 budget for this grant, to add Project 1351: Embodied Carbon BAAQMD Grant.
5. Allocate the necessary resources to implement and carry out the project.

**BE IT FURTHER RESOLVED** that the Executive Director as the Board President's designee, is hereby authorized to execute on behalf of the Alameda County Waste Management Authority all grant-related documents, including, but not limited to, applications, payment requests, agreements (including the hiring of temporary staff), and amendments necessary to secure grant funds and to implement the approved grant project.

**ADOPTED this 26th day of September 2018, by the following votes:**

**AYES:**

**NOES:**

**ABSENT:**

**ABSTAINED:**

I certify that under the penalty of perjury that the foregoing is a full, true and correct copy of Resolution #WMA 2018 –

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Wendy Sommer  
Executive Director

## **Attachment B: Reducing Embodied Carbon Agency Scope of Work Outline**

### **Task 1: Regional Stakeholder Process**

StopWaste will facilitate the creation of an Embodied Carbon Network (ECN) Bay Area Regional Materials Working Group (“Working Group”) and convene that group regularly as the foundation of a regional stakeholder process to develop and review model specifications and code language. The group is anticipated to include approximately 30 stakeholders from across the industry, including manufacturers, architects, engineers, and policymakers. The process will involve six virtual meetings of the Working Group and two in-person convenings in the Bay Area. StopWaste will schedule, chair/facilitate, and provide technical support to the Working Group for both virtual and in-person meetings, hiring subconsultants as needed.

### **Task 2: Specification, Policy Language, and Implementation Resource Development**

Develop model specifications that can be applied to nonresidential projects. Develop building code language for ready adoption along with the CALGreen 2019 amendment. Develop user-friendly materials, such as template design guidelines for architects and builders and permitting checklists for use by local jurisdiction staff. This task aims to create all the technical resources necessary for local governments and interested project developers to apply the model specifications to their codes and projects.

### **Task 3: Policy Adoption Process**

*NOTE:* Task 3 (Policy Adoption Process) is not assigned to STOPWASTE. Included for reference only.

### **Task 4: Application to Public and Private Pilot Projects**

StopWaste will identify and provide technical assistance to four (4) nonresidential projects (which may be commercial, municipal, institutional, or infrastructure projects) to pilot the model specifications. The four projects will be hand-picked to represent a variety of building types in order to generate replicable findings. StopWaste will provide engineering technical assistance (TA), which will involve at least three discussions with various project team members including architects and owners; civil, structural, and building engineers; and suppliers. It will also involve project design and specifications review and recommendations based on local availability of mixes. Pilot projects should have construction timelines to be completed by December 31, 2022.

### **Task 5: Outreach and Dissemination**

Promote opportunities to address embodied carbon through local building codes to jurisdictions around the Bay Area and beyond, including but not limited to BayREN forums, ECN and other webinars, and an Alameda County Green Purchasing Roundtable.

### **Timelines**

- **Task 1:** Meetings will occur between October 2018 and September 2019. The meeting schedule is designed to allow for reiterations of content based on stakeholder input.
- **Task 2:** Specifications will be developed, presented, and refined in concert with the Working Group and stakeholder meetings (Task 1). All materials, including specifications and model code language, should be finalized by September 2019. All implementation materials will be completed by December 2019.
- **Task 3:** N/A
- **Task 4:** All technical assistance will be completed by July 2020
- **Task 5:** Between Sept 2019 – July 2020

**Deliverables**

- **Task 1:** List of Working Group members. Agendas, participant lists, presentation materials, and meeting notes from the 6 virtual and 2 in-person meetings.
- **Task 2:** Model nonresidential specifications for different project types. Template CALGreen code language addressing embodied carbon in concrete for nonresidential standards. Templates and training materials for implementation.
- **Task 3:** N/A
- **Task 4:** Description of the pilot projects selected (building type, location, size, relevant project specifications, etc.), estimated GHG reductions, overview of TA provided and related documentation.
- **Task 5:** Description and copies of outreach materials, outreach activities performed, copies of materials presented, and list of participants.

**StopWaste Contract Budget Details**

	<b>StopWaste</b>	<b>CLF</b>	<b>Arup</b>	<b>Total by Task</b>
<b>Task 1</b>	25,152	15,000		40,152
<b>Task 2</b>			44,000	44,000
<b>Task 3</b>				0
<b>Task 4</b>	11,118		20,000	31,118
<b>Task 5</b>	3,722			3,722
	<b>39,993</b>	<b>15,000</b>	<b>64,000</b>	<b>118,993</b>