



Zero Waste Commission Regular Meeting

Monday, September 23, 2019, 7:00 p.m.
City of Berkeley Corporation Yard (Ratcliff Building, Willow Room)
1326 Allston Way, Berkeley

Meeting Agenda

PRELIMINARY MATTERS (30 Minutes):

- 7:00 p.m. Call to Order
Chair will call the meeting to order; Secretary will call roll.
- Christienne de Tournay (Chair)**, appointed by CM Sophie Hahn, District 5
Alfred Twu (Vice Chair), appointed by former CM Kris Worthington, District 7
Annette Poliwka, appointed by Mayor Jesse Arreguin
Ilana Golin, appointed by CM Rashi Kesarwani, District 1
VACANT, appointed by CM Cheryl Davila, District 2
Antoinette Stein, appointed by CM Ben Bartlett, District 3
Margo Schueler, appointed by CM Kate Harrison, District 4
Jennifer Lombardi, appointed by CM Susan Wengraf, District 6
David Grubb, appointed by CM Lori Droste, District 8
- 7:05 p.m. Approve Meeting Agenda
- 7:10 p.m. Public Comment
Speakers are generally allotted up to three minutes. Speakers may be allotted less time at the discretion of the Chair.
- 7:20 p.m. Commissioner Announcements
Commissioners may make general announcements; no action will be taken.
- 7:25 p.m. Approval of Minutes: July 22, 2019 Regular Meeting*

INFORMATION AND ACTION ITEMS (90 minutes):

- 7:30 p.m. 1. Staff Updates
- Transfer Station Feasibility Study
 - Zero Waste Strategic Plan
 - Zero Waste Rates Sept. 17 Council Work Session Recap
 - Carpet Recycling Program
 - SB 1383 Rulemaking
 - CRRA Report Back
- 7:45 p.m. 2. Vessel Reusable Cup Pilot Program Launch update provided by Martin Bourque, Ecology Center
- 7:55 p.m. 3. Discuss Single Use Foodware & Litter Reduction Ordinance implementation, including onsite signage and public education strategies

- 8:05 p.m. 4. Planning for March 2020 National Zero Waste Week – discuss how the Commission and/or City can be involved
- 8:15 p.m. 5. Discuss Friends of the Zero Waste Commission Facebook group and/or other public communication ideas
- 8:20 p.m. 6. Discuss methods for promoting community composting
- 8:25 p.m. 7. Deconstruction Subcommittee Update - Discuss Construction and Demolition Materials Markets: Identifying Opportunities Regionally and Locally*
- 8:40 p.m. 8. Discuss mixed plastics recycling
- 8:50 p.m. 9. Discuss closure of deposit redemption centers in California
- 8:55 p.m. 10. Discuss future agenda items
- 9:00 p.m. 11. Action to adjourn the meeting

COMMUNICATIONS:

Documents/letters are included as attachments in the agenda packet. Links to online information are included below; printed hard copies of linked items are available at the meeting or upon request.

- Communication from Adele Poenisch*
- Communication from Chrise de Tournay**
 - <https://ecologycenter.org/blog/announcing-berkeleys-first-reusable-cup-program/>
- Documents forwarded by staff*
 - Comments on the 2nd draft of SB1383 submitted to CalRecycle by the City of Berkeley Zero Waste Division
 - City of Berkeley Disaster Debris Management Plan DRAFT
- Informational article links/webinars forwarded by staff**
 - If You Don't Know, Now You Know - Asian Nations Reject Western Trash | The Daily Show: <https://youtu.be/-htnUTN4mH0>
 - California firm closes 284 deposit redemption centers: <https://resource-recycling.com/recycling/2019/08/06/california-firm-closes-284-deposit-redemption-centers/>
 - SB1383 CalRecycle Rulemaking Information: <https://www.calrecycle.ca.gov/Laws/Rulemaking/SLCP/>
 - U.S. REGULATORY APPROACHES FOR PACKAGING - September 11, 1:30 p.m. – 3:00 p.m. (EST) [Register Here](#)
 - Article re: Wishcycling: <https://www.motherjones.com/environment/2019/08/recycling-wishcycling-china->

[plastics-zero-waste-bags-straws/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202019-09-04%20Waste%20Dive:%20Recycling%20%5Bissue:22809%5D&utm_term=Waste%20Dive:%20Recycling](https://www.sailthru.com/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202019-09-04%20Waste%20Dive:%20Recycling%20%5Bissue:22809%5D&utm_term=Waste%20Dive:%20Recycling)

- Invite to the **Bay Area Deconstruction Workgroup Meeting** will be **Monday, October 21, 2019, from 10:00 – 12:30** at the [U.S. EPA Region 9 Office in San Francisco](#)

*Indicates material included in the agenda packet

** Indicates material to be available at the meeting



This meeting is being held in a wheelchair-accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services Specialist at 981-6418 (V) or 981-6347 (TDD) at least three business days before the meeting date. Please refrain from wearing scented products to this meeting.

*Communications to Berkeley boards, commissions or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to a City board, commission or committee, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission or committee. If you do not want your contact information included in the public record, please do not include that information in your communication.* Please contact the secretary to the relevant board, commission or committee for further information.

Zero Waste Commission Secretary: Heidi Obermeit, Recycling Program Manager, 1201 2nd St. Berkeley, CA 94710, 510-981-6357, hobermeit@cityofberkeley.info

(DRAFT) MINUTES

The meeting was convened at 7:00 p.m. with Chrise de Tournay, Chair, presiding.

ROLL CALL

Present: Chrise de Tournay, Alfred Twu, Ilana Golin, Antoinette Stein
LOA: Annette Poliwka, Margo Schueler, Jennifer Lombardi
Absent: None

STAFF PRESENT: Greg Apa, Heidi Obermeit

MEMBERS OF THE PUBLIC PRESENT: 9

PUBLIC COMMENT: 3

ACTIONS TAKEN:

1. Approval of the July 22, 2019 Regular Meeting Agenda

M/S/C (de Tournay/Twu) to approve the agenda for the July 22, 2019 regular meeting.

Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

2. Approval of the June 24, 2019 Meeting Minutes

M/S/C (de Tournay/Stein) to approve the June 24, 2019 regular meeting minutes.

Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

3. Action to Send a Letter to City Council Supporting the Two Concepts for the City of Berkeley Solid Waste and Recycling Transfer Station Feasibility Study

M/S/C (de Tournay/Golin) to approve sending a letter to City Council supporting the two concepts for the City of Berkeley Solid Waste and Recycling Transfer Station

Feasibility Study that were presented at the June 24, 2019 Zero Waste Commission meeting. Action to:

1) Concur with the two concepts to be submitted for City Council approval at the November 5, 2019 City Council work session.

2) Support the inclusion of both concepts in the next phase of the Project: a Request for Proposal (RFP) to comply with California Environmental Quality Act (CEQA) requirements.

Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

4. Adjournment at 8:57 p.m.

M/S/C (de Tournay/Stein) to adjourn the meeting at 8:57 p.m.

Ayes: Unanimous; Abstain: None; Absent: Poliwka, Schueler, Lombardi

The next regular meeting of the Zero Waste Commission will be held on Monday, Sept. 23, 2019 at 7:00 p.m. at the City of Berkeley Corporation Yard (Ratcliff Bldg, Willow Rm), 1326 Allston Way.

Respectfully Submitted:

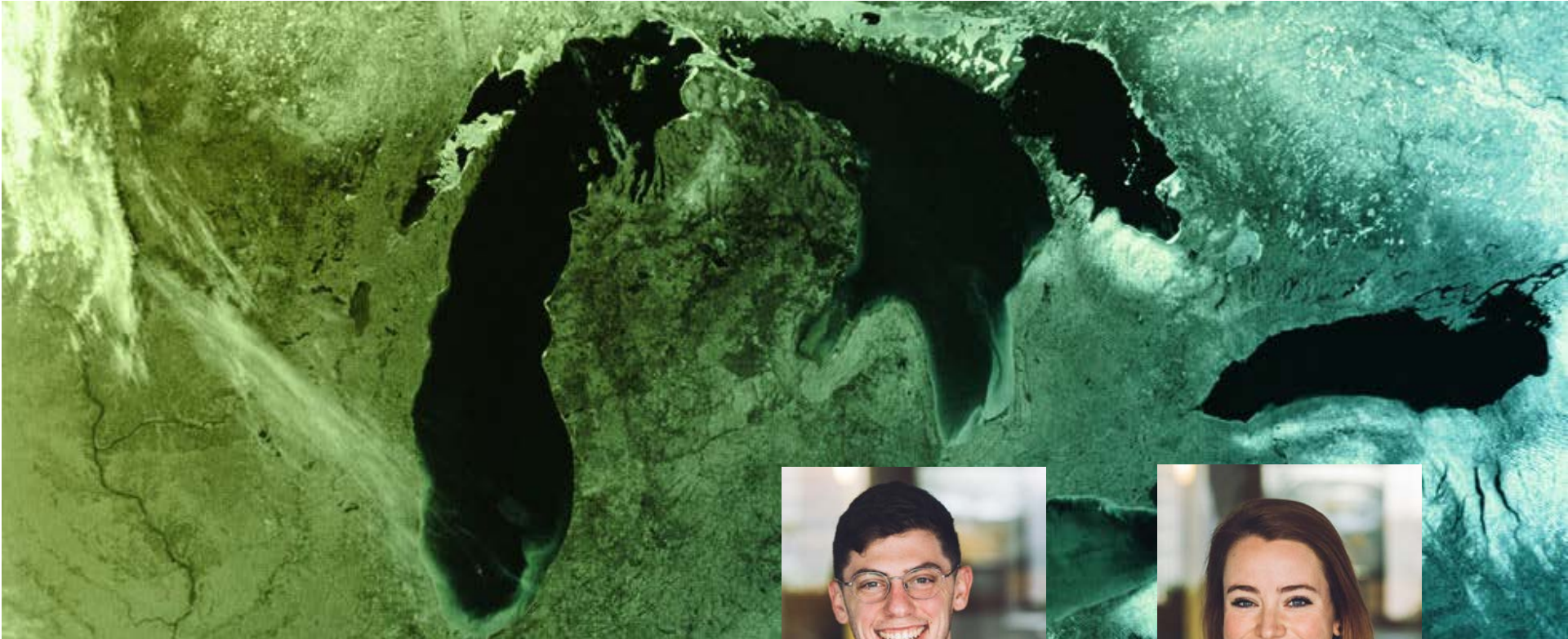
Heidi Obermeit, Secretary



*C&D MATERIALS MARKETS:
IDENTIFYING OPPORTUNITIES
REGIONALLY & LOCALLY*

JULY 31, 2019

ABOUT DELTA INSTITUTE



Martin Brown
Programs Specialist



Megan Walton
Sr. Programs Associate

www.delta-institute.org

  @DeltaGreatLakes

ABOUT DELTA INSTITUTE

Delta Institute is a Chicago-based nonprofit that collaborates with communities to solve complex environmental challenges across the Midwest.

Since 1998, Delta's been working with public and private partners.

We **design**, **test**, and **share** market-based environmental solutions that yield social, environmental, and economic benefits for communities.



MATERIAL MARKETPLACE SCALES



Region:
EPA Region 5



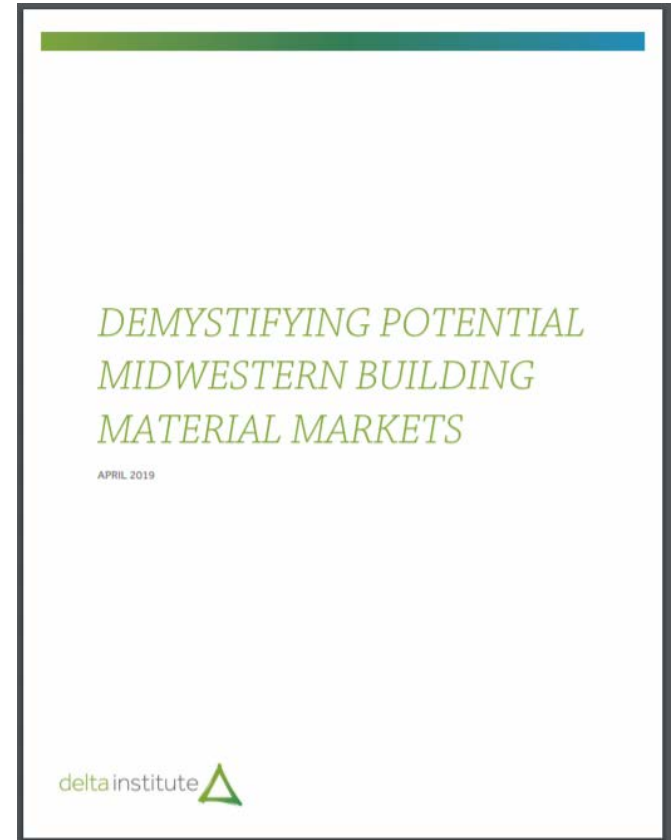
City:
St. Louis



Structure:
St. Louis Warehouse

C&D MATERIAL IN REGION 5

- Construction and demolition (C&D) waste comprises a **significant portion of the waste stream** in the Upper Midwest.
- C&D material represents **economic opportunity** when it is able to enter the market as raw material
- EPA has determined that **recycling C&D material generates creates more jobs, wages, and taxes than any other material stream**



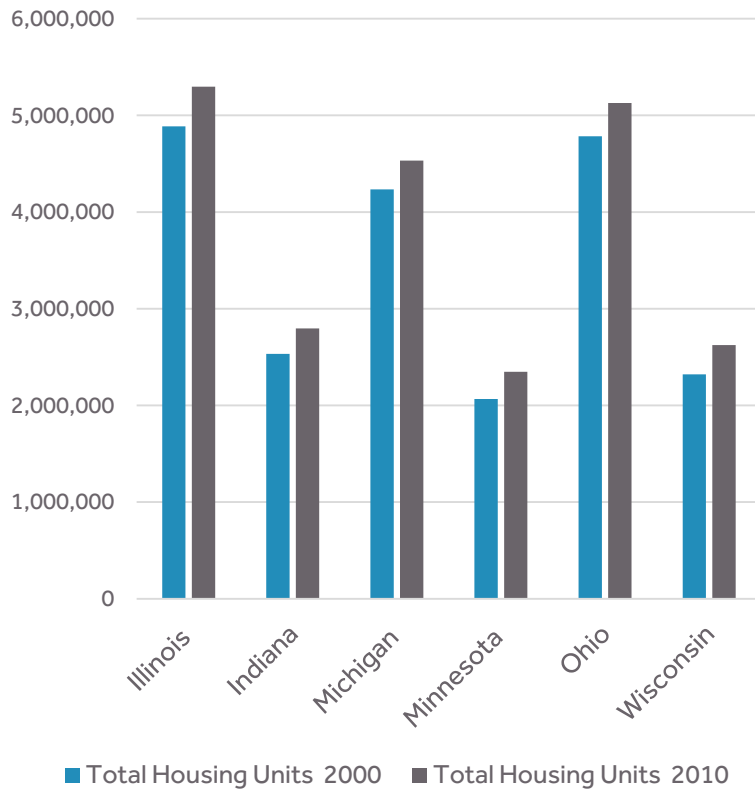
bit.ly/demystifyingwaste

C&D DEBRIS GENERATION

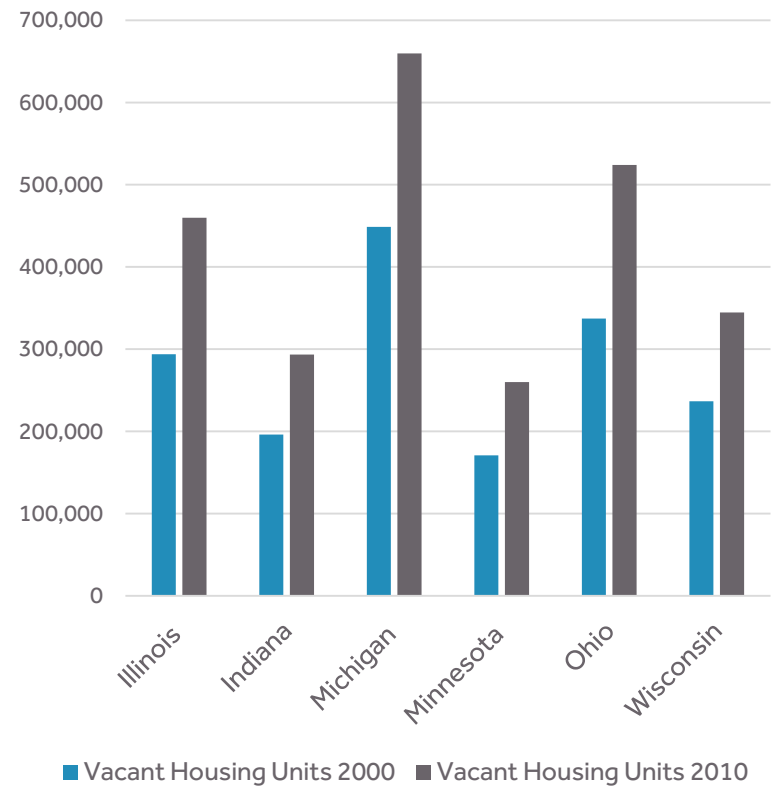
Activity Type	C&D Debris Generation
Residential Construction	4.9 lbs. / sqft. (average)
Nonresidential Construction	4.34 lbs. / sqft. (average)
Residential Demolition	50 - 158.7 lbs. / sqft.
Nonresidential Demolition	36 - 358 lbs. / sqft.
Residential Renovation	3.31 - 72.1 lbs. / sqft.
Nonresidential Renovation	3 - 28.49 lbs. / sqft.

CONSTRUCTION & DEMOLITION

TOTAL HOUSING UNITS BY STATE: 2000 & 2010



VACANT HOUSING UNITS BY STATE: 2000 & 2010



C&D DEBRIS GENERATION BY MATERIAL

Material Type	Estimated Quantity (1,500 sq ft Home)
Framing lumber	4,000 board feet
Standard brick	5,000 bricks
Asphalt shingles	650 sq ft
Concrete	37 cubic yards
Drywall	1,445 sq ft
Siding (80% vinyl, 15% aluminum, 5% other)	1,620 sq ft

MATERIAL PRESENT IN REGION 5

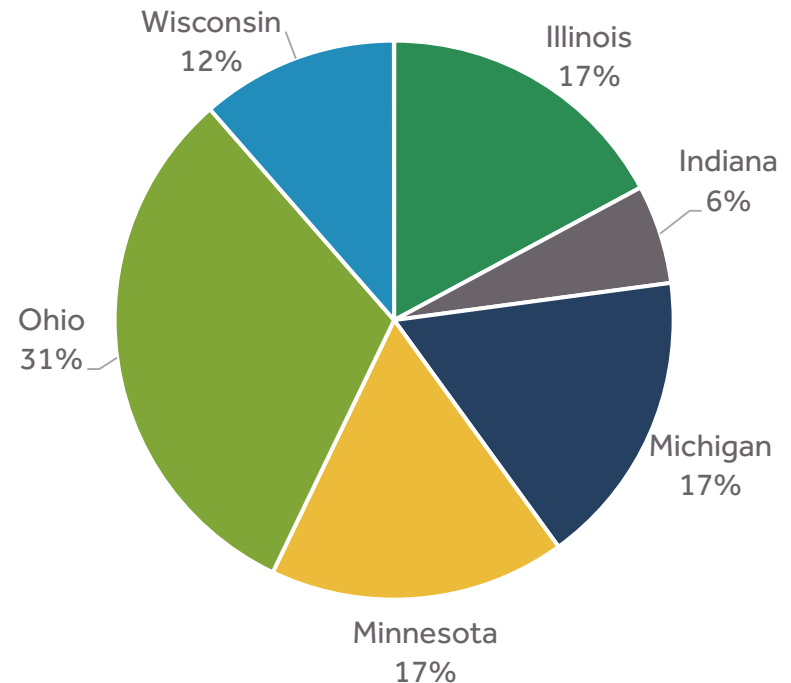
Material	Estimated Quantity (1,500 sq ft home)	Estimated quantity in 16% of Vacant Home Region 5 homes
Framing lumber	4,000 board feet	Over 1.6 billion board feet
Standard Brick	5,000 bricks	Over 2 billion bricks
Asphalt Shingles	650 sq ft	Over 264 million sq ft
Concrete	37 cubic yards	Over 15 million cubic yards
Drywall	1,445 sq ft	Over 588 million sq ft
Siding (80% vinyl, 15% aluminum, 5% other)	1,620 sq ft	Over 658 million sq ft

LUMBER

Three distinct markets for reclaimed wood are relatively well established.

- **Old-growth lumber** recovered from older structures often used in furniture or for aesthetic interior design purposes.
- **Later-period lumber** in good condition can be lightly processed and reused for items like crates or pallets in lieu of virgin material.
- **Low quality wood** can be heavily processed to create products such as mulch, particle board, or wood pellets.

DISTRIBUTION OF REUSED WOOD ORGANIZATIONS IN REGION 5



BRICK

Brick (along with wood) has the most potential for immediate reuse value, but **value can vary widely depending on the age, style, and condition** of the bricks. Holes and frogs, paint, and remnants of tough mortar typically make bricks less valuable for resale.

Though less common than salvaging for reuse, bricks can also be **processed and recycled as aggregate** at different sizes. Sioux City Brick in Iowa sells crushed recycled brick for landscaping and backfill purposes, and as baseball diamond and running track material for their most finely ground brick.



ASPHALT SHINGLES

Existing end markets for recycled asphalt shingles include **addition to asphalt mixes, production of new roofing shingles, and use as aggregate**

In 2009, IL Tollway conducted a study to determine the effect of adding RAS to roadway asphalt mixes. Adding up to 5% RAS to asphalt mixes **reduced costs and improved long term durability of pavement**. Between 2010-2015, over 24,000 tons of asphalt shingles were diverted, resulting in \$21 million in cost savings.



FINDINGS

FINDINGS

Region 5 states are disposing a significant amount of C&D material and have opportunity to divert a portion of that material from landfills

Baseline waste Generation in Region 5:

14 million tons of C&D debris disposed per year



FINDINGS

Data is inconsistent

Throughout Region 5 states, counties, and municipalities, waste generation and characterization data is collected inconsistently,



FINDINGS

There are jobs and capital already present in industries with the potential to include reused or recycled C&D

In Region 5, these industries employ 6,000 to over 14,000 people per state and have \$2 to \$3 billion in sales per state



FINDINGS

Opportunities for reuse are not as prevalent as opportunities for recycling

Markets are generally **much stronger for material recycling than reuse**, and reuse opportunities typically exist at a very small scale.

Recycling material is a significant improvement over landfilling, but material reuse can avoid energy-use and costs associated with extracting materials and producing new products, while also diverting material from landfills.

QUESTIONS + DISCUSSION

Megan Walton

Senior Programs Associate

mwalton@delta-institute.org

Martin Brown

Programs Specialist

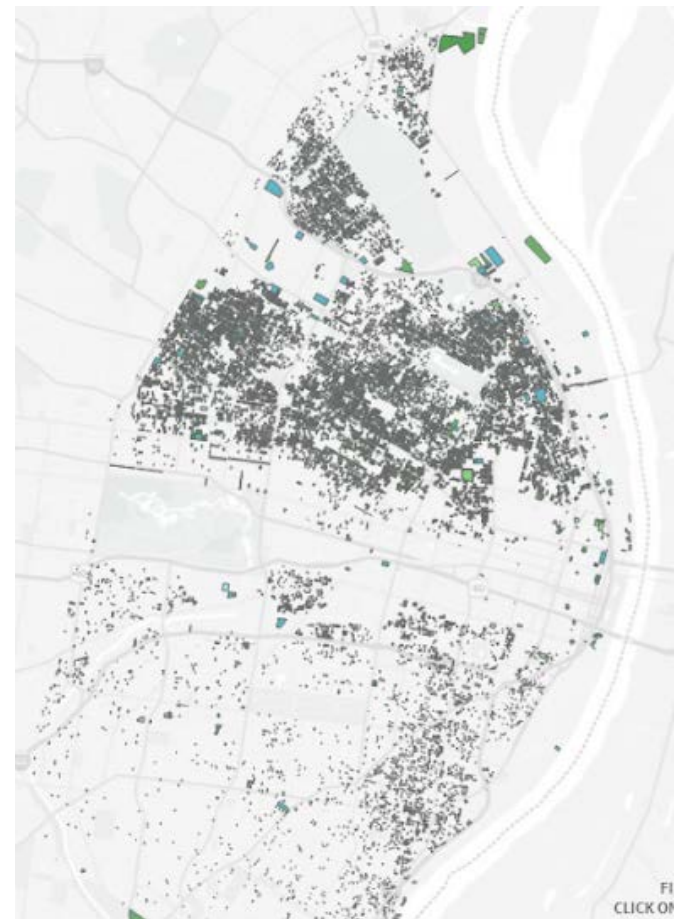
mbrown@delta-institute.org

*ST. LOUIS
DECONSTRUCTION
MARKET ASSESSMENT*



VACANCY & DECONSTRUCTION IN ST. LOUIS

- **~8,000 Vacant Buildings**
 - 90/10 Brick/Frame
 - Most Built Prior to 1930
 - Vacant less than 10 years
 - Concentrated in areas with less access to employment
- **Drain on the region**
 - Quality of life and safety
 - Property tax loss
 - Costs of maintenance



ST. LOUIS DECONSTRUCTION PROGRAM



ST. LOUIS DECONSTRUCTION PROGRAM



DECON BENEFITS

Environmental & Public Health

- Increased Waste Diversion (Reuse and Recycling)
- Increased potential for environmental abatement
- Less dust than standard 'smash & grab' demolition

Economic

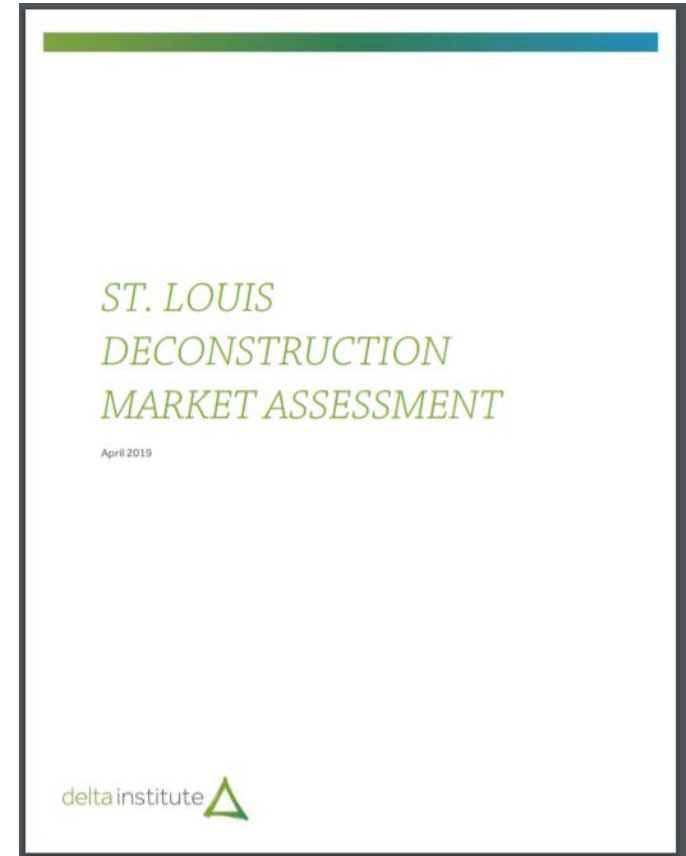
- Job creation (requires more labor)
- Value generated through reused materials
- Opportunity for value added processing
- Opportunity to turn the vacancy challenge to a positive



DECONSTRUCTION MARKET ASSESSMENT

Goals:

- Identify national trends in Deconstruction
- Identify local and regional stakeholders in Deconstruction Market
- Assess regional demand for reclaimed building materials
- Quantify local supply of reclaimed building materials
- Estimate economic & environmental impacts
- Provide recommendations



bit.ly/STLDecon

FINDINGS

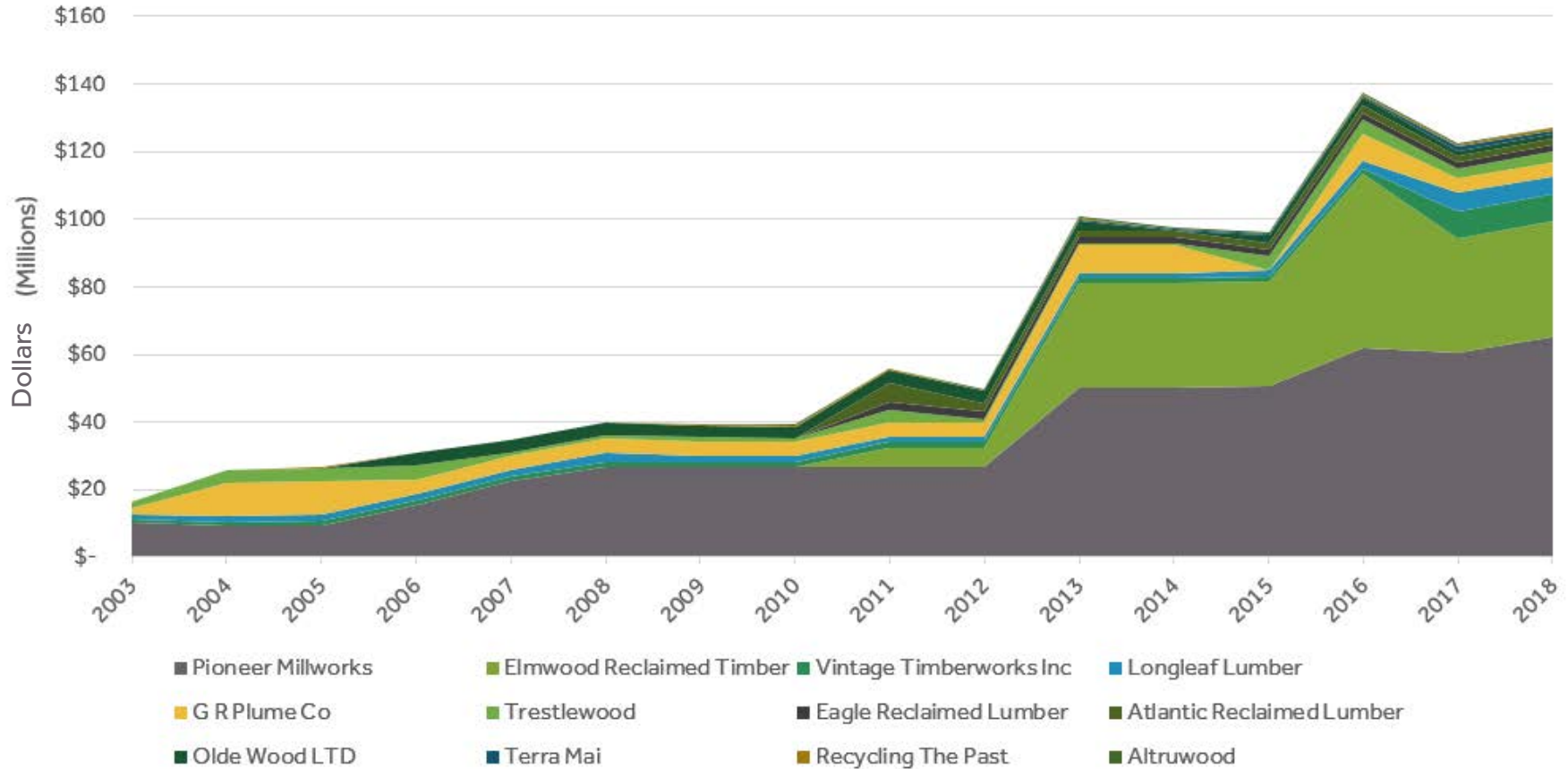
KEY FINDING

Nationally, deconstruction and material salvage industries are growing with support from public and private organizations and agencies.



NATIONAL TRENDS: EMERGING MARKETS

Sales Volume of Key Players in US Reclaimed Lumber Market



NATIONAL TRENDS: POLICY

San Jose, CA (2001)

Contractors pay a deposit, refundable upon receipt of documentation that 75% of C&D debris is recovered and diverted

Madison, WI (2010)

Buildings projects with steel and concrete supports must recycle 70% of materials. New wood supported structures and remodeling projects greater than \$20,000 must reuse or recycle **all** wood, non-toxic metals, scrap drywall, cardboard, and shingles

Cook County, IL (2012)

Minimum 70% of C&D waste from all building projects must be diverted from landfill where 5% of waste from residential projects must be reused

Portland, OR (2016)

Homes built before 1917 must be deconstructed



Illinois' Cook County Approves Demolition Debris Recycling Law

Allan Geriat | Jul 31, 2012

NATIONAL TRENDS: HISTORIC PRESERVATION



Wabash L Station, Chicago

KEY FINDING

A strong network of stakeholders for both supply and demand of reclaimed building materials exists in St. Louis, and the network has the potential to grow.



STAKEHOLDERS

Stakeholder Group	Description	Role	Benefit from Increase in Material Reuse
Demolition & Deconstruction Contractors	Individuals and companies that generate C&D debris as a byproduct of their work	Generate materials	Increased revenue from reclaimed materials
Building Material Reuse Marketplaces	Retail store and warehouses that sell reclaimed building materials to the public	Make materials publicly available	Increase in materials for resale
Design Build	Entities that incorporate reclaimed materials into building and interior design	Transform materials into high value items Mainstream and introduce aesthetic to broader audiences	Local and reliable sources of materials
Material Wholesale (Regional/National Scale)	Individuals and companies who purchase large quantities of commodity-level salvaged and reused building materials, like brick and lumber, to be retailed	Aggregate materials for large scale processing	More raw materials for processing
Value Added Processors	Entities that use reclaimed building materials to create new products	Transform materials into high value items	Local and reliable sources of materials

KEY FINDING

Salvageable building materials in St. Louis' vacant structures have economic potential and are in high demand.



BUILDING MATERIAL SUPPLY

Total Potential Brick Salvage:

- **24.8 million bricks** (or 49,600 pallets of brick)

Total Potential Lumber Salvage:

- **10.4 million board feet** of old growth lumber



BUILDING MATERIAL DEMAND

Lumber

- Rough sawn lumber
- Old growth lumber

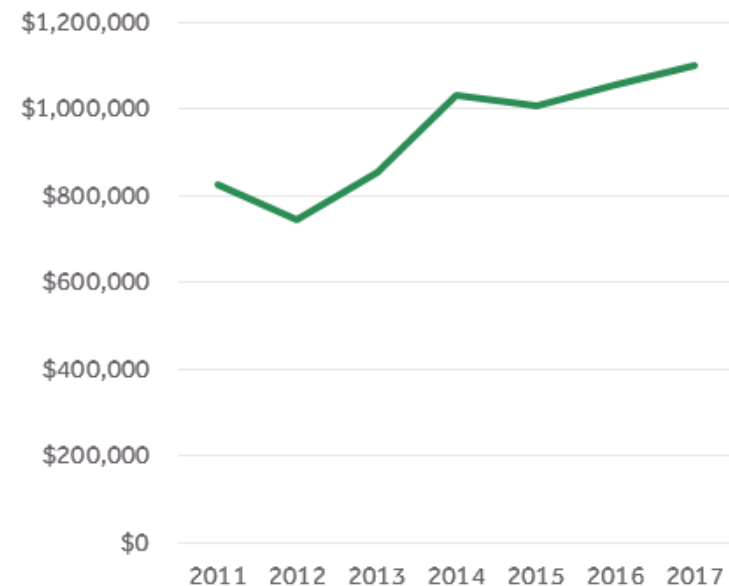
Brick

- Interior and exterior brick
- Quality of St. Louis bricks

Finishes / other

- Interior finishes and appliances, exterior architectural elements

HABITAT FOR HUMANITY ST. LOUIS
RESTORE SALES REVENUE



KEY FINDING

Deconstruction of vacant, publicly-owned properties in St. Louis has the potential to increase the economic impacts of planned vacant structure removal programs.



ECONOMIC IMPACT: MATERIAL VALUE

Group 1: Best Condition

- 100% Salvage Rate

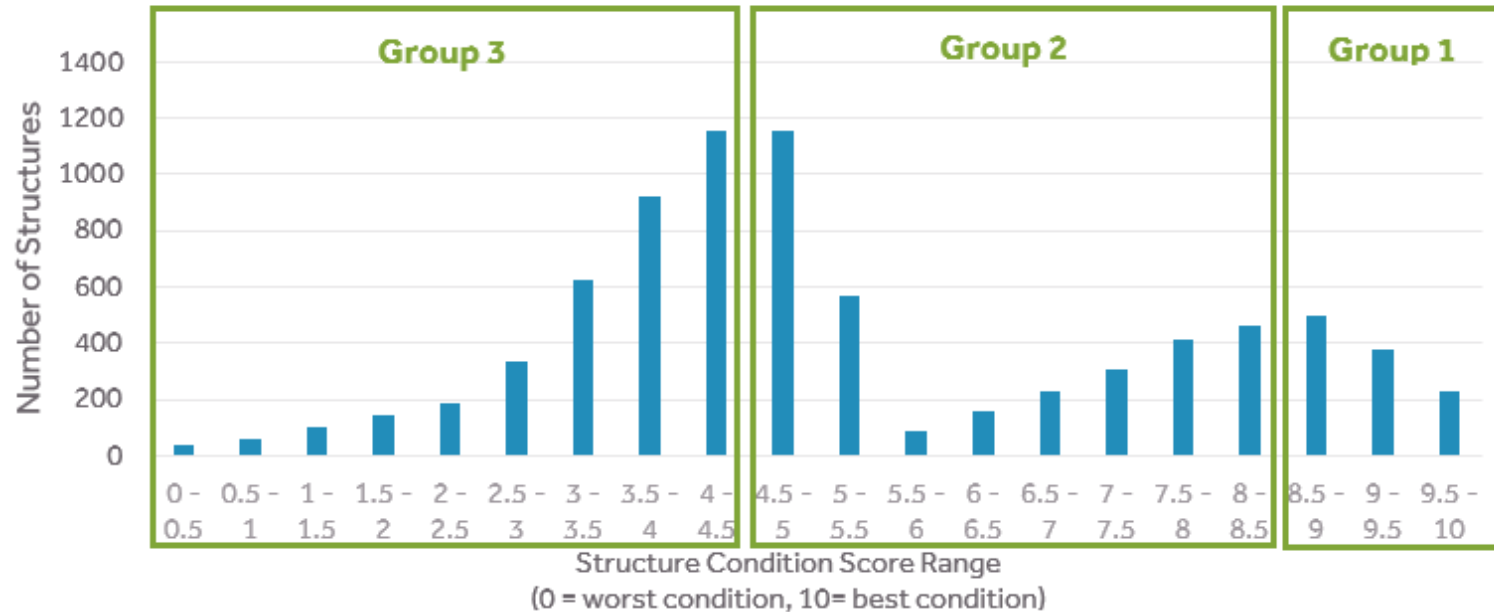
Group 2: Middle Condition

- 50% Brick Salvage Rate
- 25% Lumber Salvage Rate

Group 3: Worst Condition

- 25% of Brick

DISTRIBUTION OF STRUCTURE CONDITION SCORE



ECONOMIC IMPACT: MATERIAL VALUE

Group 1: Best Condition

- \$7.9 Million

Group 2: Middle Condition

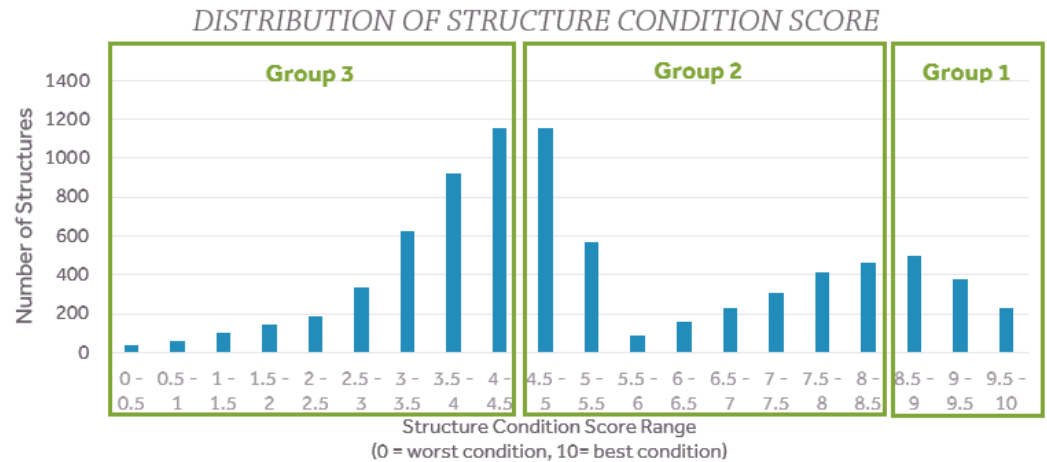
- \$8.1 - \$27.9 Million

Group 3: Worst Condition

- \$2.1 - \$3.4 Million

TOTAL ESTIMATED VALUE:

- \$18.2 - \$39.3 Million



ECONOMIC IMPACT: COST

Demolition



Per Sq. Ft.

Deconstruction



Per Sq. Ft.



ECONOMIC IMPACT: LABOR & WAGES



2-3

Ave. Crew
Size

2-3
Days

Project
Duration

6-8

Ave. Crew
Size

10-15
Days

Project
Duration

ECONOMIC IMPACT: 2018 DEMOLITIONS

Indicator	All Demolition (Baseline)	All Deconstruction (Scenario 1)	10% Deconstruction (Scenario 2)	50% Deconstruction (Scenario 3)
Estimated Labor Hours (Low)	14,336	215,040	21,504	107,520
Estimated Labor Hours (High)	21,504	430,080	43,008	215,040
Estimated Wages Paid (Low)	\$ 243,042	\$3,349,516	\$334,951	\$1,674,758
Estimated Wages Paid (High)	\$ 364,564	\$6,699,033	\$669,903	\$3,349,516

KEY FINDING

Deconstruction and building material salvage has significantly improved environmental outcomes, compared to traditional demolition.



ENVIRONMENTAL IMPACTS

- Produces significantly less dust than demolition
- Reduces risk of lead and particulate exposure
- Results in significant reductions in waste generation and GHG emissions

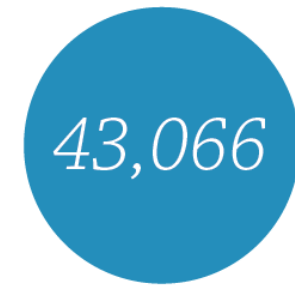
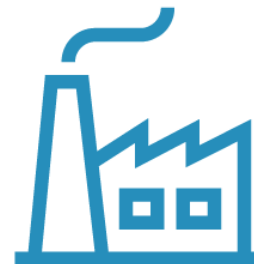
Reduce Waste Generation by:



Tons



Reduce Green House Gas Emissions by:



MTCO₂E

ENVIRONMENTAL IMPACTS

Material	Estimated Quantity Recovered for Reuse	Waste Reduction Potential	GHG Reduction Potential (MTCO2E)
Bricks	24.8 mil bricks	111,700 tons	14,996
Lumber	10.4 mil board feet	14,800 tons	28,070
TOTAL		126,500 tons	43,066

Reducing 43,066 Metric tons of CO2E is equivalent to removing annual emissions from **over 9,000 passenger vehicles** or conserving over **4.8 million gallons of gasoline**.

RECOMMENDATIONS

RECOMMENDATIONS

Policy:

SLDC and city departments should convene a **local advisory committee** to consider developing legislation to encourage or require building material reuse in St. Louis.

Training:

SLDC in collaboration with other city departments should consider funding and supporting **deconstruction training at multiple experience levels** for demolition contractors and other interested workers.

Prioritization:

SLDC should work with the LRA and Building Division to develop and use condition scoring criteria and building inspector recommendations to help **prioritize building deconstruction.**

RECOMMENDATIONS

Packaging Bids:

SLDC and the LRA should work with the Building Division to bid demolitions and deconstructions in larger packages to allow for significant quantities of materials to be aggregated for donation or resale.

Incentives:

SLDC should encourage real-estate developers and the private sector to salvage reclaimed building materials and incorporate deconstruction into development projects.

Brokering:

SLDC should consider a partnership with state and regional entities to help join or create an online system for brokering reclaimed building materials.

WHAT'S NEXT?



QUESTIONS + DISCUSSION

Megan Walton

Senior Programs Associate

mwalton@delta-institute.org

Martin Brown

Programs Specialist

mbrown@delta-institute.org

STL - MO

REEFAB

DECONSTRUCTION + REEMPLOYMENT



DECONSTRUCTION



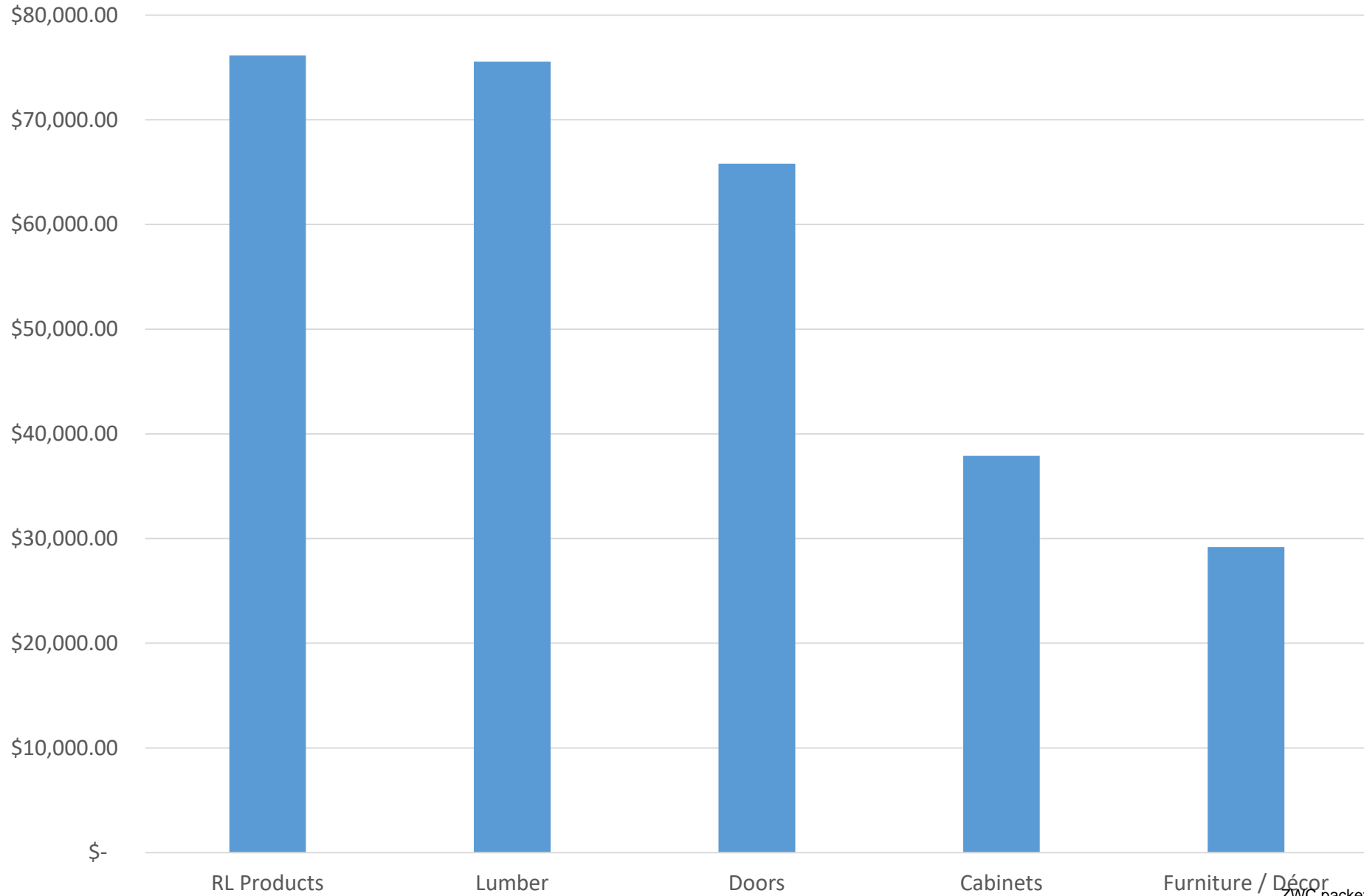
REEMPLOYMENT



RECLAIMED RESALE

REFABRICATION

Last 12 Months



A photograph of two construction workers on a roof. The worker on the left is wearing an orange hard hat, safety glasses, and a high-visibility vest. The worker on the right is wearing a yellow hard hat and a high-visibility vest. They are both using tools to work on the wooden rafters of a roof. The word "QUESTIONS?" is overlaid in large black text across the center of the image.

QUESTIONS?

REFAB

ERIC SCHWARZ

3130 GRAVOIS AVE STL MO 63118

ERIC@REFABSTL.ORG

314-357-1392

Two concerns today:

One a process within the reach of Berkeley to initiate, and the other a plea to address the needs of Berkeley residents to recycle foams and plastic films now that China is not accepting and probably never were properly recycling our terrible shameful mess.

1. Bulk pick-up: Must be recycled!!! I was told I had to bring it in myself if I wanted it recycled. I don't have a vehicle that I can load it in and some of the material is too heavy for me to lift. But I don't want it to just be dumped. Bulk pick-up needs to also included as part of Berkeley's Zero Waste 2020 goal. Sorting it would do that.

2. Foam and Plastic Film Recycling Possibilities

El Cerrito is recognized by The Journal of the American Institute of Architects "a demonstration project for zero net waste, net zero energy use, restoration and regeneration, and maximizing community value." Local citizens started it in 1977.

El Cerrito uses a densifier to press the air out of the foam and make it into ingots. The ingots are picked up and further recycled at

Super Link Plastics, Inc.
888 92nd Ave
Oakland, CA 94603
1(510) 568-1086

At Super Links the plastic material will be ground, washed, melted, and pelletized to be ready to use again to make new products. For OCC/fiber, the material will be sorted, pulped, filtered and de-inked, and mixed with virgin material to produce new fiber products.

I haven't been able to connect with them to find out about their end market or if they are still transferring the resulting materials to Hong Kong and China.

But Berkeley could produce these raw plastic materials themselves and sell them to markets who buy make products out of recycled plastic. There are several types of densifiers that can be purchased from

GreenMax Intco Recycling <https://www.intcorecycling.com/>
Headquarters 805 Barrington Ave. Ontario, CA 91764 1 (909) 509-4199

The machines are costly, but grants are available look in HomeforFoam.com ; search grants.

For plastic film we can partner with Novolex at novolex.com who recycle plastic film to make plastic film products.

I am willing to work with the people here most likely to be able to move these two items forward.

Thanks.
Adele Poenisch
apoe@apclimatesolutions.com
408 293 0679
apclimatesolutions.com > click on : On My Mother's Gravestone and scroll down.



July 17, 2019

Gwen Huff
Materials Management and Local Assistance Division
California Department of Resources Recycling and Recovery
P.O. Box 4025
Sacramento, CA 95812

RE: City of Berkeley Comments on SB1383 Proposed Regulations Released June 2019

Dear Ms. Huff,

The City of Berkeley appreciates the opportunity to comment on the proposed SB1383 regulations.

Berkeley strongly supports the goals and intent of SB1383. The City of Berkeley implemented one of the first curbside recycling programs in the country in 1973 and began curbside compost collection in 1996. Berkeley adopted a zero waste goal in 2005 and approved a Climate Action Plan in 2009 to reduce the City's greenhouse gas emissions. Berkeley also opted in to Alameda County's Mandatory Recycling Ordinance in 2012, which requires businesses and multifamily dwellings to recycle and compost.

As we assess the effects of these new regulations on our city, we have been working collaboratively with StopWaste to address the impacts on all cities in Alameda County. City of Berkeley staff participated in the SB1383 Taskforce and the Food Recovery Stakeholder Group, both convened by StopWaste to solicit impacted jurisdictions feedback and hopefully build awareness among food recovery stakeholders on the specifics of the proposed SB1383 implementation. With years of experience implementing the mandatory recycling ordinance, food waste prevention, and developing markets for compost and mulch, StopWaste staff has provided input and feedback to CalRecycle with the goal of creating implementable regulations that will support the ambitious organics diversion and food waste reduction targets set by SB1383.

A table of the detailed comments and recommendations submitted by StopWaste is attached. City of Berkeley staff contributed to, and fully support, these comments and recommendations. In addition, please review in depth the following comments on issues of specific concern to Berkeley. The City of Berkeley respectfully requests that CalRecycle address the submitted comments and incorporate the recommendations into the final regulations.

Section 18984.1 Three-container Organic Waste Collection Services

- **Compostable plastics:** Plastic bags should not be allowed in the green container. If plastic bags are to be allowed to be disposed of in the green container and provided the compost processing facility “can process or remove that material,” we recommend this language be consistent for compostable bioplastics meeting the ASTM D6400 standard as well. Compostable bioplastics should only be allowed if the facility can “process, recover, or remove” them. We recommend this language be updated in all sections, including Section 18984.4 Recordkeeping Requirements for Compliance with Organic Waste Collection Services and Section 18994.2 Jurisdiction Annual Reporting. Also, we are concerned that compost processors will not want to put in writing that they accept compostable plastics because these “synthetic materials” may violate National Organic Program standards or Organic Materials Review Institute certification.
- **Container lid colors:** Berkeley has spent millions of dollars to implement and is committed to a dual-stream recycling program. Dual-stream recycling reduces residuals and keeps recyclables cleaner and more marketable. We are concerned about the color requirement impacts on Berkeley’s dual-stream recycling program. Our residential dual-stream recycling program utilizes a split cart. The split cart body is blue. However, the lid on the containers (bottles/cans/ plastic containers) recycling side blue and the lid on the fiber (cardboard/paper) recycling is brown. This lid color contrast ensures residents differentiate between the two material stream types. Brown works well for fiber since the color is evocative of cardboard boxes and brown paper bags. By specifying dark blue for fiber and brown for food scraps, Berkeley will be unable to utilize brown for the fiber side of our dual-stream recycling program. Please note that Berkeley’s recycling program residual rate is less than 5%. We are concerned the switch from brown to blue will lead to cross contamination of the two recycling streams. One suggestion could be to mandate consistent container body colors, but allow greater flexibility in regards to lid colors, especially for programs with split carts.



City of Berkeley dual-stream recycling program split cart

Section 18984.5 Container Contamination Minimization

- **Route reviews:** While we appreciate the change in frequency from quarterly to annual route reviews, we recommend that annual route reviews focus on commercial generators, instead of all collection routes. Single-family residential volumes tend to be steady with some seasonality and the material tends to be much cleaner than multifamily or commercial sector material. This change will allow our jurisdiction to focus the limited resources we have to where they have the most impact.

Section 18984.7 Container Color Requirements

- **Container exchanges:** If containers will be changed to a different color, we recommend the exchange of carts be completed in batches or all at one time, as opposed to switching out individual containers at the end of their anticipated useful life. Switching out individual carts with new carts of a different color will most likely lead to confusion and its resulting contamination. This would also require us to provide educational material explaining the change in colors to individual residents and businesses when their carts reach the end of their useful life, which is not as efficient as providing information in batches to specific geographic areas or to all residents at once.

Section 18984.11 Waivers Granted by a Jurisdiction

- **Allow designees to issue waivers:** We ask that CalRecycle restores the ability of cities to allow designees to issue waivers. StopWaste currently issues waivers in Berkeley as part of the Alameda County Mandatory Recycling Ordinance (MRO). This reduces duplication of efforts and increases efficiency.
- **De minimis waivers:** If total solid waste collection service is defined as all collection service (garbage, recycling, and organics), the threshold of what qualifies as de minimus should be based on the quantity of material in the gray garbage container, not based on the total amount of material the generator is already diverting in the recycling or compost containers.

Section 18991.3 Commercial Edible Food Generators

- **Food Waste Prevention and Edible Food Recovery:** The biggest climate benefit is achieved through the prevention of food waste. We strongly recommend incorporating incentives to induce individuals and organizations to reduce food waste upstream of its disposal.

Section 18993.1 Recovered Organic Waste Product Procurement Target

- **Compost procurement:** In alignment with the comments submitted by StopWaste, we support the need to build urban compost markets throughout the state. However, it would be more effective to base procurement targets on the potential for compost use in a jurisdiction to build healthy soil. We strongly disagree with procurement targets for cities based on population and GDP because neither is related to the actual need for compost. Composters do not have a problem selling quality compost and composters serving the Bay Area sell out every year. However, badly produced compost or compost with plastic in it does not have a market. We recommend that cities be allowed to refuse compost that does not meet their specifications without being penalized. For cities that rely on composting to process organics, the use of renewable gas products to meet procurement targets is not realistic due to insufficient production. In addition, with the passage of SB 100, biogas is broadly regarded as a bridge fuel to electrification and actively opposed by the decarbonization community, not a long-term means to meet state goals or the procurement target. We also recommend that the state allow the

procurement of mulch to meet targets that are established by those cities/agencies managing the food and green waste composting systems or vendors.

The City of Berkeley currently procures approximately 1,650 tons of compost annually. This compost is provided to residents for free at monthly compost giveaways and is donated to Berkeley's community gardens and school gardens. As currently drafted, the procurement requirements would require Berkeley to procure a total of 5,600 tons of compost annually. To meet this procurement amount, the additional compost material alone would cost the City an estimated \$350,000 plus transportation and handling costs. We support the California League of Cities' recommendation to address procurement and work to develop markets for these materials in a separate regulatory proceeding.

Section 18994.2 Jurisdiction Annual Reporting

- **Annual reporting deadline:** In order to reduce duplication of efforts and the amount of staff time dedicated to reporting, we ask that the initial annual reporting deadline align with the current EAR CalRecycle reporting due dates. We request that the due date for the report covering the period of January 1, 2022 through December 30, 2022 be due August 1, 2023. This would remain consistent with current EAR and subsequent SB1383 reporting deadlines. We do not believe it makes sense to report on the first half of 2022 twice.

Section 18995.1 Jurisdiction Inspection and Enforcement Requirements

- **Frequency of waiver re-verification:** We do not believe it makes sense to verify de minimis and physical space waivers every 24 months. This frequency would require us to dedicate resources on the smallest generators. It would be more impactful to focus our time on larger generators.

Section 18995.1 Jurisdiction Inspection and Enforcement Requirements

- **Department requests for records:** While we appreciate the change in reporting requirements from one day to ten days, we do not believe 10 business days is a reasonable amount of time to provide reports to the Department. In Berkeley, one staff person is responsible for all waste-related reporting. With many demands on staff time, and the possibility of the relevant staff person being out of the office when the request is made, it would be difficult to comply with a 10 day turn-around time. Therefore, at a minimum, this should be a forty-five (45) day reporting deadline.

Section 18995.2 Implementation Record and Recordkeeping Requirements

- **Flexibility in record keeping:** StopWaste has taken on aspects of generator compliance through the MRO on behalf of the City of Berkeley. This involves data management and storage of thousands of letters and photographs, which would be incredibly difficult, time-consuming and redundant to transfer copies of all of these documents to our jurisdiction monthly. For efficiency, we recommend that record-

keeping requirements allow for portions of the implementation record to be held by designees, given that the record is readily accessible by CalRecycle when requested.

In general, we support the goals and intent of SB 1383. To that end, our comments are aimed at helping the Department create regulations that can be successfully implemented by our jurisdiction and by our food recovery stakeholders. The City of Berkeley appreciates the inclusive stakeholder process CalRecycle has undertaken. We look forward to continued opportunities to comment on specific proposals, and we look forward to ongoing conversation with CalRecycle to work toward our common goals.

Sincerely,

Phil Harrington
Public Works Director
City of Berkeley

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	18981.2	Implementation Requirement on Jurisdictions	3	40	d) Nothing in this chapter authorizes a jurisdiction to delegate its authority to impose civil penalties, or to maintain an action to impose civil penalties, to a private entity.	Delete or change to: d) Nothing in this chapter authorizes <u>prohibits</u> a jurisdiction to delegate its authority to impose civil penalties, or to maintain an action to impose civil penalties, to a private entity.	We want the jurisdictions to be able to allow franchised haulers to assess fees for container contaminants or lack of service if they want to amend their franchise to do that.	Does this mean that a jurisdiction can't have the franchised hauler give fines to generators for container contaminants? Maybe those kinds of "fees" are not considered "civil penalties", though?
1	18982	Definitions	5	10	(14.5) "Designated Source Separated Organic Waste Facility... (B The facility is a "compost operation" or "composting facility" as defined in Section 18815.2(a)(13) of this division that has less than 10 percent organic waste contained in materials sent to disposal...	Allow time for composting facilities to meet this standard based on the interim 50% goal.	This standard is not currently being met by any facilities in the state to our knowledge and it's doubtful that they would be able to by 2022. At this point, overs sent to ADC being mainly organic material by weight. This would effectively eliminate the option of the performance-based pathway for all jurisdictions in the state. What this would mean is that existing programs like those in Alameda County and San Francisco would have to shift over to align with new state requirements, which we know is not the intent.	
1	18982	Definitions	6	35	26) "Food recovery service means a person or entity that collects and transports edible food from an edible food generator to a food recovery organization or other entities for food recovery.	26) "Food recovery service" means a person or entity that collects and transports edible food from a commercial edible food generator to a food recovery organization or other entities for food recovery.	For consistency with change in definition for "Food recovery organization" and to match to definition of commercial edible food generator that's only Tier One and Tier Two.	
1	18982	Definitions	7	11	28) "Grey container" means a container where the lid of the container is entirely a shade of grey or black in color. Hardware such as hinges and wheels on a green container may be a different color.	28) "Grey container" means a container where the lid of the container is entirely a shade of grey or black in color. Hardware such as hinges and wheels on a green <u>grey</u> container may be a different color.	Looks like a typo.	
1	18982	Definitions	11	37	73) "Tier One commercial edible food generator" means a commercial edible food generator that is one of the following: A) Supermarket. B) Grocery store with a total facility size equal to or greater than 10,000 square feet. C) Food service provider. D) Food service distributor. E) Wholesale food vendor.		Food service provider is a changed definition. Some food service providers could be pretty low volume to a commercial entity, so there should be some kind of size qualifier in the Tier One definition or if it's a food service provider operating a cafe/restaurant in a commercial cafeteria-like setting it should be considered to be only for 250 seats or more in Tier Two similar to the restaurants.	
3	18984.1	Three-container Organic Waste Collection Services	17	13	A) Compostable plastics may be placed in the green container if the material meets the ASTM D6400 standard for compostability and the contents of the green containers are transported to Compostable Material Handling Operations or Facilities or In-vessel Digestion Operations or Facilities that have been provided written notification to the jurisdiction that the facility can process and recover that material. The written notification shall have been provided within the last 12 months.	A) Compostable plastics may be placed in the green container if the material meets the ASTM D6400 standard for compostability and the contents of the green containers are transported to Compostable Material Handling Operations or Facilities or In-vessel Digestion Operations or Facilities that have been provided written notification to the jurisdiction that the facility can process and recover or remove that material. The written notification shall have been provided within the last 12 months.	If regular plastic bags are able to be removed, then compostable plastic liners should be able to be removed as an option.	Sometimes the jurisdiction has no direct relationship with the composting facility where their organics are being processed because their franchised hauler has that relationship. Is it okay if the letter is to the hauler? Also, the facility may not want to put it in writing that they accept "synthetic materials" as it may violate the NOP standards.
3	18984.5	Container Contamination Minimization	22	31	(b) A jurisdiction may meet its container conamination minimization requirements by conducting a route review for prohibited container contaminants on randomly selected containers in a manner that results in all collection routes being reviewed annually.	(b) A jurisdiction may meet its container conamination minimization requirements by conducting a route review for prohibited container contaminants on randomly selected containers or previously non-compliant generators in a manner that results in all collection routes being reviewed annually.	Our MRO implementation currently is a routine inspection program that inspects commercial accounts over 1 cubic yard of weekly garbage service (and looks for container contaminants) about every 2 to 3 years or more frequently if they have a history of non-compliance. For our jurisdictions' compliance with this section for commercial accounts, as long as we make sure each commercial route in each jurisdiction gets inspections, our program should count towards meeting these requirements. Our decision of which account to inspect, though, is not technically "random" but based on who we think have been "bad actors" in the past.	
3	18984.5	Container Contamination Minimization	23	14	(4) If a jurisdiction's designee observes visible prohibited container contaminants in a container, the designee shall inform the jurisdiction in writing, each month, with the address of the generator and the date the contaminated container was observed, and if available, any photographic documentation, and what action was taken.	If a jurisdiction's designee observes visible prohibited container contaminants in a container, the designee shall inform the jurisdiction in writing, each month, with the address of the generator and the date the contaminated container was observed, and if available, any photographic documentation, and what action was taken.	We provide monthly reports (in a spreadsheet) to our member jurisdictions of the accounts found in violation and sent an MRO enforcement letter, but we do not provide photos in those monthly spreadsheets. It would be overly burdensome to have to transfer photo files monthly. Or, only make it so you transfer photos if the generator has contaminants on more than three occasions to align with (b)(3).	

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3	18984.5	Container Contamination Minimization	23	22	c) A jurisdiction may meet its container contamination requirements by conducting waste evaluations that meet the following standards ... account for no less than one half of one percent (.5%) of the weekly tonnage collected in the jurisdiction...	We recommend allowing sampling at the transfer station by truck, in addition to pulling samples on the route, and allowing for sampling commercial and residential routes separately.	This sounds like a hybridization of two methods, and does not address the differences composition in commercial and residential SSO streams.	
3	18984.5	Container Contamination Minimization	23	45	(E)(1) Take one sample of at least 200 pounds from the material collected from each container stream for sampling (e.g., a 200-pound sample taken from the contents of all the green containers collected for sampling),	Recalculate appropriate sample size to reflect material characteristics (particle size, etc.).	The 200-lb sample size was calculated for MSW by the US Public Health Service 50 years ago, and was based on particle size typical of MSW at that time (mainly paper, glass, and metal), which is different from the materials and particle sizes in source separated organics, which are smaller and less discrete objects.	
3	18984.5	Container Contamination Minimization	24	30	(d) Nothing in this section limits a jurisdiction from adopting contamination standards, sampling, or noticing protocols that are more stringent or rigorous than the requirements of this section.	(d) Nothing in this section limits a jurisdiction from adopting contamination standards, sampling, or noticing protocols that are <u>as stringent or more stringent or rigorous than the requirements of this section. Proposed waste evaluations shall use a 90% confidence interval.</u>	Allow jurisdictions to develop efficient contamination measurement protocols and require that new evaluation protocols use a 90% confidence interval. This allows for innovation and the development of new technology, and requiring a 90% confidence interval establishes a verifiable standard.	
3	18984.5	Container Contamination Minimization	24	36	(1) Pursuant to Section 17409.5.1, the solid waste facilities processing the jurisdictions green container collection stream recover 75 percent of organic content received at the facility. (2) Pursuant to the sampling conducted of the gray container collection stream by solid waste facilities servicing the jurisdiction pursuant to section Section 17409.5.7-17409.5.7.2 and Sections 20901-20901.2 demonstrates an average weight of organic waste present in gray container material of less than 25 percent.	(1) Pursuant to Section 17409.5.1, the solid waste facilities processing the jurisdictions green container collection stream recover <u>50 percent between January 1, 2022 and December 31, 2024 and 75 percent by January 1, 2025</u> of organic content received at the facility. (2) Pursuant to the sampling conducted of the gray container collection stream by solid waste facilities servicing the jurisdiction pursuant to section Section 17409.5.7-17409.5.7.2 and Sections 20901-20901.2 demonstrates an average weight of organic waste present in gray container material of less than <u>50 percent bewteen January 1, 2022, and December 31, 2024, and 25 percent by January 1, 2025.</u>		
3	18984.6	Recordkeeping Requirements for Container Contamination Minimization	25	20	(3) Copies of all written notices, violations, education and enforcement actions issued or given by the jurisdiction, or its designee, to the generator with prohibited container contaminants. (A) If direct contact other than written notification, the jurisdiction shall include a record of the type of contact provided, and the date contact was made in the implementation record.	(3) Copies of <u>or information regarding</u> all written notices, violations, education and enforcement actions issued or given by the jurisdiction, or its designee, to the generator with prohibited container contaminants. (A) If direct contact other than written notification, the jurisdiction shall include a record of the type of contact provided, and the date contact was made in the implementation record.	If a jurisdiction has a designee, then allow them to provide reports/data to jurisdiction about what was done, but not necessarily copies of all notices, education (may be multiple times of calling), to reduce burden on transferring copies of everything. Other items in the section were changed from "copies" to "documentation", but not this line.	
3	18984.7	Container Color Requirements	25	40	(b) Notwithstanding subdivision (a), a jurisdiction is not required to replace functional containers, including containers purchased prior to January 1, 2022, that do not comply with the color requirements of this article prior to the end of the useful life of those containers, or prior to January 1, 2036, whichever comes first.	Modify so that language doesn't make it seem like once one container is at end of useful life, it needs to be replaced by correct color requirements.	Would not want a mix-match of containers in old colors and containers in new correct colors because it would be confusing. Allow for waiting for the majority of containers in a jurisdiction to be at the end of useful life and switch out all at once OR AT LEAST IN SECTIONS OF THE JURISDICTION. ESPECIALLY GIVEN ALL THE REQUIREMENTS FOR EDUCATION/OUTREAH IN DIFFERENT LANGUAGES, IT WOULD BE A MESSAGING NIGHTMARE TO HAVE DIFFERENT NEIGHBORS ON THE SAME STREET BE USING DIFFERENT COLOR BINS JUST BECAUSE SOME BROKE AND HAD TO BE REPLACED WITH THE NEW COLORS.	
3	18984.1	Property and Business Owner Responsibilities	27	37	1) This subdivision is not intended to permit an employee or agent of the Department, or a jurisdiction, to enter the interior of a private residential property.		Make sure this new language still allows an employee or agent of the jurisdiction to enter into common areas of a multifamily complex to verify that the property has organics service or not. Maybe change to "private residential living space"?	

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3	18984.11	Waivers Granted by a Jurisdiction	28	10	1) De Minimis Waivers: A) A jurisdiction may waive a commercial business's obligation to comply with some or all of the organic waste requirements of this article if the generator is a commercial business that provides documentation or the jurisdiction has evidence demonstrating that: 1) The commercial business's total solid waste collection service is two cubic yards or more per week and organic waste comprises less than 20 gallons per week of the businesses' total waste. 2) The commercial business's total solid waste collection service is less than two cubic yards per week and organic waste comprises less than 10 gallons per week of the businesses' total waste.	1) De Minimis Waivers: A) A jurisdiction may waive a commercial business's obligation to comply with some or all of the organic waste requirements of this article if the generator is a commercial business that provides documentation or the jurisdiction has evidence demonstrating that: 1) The commercial business's total solid waste collection service is two cubic yards or more per week and organic waste comprises less than 20 gallons per week of the businesses' total solid waste <u>in the grey container</u> . 2) The commercial business's total solid waste collection service is less than two cubic yards per week and organic waste comprises less than 10 gallons per week of the businesses' total solid waste <u>in the grey container</u> .	If total solid waste collection service is defined as all three streams of collection service (garbage, recycling and organics), then the threshold of what qualifies as de minimis should be based on what's in the garbage, not what they may be already diverting in the blue or green container. Our MRO approves de minimis waivers if "documentation satisfactory to the Enforcement Official is provided that Covered Materials comprise, on an on-going and typical basis, less than 10% by weights of Solid Waste taken to Landfill(s) from that collection location."	
3	18984.11	Waivers Granted by a Jurisdiction	28	41	c) Notwithstanding Section 18981.2 the authority to issue a waiver authorized by this section cannot be delegated to a designee.	Delete or allow regional agencies/counties or joint powers authorities to be able to issue waivers on behalf of jurisdictions.	We currently issue waivers for our MRO, which our member agencies have agreed to by opting-in to our Ordinance. It's more efficient for us to do it regionally since we are the entity implementing the whole Mandatory Recycling Ordinance.	Why was this line put in?
4	18985.1	Organic Waste Recovery Education and Outreach	33	38	1) For any language that is spoken by more than 10,000 persons or .5% of jurisdiction's residents, and the population speaking that language speaks English less than very well, the jurisdiction shall make the information required by this section available online in that language or languages. In the written materials the jurisdiction provides to its generators the jurisdiction shall include a notice in the applicable language or languages informing its generators where non-English speaking residents can find linguistically accessible information online. 2) For any language that is spoken by more than 50,000 persons or 5% of the jurisdiction's residents, and the population speaking that language speaks English less than very well, the jurisdiction shall include the information required by this section in the materials it provides generators pursuant to subdivision (d).	1) For any language that is spoken by more than 10,000 persons or .5% of jurisdiction's residents, and the population speaking that language speaks English less than very well, the jurisdiction shall make the information required by this section available online in that language or languages. In the written materials the jurisdiction provides to its <u>residential</u> generators the jurisdiction shall include a notice in the applicable language or languages informing its generators where non-English speaking residents can find linguistically accessible information online. 2) For any language that is spoken by more than 50,000 persons or 5% of the jurisdiction's residents, and the population speaking that language speaks English less than very well, the jurisdiction shall include the information <u>or graphics</u> required by this section in the materials it provides <u>residential</u> generators pursuant to subdivision (d).	In diverse urban areas, this is going to require a lot of additional text in multiple languages in the written materials that will end up cluttering up the messages we are trying to get across. Allowing for graphics would transcend language and be more accessible for all parties including the illiterate. Also, just because there are residents who speak that language doesn't mean that the business owners speak all those languages and not English very well, so it shouldn't be required for commercial written materials.	
4	18985.1	Organic Waste Recovery Education and Outreach	34	1	(f) If more than five percent of a jurisdiction's generators are defined as "Limited English Speaking Households,"...the jurisdiction shall provide the information required by this section in a language or languages that will assure the information is understood by those generators.	(f) If more than five percent of a jurisdiction's generators are defined as "Limited English Speaking Households,"...the jurisdiction shall provide the information required by this section in a language or languages <u>and/or graphics</u> that will assure the information is understood by those generators.	Graphics provide more inclusive and effective communication to the population as a whole than multiple languages.	
4	18985.2	Edible Food Recovery Education and Outreach	34	29	A jurisdiction shall develop a list of food recovery organizations and food recovery services operating within the jurisdiction, and maintain the list on the jurisdiction's website.	A jurisdiction shall develop a list of food recovery organizations and food recovery services operating within the jurisdiction that <u>directly accept food from Tier 1 and Tier 2 generators, and maintain the list</u> on the jurisdiction's website.	For the purposes of the regulations, a jurisdiction should not be required to list all orgs that are receiving food as a pass through from a FRO who collects/receives directly from commercial edible food generators. Similarly, some FRO's operate out of churches. Are organizations not primarily engaged with food recovery (e.g., libraries, rec centers, churches) required to be listed since their primary function is not "in the collection or receipt of food"? Is not clear if FRO's must directly accept food from CEFG's or indirectly, such as a food pantry from a food bank.	
8	18989.2	CALGreen Building Standards and MWEL	41	33	(a) A jurisdiction shall adopt an ordinance or other enforceable requirement that requires compliance with Sections 492.6(a)(1)(C), (D), and (G) of the Model Water Efficient Landscape Ordinance, Title 23, Division 2, Chapter 2.7 of the California Code of Regulations.	(a) A jurisdiction shall adopt an ordinance or other enforceable requirement that requires compliance with Sections 492.6(a)(3)(4)(<u>B</u>), (C), (D), and (G) of the Model Water Efficient Landscape Ordinance, Title 23, Division 2, Chapter 2.7 of the California Code of Regulations.	Typo: Section 492.6 (a)(1) refers to plant material. Section 492.6(a)(3) refers to Soil Preparation, Mulch and Amendments.	

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10	18991.3	Commercial Edible Food Generators	44	36	(c) In no case may a commercial edible food generator recover no edible food absent extraordinary circumstances. The burden of proof shall be upon the commercial edible food generator to demonstrate extraordinary circumstances. Factors demonstrating extraordinary circumstances are: 1) A failure by the jurisdiction to increase edible food recovery capacity as required in Section 18991.1 (2) Acts of God such as inclement weather, earthquakes, wildfires, flooding, and other emergencies or natural		Need the possibility for a waiver for commercial edible food generators that don't generate surplus edible food (such as if they are a Tier Two generator with an on-site food facility but all the food is eaten or edible food is not otherwise generated regularly) and they need an allowance for food that is not wanted by FRO's (e.g., pastries).	
11	18992.1	Organic Waste Recycling Capacity Planning	46	30	B) Using a waste characterization study or studies performed by jurisdictions located within the county and applying the results of those studies to the total amount of disposal attributed to the county and each jurisdiction located within the county by the Recycling and Disposal Reporting System. Local studies may be used if the studies: 1. Are more recent than the Department's most recent waste characterization study 2. Include at least the same categories of organic waste as the Department's most recent waste characterization study. 3. Include a statistically significant sampling of solid waste disposed of by the jurisdiction conducting the study.	B) Using a waste characterization study or studies performed by jurisdictions located within the county and applying the results of those studies to the total amount of disposal attributed to the county and each jurisdiction located within the county by the Recycling and Disposal Reporting System. Local studies may be used if the studies: 1. Are more recent than the Department's most recent waste characterization study 2. Include at least the same categories of organic waste as the Department's most recent waste characterization study. 3. Include a statistically significant sampling of solid waste disposed of by the jurisdiction conducting the study.	If a jurisdiction thinks that their jurisdiction's waste characterization study is more accurately assessing their organic waste than the statewide study does, then it should not be superceded by the Department's more recent study that still may not be as accurate. That would have wasted the significant amount of money that the jurisdiction spent to conduct that local study. If you don't delete this, then maybe say that has to be within the last 5 years.	
12	18993.1	Recovered Organic Waste Product Procurement Target	51	14	(e) A jurisdiction shall comply with subdivision (a) by one or both of the following: 1) Directly procuring recovered organic waste products. 2) Requiring, through a written contract, that a direct service provider to the jurisdiction procure recovered organic waste products and provide written documentation of such procurement to the jurisdiction.	(e) A jurisdiction shall comply with subdivision (a) by one or more both of the following... (2) Requiring, through a written contract <u>or other documentation</u> , that a direct service provider to the jurisdiction procure recovered organic waste products and provide documentation of such procurement to the jurisdiction. <u>Direct service providers may include:</u> <u>(A) school districts,</u> <u>(B) special districts,</u> <u>(C) permit applicants demonstrating compliance with WELO Section 492.6(3).</u>	This would allow for WELO enforcement, special districts, schools and other state agencies to contribute toward procurement target. School districts and park districts provide services to jurisdictions and their residents. WELO is currently enforced by only 27% of jurisdictions in the state. DWR does not have the ability to penalize jurisdictions for lack of WELO enforcement, so implementation is likely to stagnate at a low level. Allowing compost and mulch purchased to satisfy WELO meets the intent of the procurement requirements, which is to build a robust market for organic waste materials. Statewide effective WELO enforcement would affect many more end users to build a more robust and resilient market than putting the onus strictly on local jurisdictions.	
12	18993.1	Recovered Organic Waste Product Procurement Target	51	31	(2) Renewable gas used for fuel for transportation, electricity, heating applications, or pipeline injection.	(2) Renewable gas used for fuel for heavy duty transportation, electrification, electricity, heating applications, or pipeline injection.	We recommend focusing on the highest and best use for RNG that aligns with other statewide climate goals. RNG will never completely replace natural gas, so developing broad markets for biogas and expanding the infrastructure to maintain it would have the unintended consequence of extending the life of the market for natural gas. This conflicts with statewide electrification to meet state climate goals. The following is a paraphrased comment from City of Oakland: <i>Renewable gas has an important role in making hydrogen to decarbonize heavy duty transportation, as batteries are not the best fit for those applications. However, the state has a goal to electrify all buildings and as much transportation as possible, and there are excellent battery operations for all building applications and most common vehicles. Having a jurisdiction-level purchase requirement for RNG to meet building and light transport needs would be counterproductive.</i>	

Article	Section	Section Title	Page	Line	Current Language	Proposed Language	Rationale	Notes/Questions/References
12	18993.1(f)(3)	Procurement of Recovered Organic Waste Products	51	33	Electricity from biomass conversion.	Add <u>(4) Recycled mulch, that is produced from a permitted facility or generated from green material generated by or at the behest of the jurisdiction.</u>	If procurement targets are going to be based on organics production, rather than demand, the regulations should include mulch in compliant recovered organic waste products to meet the procurement target. This aligns with the department's move to include electricity from biomass, also a wood product, to meet procurement targets. <i>Allowing mulch, in addition to compost, to meet procurement requirements would give cities an additional compliance option.</i> Many cities cannot meet the target through compost alone due to lack of green space. Established landscapes need top dressing (1/2 inch or 1.5 CY/1,000 sf) and new construction needs 1.3 inches at install and little need for several years. In larger cities, this is exaggerated due to a higher target and less available green space per capita. <i>Wood markets are in trouble.</i> According to regional operators, about 50% of wood was being sent to biomass before the plant closures, and now an increasing amount is used as ADC, and will likely continue to be even after AB 1594 takes effect January 2020. <i>Tracking mulch procurement is realistic.</i> Requiring purchase from a permitted facility, WELO annual reports with total mulch use, or documentation showing on-site generation and use all offer straightforward verification procedures. <i>Mulch is a product</i> that undergoes pre-processing, chipping/grinding/shredding, screening, and often aged or colorized before being sold. To calculate the procurement target in CY, here are some numbers: the EPA estimates prunings/trimmings bulk density at 127 lb/CY; estimates for mulch range from 400-800 lb/CY. https://www.epa.gov/sites/production/files/2016-04/documents/volume_to_weight_conversion_factors_memo_04192016_508fnl.pdf <i>Mulch reduces GHG emissions.</i> Fentabil et al (2016) found that mulch application reduced nitrous oxide emissions from bare soil by 28%. Nitrous oxide has a global warming potential of 265-298 over 100 years, according to the EPA. <i>What about RNG?</i> Using RNG to meet requirements works for cities that send organics to AD because they are able to procure "their" gas themselves or through a provider, but there is not enough RNG for cities who choose composting to process organics and achieve the highest and best use of this material by returning it to the soil.	
12	18993.4	Record Keeping Requirements for Recycled Content Paper Procurement	54	21	(a) A jurisdiction shall include all documents supporting its compliance with this Article in the implementation record... including, but is not limited to, the following: (1) Copies of invoices or receipts for all paper purchases.	(a) A jurisdiction shall include all documents supporting its compliance with this Article in the implementation record... including, but is not limited to, the following: (1) Copies of invoices or receipts <u>or other electronic records</u> for all <u>printing and writing</u> paper purchases.	Paper products is very broadly defined and it would be very difficult for smaller jurisdictions to track paper product purchasing that might be integrated with other office supply purchasing that are currently coded as just office supplies purchased, so it would be better to focus on tracking a subset of the paper purchases. <i>From Alameda County: I think the copy paper requirement is fine. 30% PCR is adequate as a statewide goal and the tracking, while time consuming, is pretty straightforward, as long as we can use vendor reports to track. I am concerned about the other paper product requirement. Some of the PCR thresholds for the products listed are typically set lower than 30% PCR currently. So it will be more difficult to meet it within the current national markets. It will also add a significant burden of time for tracking.</i> Also, for some jurisdictions, they may be able to get vendor reports of the purchases which would lessen the burden of having to keep copies of all invoices/receipts.	
13	18994.2	Jurisdiction Annual Reporting	56	33	2) The number of food recovery services and organizations located and operating within the jurisdiction that serve commercial food generators.	2) The number of food recovery services and organizations located and operating within the jurisdiction that serve commercial <u>edible</u> food generators.	Fix to align with definition of commercial edible food generator.	
13	18994.2	Jurisdiction Annual Reporting	57	13	j) A jurisdiction shall report the following regarding its implementation of the procurement requirements of Article 12: 1) The volume of each recovered organic waste product procured directly by the city, county, or through direct service providers, or both during the prior calendar year. 2) The total dollar amount spent on all paper purchases. 3) The total dollar amount spent on all recycled content paper purchases.	j) A jurisdiction shall report the following regarding its implementation of the procurement requirements of Article 12: 1) The volume of each recovered organic waste product procured directly by the <u>city, county, jurisdiction, or through direct service providers, or through other entities at the behest of the jurisdiction, or both</u> during the prior calendar year. 2) <u>How the jurisdiction is meeting the recycled content paper procurement requirements in the prior calendar year. The total dollar amount spent on all paper purchases. 3) The total dollar amount spent on all recycled content paper purchases.</u>	Allow for jurisdictions to get credit for getting other entities such as school districts or special districts in their jurisdiction to procure recovered organic waste product at their behest. Also, since the recycled paper procurements have changed so that it no longer requires 75% of paper purchases to be recycled content, what's reported annually needs to change. Many office paper products are bought from office suppliers and the jurisdiction may not be able to separate out which of the products purchased were paper products versus plastic or other products.	

SB 1383 Second Formal Draft Regulations - StopWaste Comments
July 17, 2019

Article	Section	Section Title	Page	Line	Current Language	Proposed Language	Rationale	Notes/Questions/References
15	18996.1	Department Evaluation of Jurisdiction Compliance	63	20	b) In conducting a compliance evaluation, the Department shall review the jurisdiction's Implementation Record and conduct inspections, compliance reviews, and route reviews.	b) In conducting a compliance evaluation, the Department shall review the jurisdiction's Implementation Record and conduct <u>document</u> documentation of inspections, compliance reviews, and route reviews.	The way it's worded currently makes it seem like the Department will be conducting it's own route reviews, etc.	
16	18997.2	Penalty Amounts	74		Record Keeping Requirements for Edible food Recovery Services and Organizations: A food recovery organization or service that collects or receives edible food from commercial food generators fails to keep records, as prescribed by this section.	Record Keeping Requirements for Edible food Recovery Services and Organizations: A food recovery organization or service that collects or receives edible food from commercial <u>edible</u> food generators fails to keep records, as prescribed by this section.	To align with definition of commercial edible food generators.	
17	18998	Performance-Based Source-Separated Organic Waste Collection Service	94	4	(2) Transport the contents of the source separated organic waste collection stream to a designated source separated organic waste facility.	Provide alternative based on existing programs.	Jurisdictions might be able to meet the 50 percent recovery at transfer stations, but would not be able to meet the 10% limit on organics in overs sent to disposal/ADC at compost facilities. Most compost facilities are shared by multiple jurisdictions, so even if a jurisdiction meets all the other requirements, if that jurisdiction's organics are going to a shared facility that has less clean material coming in, they would not meet this requirement and would have little control over what the facility does, or how their hauler responds to the situation.	
17	18998	Performance-Based Source-Separated Organic Waste Collection Service	94	14	(4) Implement a system for automatically enrolling all new commercial businesses and residents within the jurisdiction in the three-container organic waste collection service within 30 days of occupancy of a business or residence. To comply with this section, a jurisdiction shall not require new commercial businesses or residents to request solid waste collection service prior to enrollment.	Delete	This prescriptive requirement is redundant to the performance-based requirements of Section 18998.1(a)(1) which requires that organics be provided to 90% of generators. It should not matter how a jurisdiction goes about meeting that target. Also, there are logistical problems with auto-enrollment, such as determining cart and bin size, renting vs owning and account holder, shared accounts, etc.	
17	18998	Performance-Based Source-Separated Organic Waste Collection Service	94	26	(c) If the jurisdiction fails to comply with this section due to a facility to which it sends organic waste being unable to meet the requirements of a designated source separated organic waste facility, the jurisdiction shall implement an organic waste collection service that complies with the requirement of Article 3...	Delete or allow city to take action on facility.	The wrong entity is penalized by this measure. The jurisdiction is penalized for the facility being out of compliance, but does not have control over the facility's actions. Most jurisdictions contract with a hauler and the hauler contracts with a facility, which contracts with multiple haulers and serves many jurisdictions. If a jurisdiction sends its very clean organics to a facility that starts accepting less clean organics, the jurisdiction with the clean organics is effectively punished for the actions of another.	

City of Berkeley Disaster Debris Management Plan

September 20, 2018



Part I The Basic Plan

**If this is an actual emergency, go directly to:
Section 4. Debris Collection Strategy [Page 38](#)**

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Promulgation and Adoption

Approval Date: [Insert approval date here after it has been adopted]

The City of Berkeley Disaster Debris Management Plan (DDMP) provides a comprehensive framework for how debris operations will be managed following a disaster. It identifies the roles and responsibilities of all departments and agencies involved in debris operations.

The City of Berkeley DDMP maintains consistency with state and federal systems and guidelines and describes the interrelationship with all levels of government. The plan will be reviewed annually, exercised periodically, and revised as necessary to meet changing conditions.

The City of Berkeley Disaster Council gives its full support to this plan. This letter promulgates the City of Berkeley DDMP and constitutes the adoption of the City of Berkeley DDMP by the City of Berkeley Disaster Council.

Plan Management and Maintenance

Overview

The City of Berkeley's Disaster Debris Management Plan (DDMP) is designed for efficient updates and additions. The responsibility of maintaining the document is assigned to the Debris Project Manager. The Debris Project Manager will conduct a thorough review of the plan annually. Updates shall be distributed every year as needed or when there are significant changes.

Personnel with specific job duties related to debris operations are to review their procedures and related information after every activation, either simulated in drills or as an actual response. Personnel should also be trained on the content of the plan prior to a disaster.

Revision and Maintenance Process

The City of Berkeley DDMP will be reviewed annually to ensure the plan elements are valid, current, and remain in compliance with state and federal systems and new policies and guidelines. Each responsible city department will review and update its portion of the DDMP as required. All revisions to the DDMP are documented in the Record of Changes on page iv.

Plan Submittal and FEMA Review

The City of Berkeley will submit the final DDMP to the California Governor's Office of Emergency Services (Cal OES) for review and comment. Cal OES will submit the plan to the Federal Emergency Management Agency (FEMA) for review and acceptance. When the City has a FEMA-approved DDMP before the date of the declared disaster period, FEMA will provide a one-time incentive of a two (2) percent cost share adjustment applied to debris removal work completed within 90 days. Under the Public Assistance Program, the FEMA/State cost share is usually 75 percent/25 percent. This one-time incentive will not be available again during the course of FEMA's Public Assistance alternative procedures for the debris removal pilot program. Please see Section 10.1.2 FEMA Public Assistance Program for more information about requesting alternative procedures for debris removal and the process necessary to apply for and receive Public Assistance.

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1. Introduction

1.1. Overview

Disasters can generate large quantities of debris, creating hazardous conditions that threaten public health and safety and delay the short and long-term recovery of the community and its return to normalcy. Disaster debris can complicate and delay disaster response and recovery activities, such as access to critical facilities, transportation of victims or relief teams, fire fighting and provision of shelter, food, and water to disaster survivors. It is imperative that the City of Berkeley is prepared to coordinate and manage debris removal operations to restore public services and ensure the public health and safety in the aftermath of a disaster.

The purpose of this Disaster Debris Management Plan (DDMP) is to provide the framework for how the City of Berkeley will respond, clear, remove, reduce and dispose of debris generated during a disaster. It identifies disaster recovery policies, describes the debris management organizational structure, and assigns specific roles and responsibilities to city departments, staff, and community partners. The DDMP has the flexibility to be used for numerous hazards associated with natural disasters and will facilitate response and recovery efforts within the City in coordination with local, State and Federal agencies.

The DDMP complies with state and federal regulations and guidelines, as well as California's Standardized Emergency Management System (SEMS), the National Incident Management System (NIMS) and the National Disaster Recovery Framework.

1.2. Purpose and Scope

1.2.1. Purpose

The City of Berkeley's Disaster Debris Management Plan (DDMP) provides an overview of the City's approach to disaster debris operations. The objectives of this DDMP are to:

- Forecast the type and quantity of debris generated by various disaster scenarios.
- Implement coordinated debris management operations, including debris clearance, collection, reduction, recycling, final disposal, and documentation.
- Describe the debris management organizational structure.
- Identify City Departments and external entities with roles in disaster debris management operations and define their responsibilities.
- Describe the resource management strategy for disaster debris management operations.
- Establish mechanisms to coordinate with local, state, federal and contracted resources to manage disaster debris operations.
- Establish a response and recovery timeline for debris removal operations.

1.2.2. Scope

This DDMP addresses natural disasters that can generate significant volumes of debris in the City of Berkeley. The plan should be utilized during all phases of emergency management.

1.3. Background

1.3.1. Disaster Debris Management Plan Process

The City of Berkeley retained the services of a consulting firm to assist with the development of the DDMP. Project team members from the consulting firm conducted the following planning meetings with key City personnel and relevant stakeholders for their input into the various aspects of the plan:

Project Kick-Off Meeting

The purpose of the project kick-off meeting was to establish the planning objectives that would define the disaster debris management plan process, determine project milestones, confirm the project schedule and deliverables and identify key City personnel and relevant stakeholders that have the subject matter expertise to fill in critical gaps in the plan.

Working Group Meetings

The purpose of conducting the working group meetings was to meet with key City personnel and relevant stakeholders to collect additional information needed for plan development. During these meetings, planners and staff discussed roles and responsibilities; debris collection, reduction/recycling, and disposal methods; temporary debris management sites (TDMS) and disposal locations; use and procurement of contracted services; use of force account labor; processes for private property debris removal and demolition; monitoring debris removal operations; health and safety requirements; public information as well as environmental considerations and other regulatory requirements related to disaster debris management operations.

Draft Plan Working Group Meeting

The purpose of conducting the Draft Plan Working Group Meeting was to review highlights of the draft plan with the City's POC. Input from key City personnel and relevant stakeholders was incorporated into the final plan.

Plan Orientation Workshop and Tabletop Exercise

The purpose of the Orientation Workshop was to review key elements of the plan and ensure key City personnel and relevant stakeholders have a fundamental understanding of the components of the plan. The purpose of the Tabletop Exercise was to test and evaluate the effectiveness of the plan.

1.4. Authorities and References

The following authorities and references provide direction and guidance for conducting disaster debris management operations by the City of Berkeley.

1.4.1. Authorities

Local

- Berkeley Municipal Code (BMC), Title 1, Chapter 1.16. Right of Entry for Inspection
- BMC, Title 1, Chapter 1.24. Abatement of Nuisances
- BMC, Title 6, Chapter 6.20. Marina Rules and Regulations
- BMC, Title 12, Chapter 12.98. Abandoned, Dismantled or Inoperative Vehicles
- BMC, Title 15, Chapter 15.12. Hazardous Materials and Wastes Management
- BMC, Title 17, Chapter 17.08. Preservation and Restoration of Natural Watercourses
- BMC, Title 19, Chapter 19.28. Berkeley Building Code
- BMC, Sub-Title 23C, Chapter 23C.08. Demolition and Dwelling Unit Controls

State

- California Building Code (CBC), Section 1.8.5. Right of Entry for Enforcement.
- CBC, Section 104.6 Right of Entry.
- CBC, Section 105. Permits.
- CBC, Section 110. Inspections.
- CBC, Section 116. Unsafe Structures and Equipment.
- California Code of Regulations (CCR), Title 14, Division 7, Chapter 3, Article 5.9. Construction and Demolition and Inert Debris Transfer/Processing Regulatory Requirements
- CCR, Title 19, Division 2, Chapter 6. Disaster Assistance Act, §2920. Emergency Work
- CCR, Title 19 Public Safety, Division 2. Office of Emergency Services, Chapter 6. Disaster Assistance Act, §2925. Debris Removal
- CCR, Title 19. Public Safety, Division 2. Office of Emergency Services, Chapter 6. Disaster Assistance Act, §2930. Emergency Protective Measures
- CCR, Title 19. Public Safety Division 2. Office of Emergency Services, Chapter 6. Disaster Assistance Act, §2930. Emergency Protective Measures – Demolition
- CCR, Title 22, Division 4.5, Chapter 13. Standards Applicable to Transporters of Hazardous Waste
- CCR, Title 8, Subchapter 4, Article 4, Section 1529. Asbestos
- California Vehicle Code (CVC), Division 11, Chapter 10, Article 1. Authority to Remove Vehicles
- Joint Exercise of Powers Act: Government Code §6500
- California Health & Safety Code 41800
- California Public Resources Code §40000, et seq.
- California Integrated Waste Management Act of 1989
- California Hazardous Waste Control Act, California Health and Safety Code §25100, et seq.

- California Toxic Substances Account Act, California Health and Safety Code §25300, et seq.
- Porter-Cologne Water Quality Control Act, California Water Code §13000, et seq.
- Safe Drinking Water and Toxic Enforcement Act, California Health and Safety Code §25249.5, et seq.
- California Health and Safety Code §25115-25117, 25249.8, 25281, and 25316
- Clean Air Act, 42 U.S.C. §7901, et seq.
- California Water Code §13050

Federal

- Code of Federal Regulations (CFR), Title 2, Subtitle A, Chapter II, Part 200. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards
- CFR, Title 44, Chapter I, Subchapter D, Part 206. Federal Disaster Assistance.
- U.S. Code, Title 23, Part 125. Emergency Relief Section 1107, Public Law 112-141 Moving Ahead for Progress in the 21st Century Act (MAP-21), July 2012
- U.S. Code, Title 42, Chapter 103. Comprehensive Environmental Response, Compensation, and Liability (CERCLA) and Title III of Superfund Amendments and Reauthorization Act of 1986 (SARA)
- Sandy Recovery Improvement Act (SRIA) included as Division B of the Disaster Relief Appropriations Act, PL 113-2, signed into law January 29, 2013
- Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, PL 93-288
- Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §9601, et seq.
- Flood Control and Coastal Emergency Act, Public Law 84-99
- Water Resources Development Act, Public Law 94-587, 90 Stat. 2921, Section 202
- Coastal Zone Management Act, Public Law 96-464
- Toxic Substances Control Act, 15 U.S.C. §1601, et seq.
- Natural Historic Preservation Act, 16 U.S.C. §§470, Section 106
- Fish and Wildlife Coordination Act, 16 U.S.C. §§661-667
- Endangered Species Act, 16 U.S.C. §§1531-1544, Section 7(a)(2)
- Occupational Safety and Health Act, 29 U.S.C. §651, et seq.
- Rivers and Harbors Appropriation Act, 33 U.S.C. §401-406, Section 15, 19, and 20
- Federal Clean Water Act, 33 U.S.C. §1251, et seq.
- Resource Conservation and Recovery Act, 42 U.S.C. §6901, et seq.
- Hazardous Materials Transportation Act, 49 U.S.C. §1802, et seq.

1.4.2. References

Local

- City of Berkeley Emergency Operations Plan, 2016
- City of Berkeley Local Hazard Mitigation Plan, 2014
- Alameda County Emergency Operations Plan, 2012

- Alameda County Local Hazard Mitigation Plan, 2016
- Alameda County Public Works Catastrophic Earthquake Debris Management Plan
- Regional Catastrophic Earthquake Debris Removal Plan, 2011

State

- California Office of Emergency Services (Cal OES) Debris Management Plan
- California Environmental Protection Agency (Cal EPA) Guidance for Conducting Emergency Debris, Waste and Hazardous Material Removal Actions Pursuant to a State and Local Emergency Proclamation, October 2011

Federal

- FEMA Publication 325, Debris Management Guide
- FEMA Publication FP 104-009-2 – Public Assistance Program and Policy Guide, 2016
- FEMA Publication 328, Debris Monitoring Guide
- FEMA Publication 329, Debris Estimating Guide
- FEMA Public Assistance Alternative Procedures Debris Management Plan Job Aid
- FEMA Public Assistance Alternative Procedures EMMIE Cost Codes for Debris Removal
- FEMA Public Assistance Alternative Procedures Pilot Program Guide for Debris Removal

2. Situation and Assumptions

2.1. Situation

The City of Berkeley is vulnerable to many natural disasters that have the potential to generate large volumes of debris, including fallen trees, sand, gravel, building construction material, vehicles, personal property and hazardous materials. The quantity and type of debris generated from any particular natural disaster will depend on the location, type of event, as well as its magnitude, duration and intensity. These factors will have a direct impact on the scope of the work of the debris management operations, including the required resources, debris management organizational structure, type of debris collection and disposal strategy and response and recovery timeline for debris removal operations. This section describes the findings of two debris forecasting methods, which are intended to establish a baseline for disaster debris planning purposes. The information in this section is for planning purposes only and will likely be different from an actual disaster.

2.2. Assumptions

This plan addresses the clearing, removal and disposal of disaster debris based on the following assumptions:

- Disaster debris will be managed at the local level.

- The amount of debris generated by a natural disaster could exceed the City’s capability to clear, remove and dispose of it.
- The City may use contracted services to assist in the disaster debris removal, reduction, recycling and disposal.
- The City may request additional resources to support disaster debris operations through established channels under the Standardized Emergency Management System (SEMS).
- Large-scale disasters may require prolonged, sustained debris operations and support activities.
- State and federal assistance may be requested to supplement the City’s disaster debris removal and disposal capabilities.

2.3. Debris Forecasting

Forecasting the amount and type of debris generated by potential disaster events allows the City to better define the scope of the work of the debris management operations. Debris estimates are based on several assumptions and should not be considered as the actual volumes after a disaster. The debris forecasting methods use factors such as land use, building type and census tract data to predict the amount and type of debris generated by various disaster scenarios.

Earthquake Scenario Assumptions and Debris Estimate

The United States Geological Survey has estimated a 63% probability of a 6.7 magnitude earthquake in the San Francisco Bay Area by the year 2038, and a 31 percent chance that a major earthquake will occur on the Hayward/Rogers Creek Fault, which runs directly through the City of Berkeley.¹ A 6.9 magnitude earthquake on the Hayward Fault has a high probability of causing extensive damage in the Berkeley area. The Federal Emergency Management Agency’s (FEMA) Hazus software was used to run three earthquake scenarios for the City of Berkeley. The scenarios include 7.0, 6.6 and 5.4 magnitude earthquakes on the Hayward Fault. The 7.0 magnitude earthquake is based on the United States Geological Survey (USGS) HayWired scenario (see Attachment A: Jurisdiction Maps).

Table 2-1. 5.4 Hayward Fault Earthquake Debris Estimate

Type 1 debris (brick, wood and other debris (CY)	Type 2 debris (wrecked reinforced concrete and steel members (CY)	Total (CY)
172,920	137,680	310,600

¹ City of Berkeley, Local Hazard Mitigation Plan, 2014, Summary-1.

Table 2-2. 6.6 Hayward Fault Earthquake Debris Estimate

Type 1 debris (brick, wood and other debris (CY)	Type 2 debris (wrecked reinforced concrete and steel members (CY)	Total (CY)
394,600	435,720	830,320

Table 2-3. 7.0 Hayward Fault Earthquake Debris Estimate

Type 1 debris (brick, wood and other debris (CY)	Type 2 debris (wrecked reinforced concrete and steel members (CY)	Total (CY)
734,200	1,129,380	1,863,580

Wildfire Scenario Assumptions and Debris Estimate

Wildfires can be caused by human activities (e.g., arson or campfires) or by natural events (e.g., lightning, drought conditions, flammable vegetation in forests or other areas). Wildfires can cause significant property damage and threaten public health and safety. The City of Berkeley is most vulnerable to a wind-drive wildfire incident originating in the City’s eastern hills and the Panoramic Hill area specifically. By superimposing a map of the City-designated and California Department of Forestry and Fire Protection (Cal Fire) hazardous fire zones onto the current day structures and vegetation growth of Berkeley using Google Earth, planners could determine the type of land use (residential, commercial/industrial or parks) and total counts of parcels within Fire Zones 2 (Very High) and 3 (Extremely High).² Once the land use of a parcel within Fire Zones 2 and 3 was determined, the following formulas were used to calculate the total volume of debris generated from demolished residential and commercial/industrial buildings, and vegetation from parks:³

Construction and Demolition (C&D) and Vegetation Debris

- Commercial/Industrial Buildings

$$\frac{L' \times W' \times H' \times 0.33}{27} = \text{cubic yards (CY)}$$

Where:

L = length of building in feet

W = width of building in feet

H = height of building expressed in feet

0.33 = a constant to account for the “air space” in the building

27 = the conversion factor from cubic feet to cubic yards

² City of Berkeley, Local Hazard Mitigation Plan, 2014, 3-78-3-81.

³ FEMA Publication 329, Debris Estimating Guide, 2010, 9-11.

- Residential Buildings

$$L' \times W' \times S \times 0.20 \times VCM = \text{cubic yards (CY)}$$

Where:

L = length of building in feet

W = width of building in feet

0.2 = a constant based on the study data

S = height of building expressed in stories

VCM = Vegetative Cover Multiplier

Note: An area of 1,500 square feet was used in the calculations for the one-story residential building formula. The vegetative cover multiplier is a measure of the amount of vegetative debris that should be added to the amount of debris generated by just the first story square footage of the demolished residential building. A vegetative cover multiplier of 1.3 for medium residential vegetation was used. The amount of debris generated by a demolished multiple-story residence is 990 CY (average).

- Parks

15 trees, 8 inches in diameter = 40 CY (average)

One acre of debris, 3.33 yards high = 16,117 CY

Note: Once the square footage of a park was determined, the vegetative cover multiplier was added to the debris estimating formula for a demolished single-family residence to calculate vegetation from parks.

Table 2-4. Wildfire Zone 2 (Very High) Debris Estimate

C&D (CY)	Vegetative (CY)	Debris Estimate (CY)
406,619	2,497,799	2,904,418

Note: A reoccurrence of the 1923 Berkeley Fire would cause significantly more damage in Berkeley and would spread to a larger area due to subsequent development and higher density dwellings and other buildings. If that fire were to recur today, it is estimated that 75% of Wildfire Zone 2 would burn.⁴

Table 2-5. Wildfire Zone 3 (Extremely High) Debris Estimate

C&D (CY)	Vegetative (CY)	Debris Estimate (CY)
12,900	67,080	79,980

⁴ City of Berkeley, Local Hazard Mitigation Plan, 2014, 3-87.

Rainfall-Triggered Landslides Scenario Assumptions and Debris Estimate

Landslides may result from a wide range of combinations of natural rock, soil, or artificial fill. Landslides may also occur because of indiscriminate development of sloping ground or the creation of cut-and-fill slopes in areas of unstable or inadequately stable geologic conditions. Landslides are most frequently triggered in periods of high rainfall. The northern part of the Berkeley Hills is most vulnerable to rainfall-triggered landslide hazards. By superimposing a map of the active landslide areas in the Berkeley Hills onto the current day structures and vegetation growth of Berkeley using Google Earth, planners could determine the type of land use (residential, commercial/industrial or parks) and total counts of parcels.⁵ Once the land use of a parcel within the active landslide areas was determined, the formulas on pages 7-8 were used to calculate the total volume of debris generated from demolished residential and commercial/industrial buildings, and vegetation from parks.

Table 2-6. Rainfall-Triggered Landslides (Active) Debris Estimate

C&D (CY)	Vegetative (CY)	Debris Estimate (CY)
777,600	565,230	1,342,830

Flood Scenario Assumptions and Debris Estimate

Flooding can result in significant damage to private property, including homes and businesses. Losses occur due to damage to both the structure and contents of buildings. The City of Berkeley faces moderate flooding exposure, primarily from local creek flooding and storm drain overflow.⁶ FEMA's Digital Flood Insurance Rate Map (DFIRM), the California Geological Survey's (CGS) Hazard Study Zones Map and Geographic Information System (GIS) data were used to determine the 100 and 500-year floodplain boundaries in the City of Berkeley. By superimposing the DFIRM and Hazard Study Zones Map onto the current day structures and vegetation growth of Berkeley using Google Earth, planners could determine the type of land use (residential, commercial/industrial or parks) and total counts of parcels within the 100 and 500-year floodplain boundaries. Once the land use of a parcel in the 100 and 500-year floodplain boundaries was determined, the formulas on pages 7-8 were used to calculate the total volume of debris generated from residential and commercial/industrial buildings, and vegetation from parks. Personal property debris from a flooded home without a basement has been found to be 25-30 CY.⁷

Table 2-7. 100-Year Flood Zone Debris Estimate

C&D (CY)	Personal Property (CY)	Vegetative (CY)	Debris Estimate (CY)
16,800	840	71,522	89,162

⁵ City of Berkeley, Local Hazard Mitigation Plan, 2014, 3-19, 3-88, 3-89.

⁶ City of Berkeley, Local Hazard Mitigation Plan, 2014, 3-90.

⁷ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 59.

Table 2-8. 500-Year Flood Zone Debris Estimate

C&D (CY)	Personal Property (CY)	Vegetative (CY)	Debris Estimate (CY)
376,354	2,550	45,547	424,451

Tsunami Scenario Assumptions and Debris Estimate

Tsunamis can result from off-shore earthquakes within the Bay Area, or from distant events. While it is most common for tsunamis to be generated by subduction faults such as those in Washington and Alaska, local tsunamis can be generated from local faults running underwater. The Berkeley Marina is most vulnerable to a tsunami.⁸ The California Tsunami Evacuation Playbook was used to define two tsunami inundation zones in the City of Berkeley. The scenarios include an 8.2-foot and a greater than 11.5-foot tsunami created by a large earthquake in the Alaska-Aleutian Islands region.⁹ By superimposing maps of the inundation zones onto the current day structures and vegetation growth of Berkeley using Google Earth, planners could determine the type of land use (residential, commercial/industrial or parks) and total counts of parcels within the tsunami inundation zones. Once the land use of a parcel in the tsunami inundation zones was determined, the formulas on pages 7-8 were used to calculate the total volume of debris generated from residential and commercial/industrial buildings, and vegetation from parks.

Table 2-9. 8.2-Foot Tsunami Debris Estimate

C&D (CY)	Vegetative (CY)	Debris Estimate (CY)
50,926	146,473	197,399

Table 2-10. >11.5-Foot Tsunami Debris Estimate

C&D (CY)	Vegetative (CY)	Debris Estimate (CY)
272,811	146,473	419,284

Note: The 2013 Science Application for Risk Reduction (SAFRR) tsunami scenario estimates that at least 367 of the 1,100 boats in the Berkeley Marina will be damaged or sunk.¹⁰

⁸ City of Berkeley, Local Hazard Mitigation Plan, 2014, 3-101, 3-105.

⁹ Cal OES, California Tsunami Evacuation Playbook, 2015, 12-15.

¹⁰ City of Berkeley, Local Hazard Mitigation Plan, 2014, 3-106.

3. Staff Roles and Responsibilities

3.1. Organizational Structure

The debris management organizational structure consists of personnel from City Departments that will have direct responsibility for managing disaster debris operations for the City of Berkeley. The Public Works Department may initially utilize the Departmental Operations Center (DOC) structure to coordinate disaster debris operations. A Debris Project Manager will be assigned within the Public Works DOC Operations Section or the City Emergency Operations Center (EOC) Operations Support Section, Construction and Engineering Branch to coordinate with local, state and federal authorities to prioritize and coordinate disaster debris operations. Section 3.2.1 provides a description of the roles and responsibilities of City Departments involved in disaster debris operations. The debris operations organizational structure will have the capability to expand or contract as needed based on the size and complexity of the event. Figure 3-1 on page 12 shows how debris management operations could be organized under the City of Berkeley's Public Works DOC in response to a debris-generating event.

If the City's EOC is activated, disaster debris operations will be coordinated by the EOC Operations Support Section, Construction and Engineering Branch. Other City Departments with a role in debris management efforts will be assigned through their respective EOC Section as needed (see Section 3.2.2). Figure 3-2 on page 13 shows how debris management operations could be organized under the City of Berkeley's EOC in response to a debris-generating event.

Figure 3-1. Public Works DOC Debris Management Organizational Chart

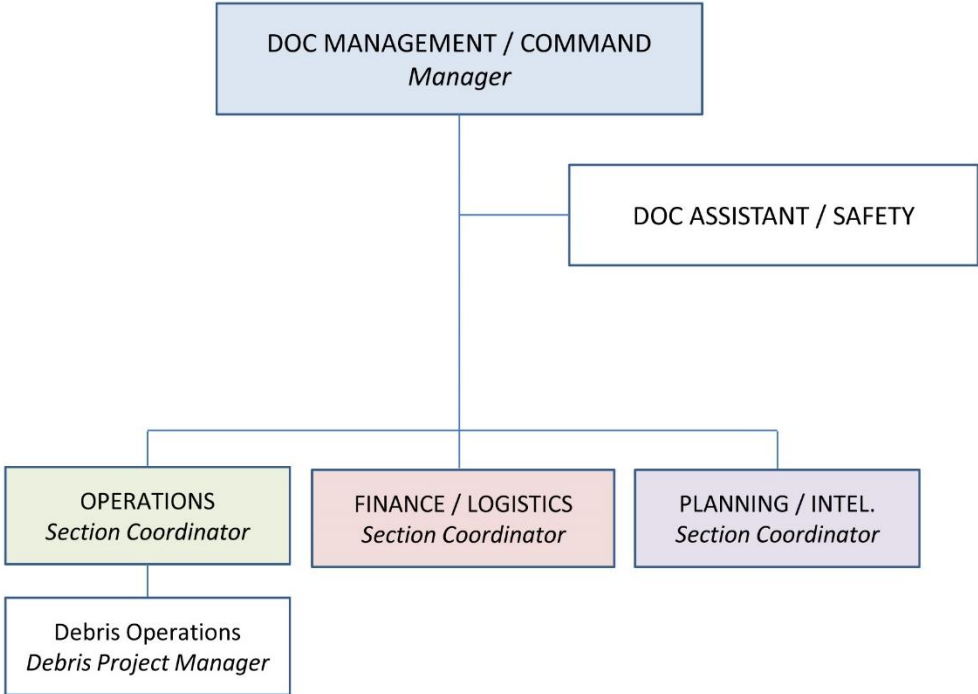
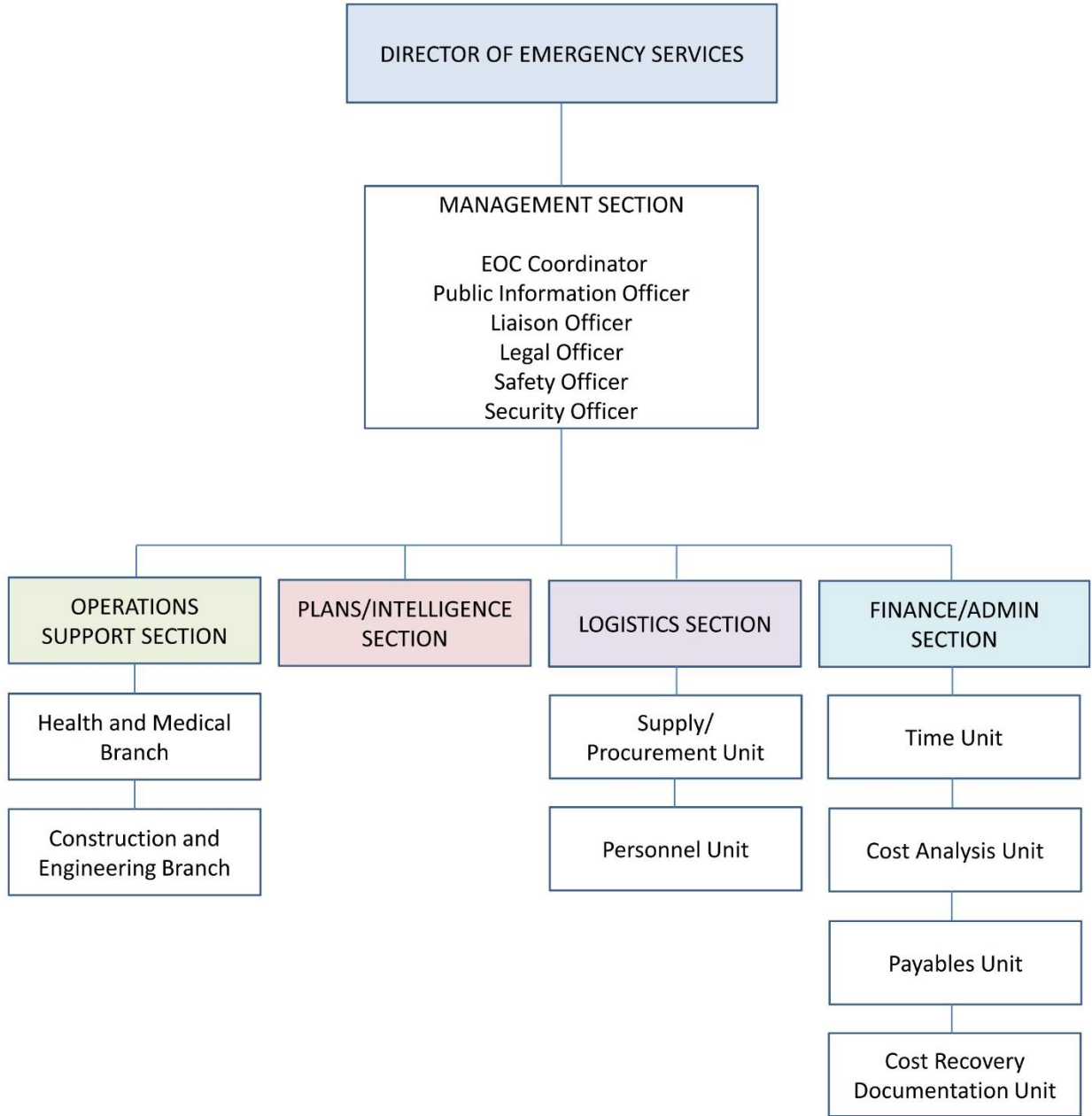


Figure 3-2. EOC Debris Management Organizational Chart



3.2. Roles and Responsibilities

This section provides a description of the roles and responsibilities of City Departments and external entities involved in disaster debris operations. Disaster debris management operations involves coordination and collaboration across City Departments, sectors and all levels of government.

3.2.1. The City of Berkeley Departments

Debris Project Manager

The Solid Waste and Recycling Manager of the Zero Waste Division will serve as the Debris Project Manager within the Public Work DOC Operations Section or EOC Operations Support Section, Construction and Engineering Branch based on the size and complexity of the event. The Debris Project Manager has the following responsibilities:

- Activate and implement the City's disaster debris management plan.
- Oversee the operations, planning, logistics and cost of the debris management operations.
- Assign tasks to debris management personnel and track the completion of tasks to ensure successful implementation of the debris removal operations.
- Manage overall communication and coordination between debris management personnel and external entities.
- Provide situational updates on debris operations to the City's Public Works Department Operations Center (DOC) Operations Section and/or Emergency Operations Center (EOC) Operations Support Section, Construction and Engineering Branch if activated.

Public Works Department and Zero Waste Division

The Public Works Department and Zero Waste Division will coordinate disaster debris operations as directed by the Public Works DOC Operations Section or EOC Operations Support Section, Construction and Engineering Branch based on the size and complexity of the event. The following tasks should be performed by the Public Works Department and Zero Waste Division:

- Implement the debris removal operations and provide overall project supervision.
- Position and distribute equipment and resources for the response and recovery debris removal operations.
- Develop the debris collection strategy.
- Develop staff schedules and strategies.
- Monitor and direct force account and contract labor.
- Identify temporary debris collection sites in coordination with the Parks, Recreation & Waterfront Department.
- Identify temporary debris management sites (TDMS) and design the site layout in coordination with the Parks, Recreation & Waterfront Department.

- Operate and manage the clearance, collection, temporary debris management site (TDMS), and disposal strategies.
- Determine reduction and recycling methods.
- Coordinate with other local and state jurisdictions for road clearance and operations.
- Implement a demolition strategy for structures if necessary.
- Assess available landfill space and determine if additional space is needed.
- Coordinate with state and federal agencies regarding regulatory requirements for disaster debris operations.
- Maintain documentation related to debris operations for state and/or federal disaster assistance.
- Provide all commercial refuse, recycling and compost collection service for Berkeley businesses and multi-family dwellings with more than 9 units (Zero Waste Division).

NOTE: The City will have limited capacity to provide resources for debris removal during a disaster: rear loads (10), roll-off bins (6 to 30) and trucks (2).

Debris Collection Supervisor

The Zero Waste Operations Manager of the Zero Waste Division will serve as the Debris Collection Supervisor as directed by the Public Works DOC Operations Section or EOC Operations Support Section, Construction and Engineering Branch based on the size and complexity of the event. The Debris Collection Supervisor has the following responsibilities:

- Oversee collection activities prior to arrival at the disposal site.
- Coordinate the routing, staffing and field reporting activities.

Debris Site Manager(s)

The Solid Waste Supervisor(s) of the Zero Waste Division and/or contractors will serve as the Debris Site Manager(s) as directed by the Public Works DOC Operations Section or EOC Operations Support Section, Construction and Engineering Branch based on the size and complexity of the event. The Debris Site Manager(s) have the following responsibilities:

- Manage a TDMS.
- Oversee waste separation and environmental protection concerns.
- Provide appropriate paperwork and reporting documentation.

Public Works Department, Transportation Division

The following tasks should be performed by the Transportation Division:

- Map debris haul routes, including designated truck routes and prohibited streets.

Finance Department

The following tasks should be performed by the Finance Department:

- Develop emergency response and recovery budget.
- Track expenses.
- Manage documentation related to debris removal operations for potential state and/or federal reimbursement, including labor, overtime and equipment timesheets.
- Ensure compliance with state and/or federal disaster assistance programs for debris removal.
- Ensure funds are available for personnel, equipment, supplies and contract service costs.

The Finance Department will coordinate with the Public Works Department to have debris contracts in draft form ready for advertisement or have pre-qualified contractors in place prior to the event. Contracting and procurement planning includes the following tasks:

- Use other existing contracts.
- Develop contract scopes of work and requirements.
- Establish contractor qualifications.
- Distribute instructions to bidders.
- Prepare and advertise bid solicitations.
- Evaluate bids.
- Negotiate and award contracts.
- Manage the contract scope of work.
- Establish a list of pre-qualified contractors.
- Establish a post-disaster contracting procedure if necessary.
- Ensure disaster debris management services are procured following local, state, and federal procurement regulations.

Human Resources Department

The following tasks should be performed by the Human Resources Department:

- Maintain documentation, including personnel policies, safety procedures, contract procurement procedures, contracts, billing and invoices, environmental permits, and right of entry and hold harmless agreements for private property debris removal and demolition.
- Manage the onboarding and release of debris management personnel.
- Coordinate and verify training related to health and safety.

Public Information Officer

The following tasks should be performed by the Public Information Officer:

- Coordinate with the Public Works Department and Fire Department's Office of Emergency Services (OES) to develop public information messages related to disaster debris operations.

- Disseminate public information related to disaster debris operations in a timely and effective manner.

Planning and Development Department, Building and Safety Division

The following are tasks that may be completed by the Building and Safety Division:

- Estimate debris quantities.
- Establish a process for building damage assessment and condemnation for public and private structures.
- Issue and obtain permits, such as temporary land use permits and land use variances.

Health, Housing & Community Services Department

Within the Health, Housing & Community Services Department, the following divisions fulfill responsibilities related to disaster debris management:

- Environmental Health Division: Responsible for identifying and resolving environmental issues.
- Public Health Division: Responsible for identifying and resolving public health issues.

Parks, Recreation & Waterfront Department

Within the Parks, Recreation & Waterfront Department, the following divisions may fulfill responsibilities related to disaster debris management in coordination with the Public Works Department:

- Parks and Waterfront Divisions
 - Identify temporary debris collection sites if needed.
 - Identify temporary debris management sites (TDMS) and design the site layout.

City Attorney's Office

The following tasks should be performed by the City Attorney's Office:

- Review debris removal contracts and land lease agreements.
- Review the City's insurance policies.
- Evaluate building condemnation processes.
- Evaluate legal processes for private property demolition and debris removal.
- Provide guidance on right-of-entry and hold harmless agreements.

Order of Designation or Shift Assignments

The City of Berkeley has assigned personnel to coordinate disaster debris management efforts. The following assignments on page 18 are recommendations. However, at the Debris Project Manager's discretion other staff assignments may occur based on their availability, capacity, skill set, and/or knowledge. If the City needs additional personnel with special skills to conduct

disaster debris management efforts, the City may seek external support through mutual aid, contracted resources or by requesting assistance from the Operational Area (OA).

Table 3-1. Debris Management Personnel

Position	Primary	First Alternate
Public Works Department		
Debris Project Manager	Solid Waste & Recycling Manager	Zero Waste Operations Manager
Debris Collection Supervisor	Zero Waste Operations Manager	Senior Zero Waste Supervisor
Debris Site Manager(s)	Solid Waste Supervisor and/or Contractors	Solid Waste Supervisor and/or Contractors
Field Supervisor(s)	Operations Manager	Recycling Program Manager
Debris Monitor(s)	Solid Waste Workers	Contractors
Safety Personnel	Solid Waste Workers	Contractors
Contracting/Procurement Lead	Associate Management Analyst	Assign if Needed
Transportation Lead	Transportation Manager	[Insert Position/Title]
Finance Department		
Finance/Administration Lead	General Services Manager	Senior Buyer
Human Resources Department		
Health and Safety Lead	Health & Safety Officer	Health & Safety Specialist
Public Information		
Public Information Lead	Public Information Officer	[Insert Position/Title]
Planning and Development Department		
Building and Safety Lead	Building Official	[Insert Position/Title]
Parks, Recreation & Waterfront Department		
Parks Lead	Superintendent of Parks	[Insert Position/Title]
Waterfront Lead	Manager	[Insert Position/Title]
Health, Housing & Community Services Department		
Public Health Lead	Program Manager	[Insert Position/Title]
Environmental Health Lead	REHS Supervisor	[Insert Position/Title]
City Attorney's Office		
Legal Officer	City Attorney	Deputy City Attorney / Risk Manager

3.2.2. The City of Berkeley Emergency Operations Center (EOC)

Management Section

Within the Management Section, the following positions fulfill responsibilities related to disaster debris management:

- Public Information Officer
 - Coordinate with the EOC Operations Support Section, Construction and Engineering and Fire and Rescue Branches to develop public information messages related to disaster debris operations.
 - Disseminate public information related to disaster debris operations in a timely and effective manner.
- Legal Officer
 - Review debris removal contracts and land lease agreements.
 - Review the City's insurance policies.
 - Evaluate building condemnation processes.
 - Evaluate legal processes for private property demolition and debris removal.
 - Provide guidance on right-of-entry and hold harmless agreements.

Operations Support Section, Construction and Engineering Branch

Within the Operations Support Section, Construction and Engineering Branch, the following units fulfill responsibilities related to disaster debris management:

- Construction and Engineering Unit
 - Manage the clearance, collection, process and disposal of disaster debris.
 - Identify temporary debris collection sites if needed.
 - Identify temporary debris management sites (TDMS) and design the site layout.
- Transportation Unit: Responsible for mapping debris haul routes, including designated truck routes and prohibited streets.
- Building and Safety Unit
 - Estimate debris quantities.
 - Establish a process for building damage assessment and condemnation for public and private structures.
 - Issue and obtain permits, such as temporary land use permits and land use variances.

Operations Support Section, Health and Medical Branch

Within the Operations Support Section, Health and Medical Branch, the following units fulfill responsibilities related to disaster debris management:

- Environmental Health Unit: Responsible for identifying and resolving environmental issues.

- Public Health and Medical Unit: Responsible for identifying and resolving public health issues.

Logistics Section

Within the Logistics Section, the following units fulfill responsibilities related to disaster debris management:

- The Supply/Procurement Unit: Responsible for emergency contracting and procurement planning in coordination with the Operations Support Section, Construction and Engineering Unit.
- Personnel Unit
 - Maintain documentation, including personnel policies, safety procedures, contract procurement procedures, contracts, billing and invoices, environmental permits, and right of entry and hold harmless agreements for private property debris removal and demolition.
 - Manage the onboarding and release of debris management personnel.
 - Coordinate and verify training related to health and safety.

EOC Finance/Administration Section

Within the Finance/Administration Section, the following units fulfill responsibilities related to disaster debris management:

- Cost Analysis Unit: Responsible for developing the emergency response and recovery budget, and ensuring funds are available for personnel, equipment, supplies and contract service costs.
- Payables Unit: Responsible for tracking expenses.
- Time Unit: Responsible for managing documentation related to debris removal operations for potential state and/or federal reimbursement, including labor and overtime timesheets.
- Cost Recovery Documentation Unit
 - Manage documentation related to debris removal operations for potential state and/or federal reimbursement, including equipment timesheets.
 - Ensure compliance with state and/or federal disaster assistance programs for debris removal.

3.2.3. Long-Term Debris Management Task Force

To facilitate the integration of long-term disaster debris management efforts in the City and promote the effective use of available resources, the City may establish a Long-Term Debris Management Task Force. Debris operations continuing into the recovery phase typically will not be handled by the City's EOC, but will most likely be carried out by specific City Departments that have day-to-day functional responsibility for these operations. Table 3-2. Long-Term Debris Management Task Force Responsibilities on page 22 depicts a sampling of City Departments that may be assigned or have the resources to coordinate specific long-term disaster debris management efforts for the City of Berkeley. Figure 3-3 on page 24 shows how the Long-Term Debris Management Task Force could be organized under the City's overall organization.

Planning: The Long-Term Debris Management Task Force should meet on a continuing, and regularly scheduled basis to discuss its specific roles and responsibilities. The discussions include, but are not limited to:

- Project and cost eligibility factors
- Contracting and procurement requirements
- Documentation
- Demolition and debris removal from private property
- Insurance recovery and duplicate benefit prohibitions
- Funding process
- Project timelines and time extension requests
- Other topics having to do with State and Federal Public Assistance Programs

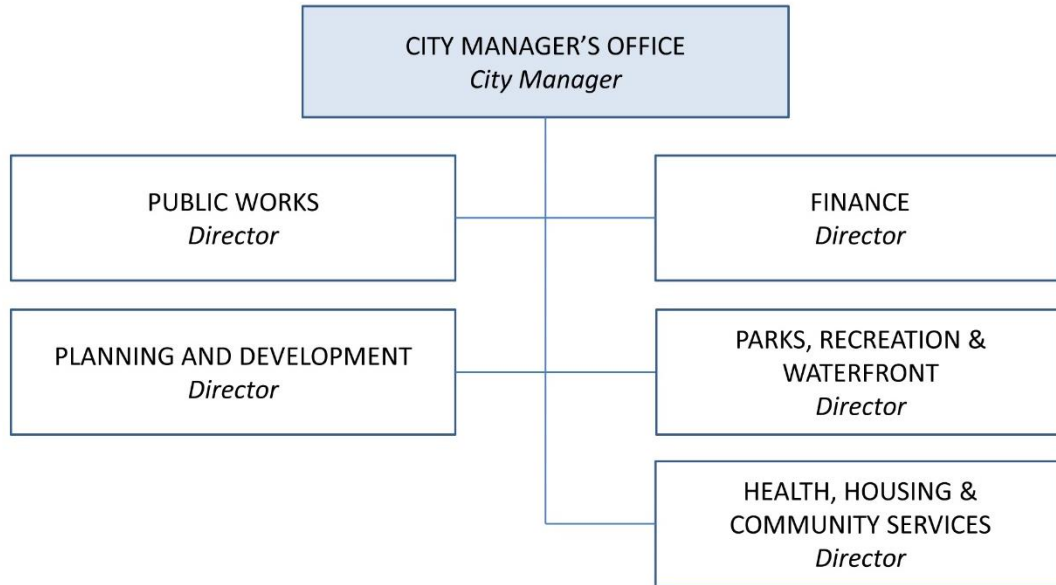
Activation and Duration: For post-disaster responsibilities, the Long-Term Debris Management Task Force may be activated and mobilized upon the request of the City Manager/Director of Emergency Services. In the event of a disaster, the Long-Term Debris Management Task Force may be activated and mobilized for a minimum period of 60 days following the request to the Governor from the City Manager/Director of Emergency Services to declare the City a disaster area. The activation of the Long-Term Debris Management Task Force may be replaced or extended upon resolution by the City Council.

Table 3-2. Long-Term Debris Management Task Force Responsibilities

City Department	Action
<p>City Manager’s Office City Council</p>	<ul style="list-style-type: none"> • Provide political process management, interdepartmental coordination, policy development, decision making, and overall public information.
<p>Public Works Department</p>	<ul style="list-style-type: none"> • Continue to oversee force account and/or contracted labor in demolishing affected public and private buildings and structures. • Participate on team of City Department staff to prepare a disaster debris operations closeout report. • Work with the Debris Project Manager to set up a records retention system for State and Federal reimbursement. • Submit documentation of force account and/or contracted labor costs to the Finance Department for debris clearance, safety assessments, removal, staging, processing, and disposal, and demolition operations that may be eligible for State and Federal reimbursement.
<p>Health, Housing & Community Services Department</p>	<ul style="list-style-type: none"> • Participate on team of City Department staff to prepare a disaster debris operations closeout report.
<p>Parks, Recreation & Waterfront Department</p>	<ul style="list-style-type: none"> • Submit documentation of force account labor and/or contracted labor costs to the Finance Department for debris clearance operations and safety assessments that may be eligible for State and Federal reimbursement.
<p>Finance Department</p>	<ul style="list-style-type: none"> • Coordinate applications for disaster financial assistance. • Provide disaster financial assistance project management.

City Department	Action
<p>Planning and Development Department</p>	<ul style="list-style-type: none"> • Participate on team of City Department staff to prepare a disaster debris operations closeout report. • Continue to work with the State Public Assistance (PA) Officer and FEMA PA Delivery Manager to identify eligible demolition projects. • Submit documentation of force account and/or contracted labor costs to the Finance Department for safety assessments that may be eligible for State and Federal reimbursement.

Figure 3-3. Long-Term Debris Management Task Force Organizational Chart



3.2.4. Alameda County

Alameda County has the following responsibilities related to disaster debris operations:

Alameda County Public Works Agency

- Coordinate debris clearance and removal for the County.
- Serve as the lead agency for debris removal activities in the unincorporated areas of the County.
- Identify temporary debris management sites (TDMS).

Alameda County Sheriff's Office of Emergency Services

- Coordinate the utilization of other local government, county, state and federal resources within the Operational Area (OA).
- Support operations conducted by local governments within the County in accordance with the Standardized Emergency Management System (SEMS) and approved mutual aid agreements and operations plans.

Alameda County Sheriff's Office-Coroner's Bureau

- Manage and coordinate the recovery, storage, transport, processing, and final disposition of human remains.

Alameda County Department of Environmental Health

- Provide information to the public regarding the safe disposal of sewage following a disaster.
- Determine disaster debris that poses an imminent threat to public health and safety.
- Provide documentation regarding health and safety issues to support disaster debris operations.

3.2.5. State Agencies

The following state agencies are responsible for supporting local disaster debris operations:

California Governor's Office of Emergency Services (Cal OES)

- Coordinate debris clearance and removal operations performed by other state agencies.
- Task other state agencies as needed to support local governments in disaster debris operations.
- Administer the delivery of state and/or federal public assistance programs.
- Coordinate requests for assistance and participate with the federal government when federal assistance is needed.
- Request debris removal resources from other states through the Emergency Management Assistance Compact (EMAC).

California Department of Transportation (Caltrans)

- Establish debris clearance priorities on the state highway system.

- Respond to the County’s requests for assistance clearing debris from roads.
- Deploy District 4 engineers and contractors to conduct damage assessments and provide supportive services related to the state highway system and federal-aid routes to help first responders access affected areas.
- Issue permits for the transport of debris on the state highway system.

California Highway Patrol (CHP)

- Deploy Golden Gate Division and Coastal Division personnel to conduct damage assessments, secure disaster areas and remove obstructed vehicles.

California National Guard

- Deploy personnel to secure disaster areas and clear and remove disaster debris.
- Deploy air transportation personnel to conduct aerial damage assessments.

California Conservation Corps (CCC)

- Deploy personnel and equipment to support disaster debris clearance.

California Department of Forestry and Fire Protection (Cal Fire)

- Deploy personnel and equipment to support disaster debris clearance.

California Environmental Protection Agency (Cal EPA)

- Provide guidance on environmental regulations regarding debris operations.
- Provide guidance on the disposal of hazardous debris (Department of Toxic Substances Control).
- Dispatch hazardous materials contractors to perform removal and disposal of hazardous debris as needed (Department of Toxic Substances Control).
- Provide technical assistance to local governments for debris removal operations (Department of Resources Recycling and Recovery).
- Provide approvals for TDMSs and emergency waivers of standards (Department of Resources Recycling and Recovery).

3.2.6. Federal Agencies

The following federal agencies are responsible for supporting local disaster debris operations:

Federal Emergency Management Agency (FEMA)

- Provide technical assistance for disaster debris operations, including environmental and historical preservation review process, Public Assistance Program reimbursement process and procurement assistance.
- Coordinate requests for direct federal assistance from Cal OES and task other federal agencies as needed to support local governments in disaster debris operations.
- Administer the FEMA Public Assistance Program.

U.S. Army Corps of Engineers

- Conduct safety assessments and debris analysis.
- Deploy contractor resources to conduct disaster debris clearance, staging, removal, characterization, reduction, profiling, transportation, and disposal operations.
- Deploy Planning and Response Teams to coordinate and implement disaster debris operations, including clearance, safety assessment, removal, staging, characterization, classification, reduction, profiling, transportation and disposal.
- Provide technical assistance and permitting services to local, tribal and State governments.
- Remove sunken vessels and other obstructions from navigable waterways under emergency conditions.

U.S. Coast Guard

- Detect, identify, contain, decontaminate, perform cleanup, dispose and minimize discharges of oil or releases of hazardous materials from debris.
- Coordinate removal of navigational hazards.
- Provide technical assistance on contaminated debris in coastal zones.
- Deploy specialized equipment and incident management teams, including the Pacific Strike Force based in Novato, California to contain and clean up polluting substances in coastal zones.

U.S. Department of Defense

- Deploy Construction forces, including the U.S. Naval Construction Force at Port Hueneme in Ventura County, California.

Natural Resources Conservation Service

- Provide technical assistance for debris removal from stream channels, road culverts, bridges and creeks.
- Provide disaster recovery assistance through the Emergency Watershed Protection Program.

Federal Highway Administration

- Provide funding for the repair of federal-aid highways and roads on federal lands through the Emergency Relief Program.

3.2.7. Private Sector

The following private sector businesses are responsible for assisting with local disaster debris operations:

Debris Removal Firm

When the debris collection activities are beyond the capabilities of the City, it may contract out such services (see Attachment NN for a list of debris hauling firms). The City will use its procurement procedures and federal contracting guidance to establish a contract with at least

one or more debris removal firms to assist with debris collection and disposal. The debris removal firm may have the following responsibilities:

- Clear and remove debris from the City's roadways and waterways.
- Conduct debris removal operations from public rights-of-way, private property and/or designated debris collection sites.
- Haul-out reduced materials to a final disposal site.
- Remove hazardous trees, hanging limbs and tree stumps.
- Coordinate the removal of white goods and household hazardous waste from the right-of-way.
- Comply with federal regulations for disaster assistance programs.

Debris Monitoring Firm

When the debris monitoring activities are beyond the capabilities of the City, it may contract out such services (see Attachment NN for a list of debris monitoring firms). Debris monitoring contractors **must not** be employed by or affiliated with the debris removal contractor. The City will use its procurement procedures and federal contracting guidance to establish a contract with at least one or more debris monitoring firms to assist with monitoring debris removal operations. The debris monitoring firm may have the following responsibilities:

- Measure and certify truck capacities.
- Perform on-site, street-level debris monitoring at all loading sites to verify debris eligibility based on contract requirements, and initiate debris removal documentation using load tickets.
- Conduct disposal monitoring to document the disposal of disaster debris at temporary debris management sites (TDMS) and final disposal locations.

3.2.8. Nonprofit Organizations

The following nonprofit organizations are responsible for assisting with local disaster debris operations:

Berkeley Recycling Center

- Sort, process and market recyclable materials (e.g., metal) collected in the service area.
- Deliver all residual material (e.g., contamination pulled off the sort line, garbage from buyback customers) at the center to the designated transfer station for disposal.
- Bail recyclable materials for storing, loading and transporting to a final disposal site.
- Implement a plan to resume drop-off and buyback recycling operations after a disaster.

Ecology Center

- Implement a plan to resume residential curbside recycling operations after a disaster.
- Collect and haul recyclable materials in the service area to the designated local recycling facility, transfer station or alternate site for sorting and processing.

3.3. Coordination and Communication

3.3.1. Activation and Incident Coordination

This section describes the process used to activate and coordinate disaster debris operations at the various levels of government during a disaster. Figure 3-4 on page 32 presents the debris management organizational chart for the City of Berkeley's response operations.

Local Government Level:

The Departmental Operations Center (DOC) is the location from which the Public Works Department provides functional support to field operations. The Public Works Department may initially utilize the Departmental Operations Center (DOC) structure to coordinate disaster debris operations.

The City's EOC provides for the overall coordination of resources to the on-scene responders, Departments/DOCs and other governmental and non-governmental agencies during and emergency or disaster. The debris management personnel will coordinate disaster debris operations as directed by the City's EOC if activated.

Operational Area Level:

If the City needs additional resources to conduct disaster debris operations, the City can request assistance from the Alameda County Operational Area EOC. When activated, the Operational Area EOC assists in managing and/or coordinating information, responding to requests for additional debris clearance and removal resources (e.g., personnel and equipment) and establishing debris clearance priorities among local governments through their activated EOC. It serves as the coordination and communication link between the local government level and regional level.

Regional Level:

The Regional Emergency Operations Center (REOC) is activated and managed by the California Governor's Office of Emergency Services (Cal OES) to coordinate information, respond to requests for additional debris clearance and removal resources, establish debris clearance priorities, and provide technical assistance (e.g., debris estimation and debris management site and disposal) among Operational Areas within the mutual aid region and also between the Operational Areas and the State.

State Level:

The State Operations Center (SOC) is activated and managed by Cal OES to coordinate state resources in response to the requests from the REOC and coordinates mutual aid among the mutual aid regions and between the regional level and state level. The state level serves as the coordination and communication link between the State and the federal response system.

The SOC coordinates the following debris removal activities:

- Debris removal activities performed by other State agencies
- Provisions of State debris clearance and removal resources
- Out-of-state resources
- Delivery of state and/or federal public assistance programs.
- Requests for assistance from and participation with the federal government when federal assistance is needed.
- Collection and dissemination of debris removal information

Note: See Section 3.2.4 for a list of the types of State debris removal resources that may be requested by the Operational Area on behalf of the State.

Federal Level¹¹

Under a Presidential declaration of emergency or disaster, FEMA coordinates the response to State requests for federal assistance. The State will make a formal request to FEMA for Technical or Direct Federal Assistance when the disaster exceeds State and local resources. The approved request is called a Mission Assignment. FEMA-issued Mission Assignments are performed by teams called Emergency Support Functions (ESF). The following ESFs perform debris-related activities under FEMA Mission Assignments:

- ESF #3 – Public Works and Engineering is responsible for infrastructure protection, emergency repair and restoration. The U.S. Army Corp of Engineers is the lead agency for ESF # 3.
- ESF # 10 – Oil and Hazardous Materials Response is responsible for responding to oil and hazardous material issues, environmental safety, and short-and-long term cleanup. The U.S. Environmental Protection Agency and the U.S. Coast Guard are the two most commonly deployed agencies that perform debris-related activities.

There are two types of Mission Assignments related to disaster debris operations:

1. Technical Assistance: includes assisting the State and/or applicants in developing disaster debris management plans, monitoring strategies, load ticket processes, and contracting guidelines. Technical Assistance is provided at 100 percent Federal share.
2. Direct Federal Assistance: allow a Federal agency to perform Emergency Work (debris removal and emergency protective measures) on behalf of the State or applicant. The State must provide a letter giving the Federal agency debris removal authority.

Eligible debris-related activities provided by Direct Federal Assistance include:

- Disaster debris removal from critical roadways and facilities

¹¹ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 141-144.

- Disaster debris removal from curbsides or from eligible facilities and hauling it to either temporary or final disposal sites.
- Temporary debris management site (TDMS) selection, design, operation and closeout
- Debris removal monitoring operations
- Demolition and/or removal of disaster-damaged structures and facilities in accordance with FEMA regulations and policies.

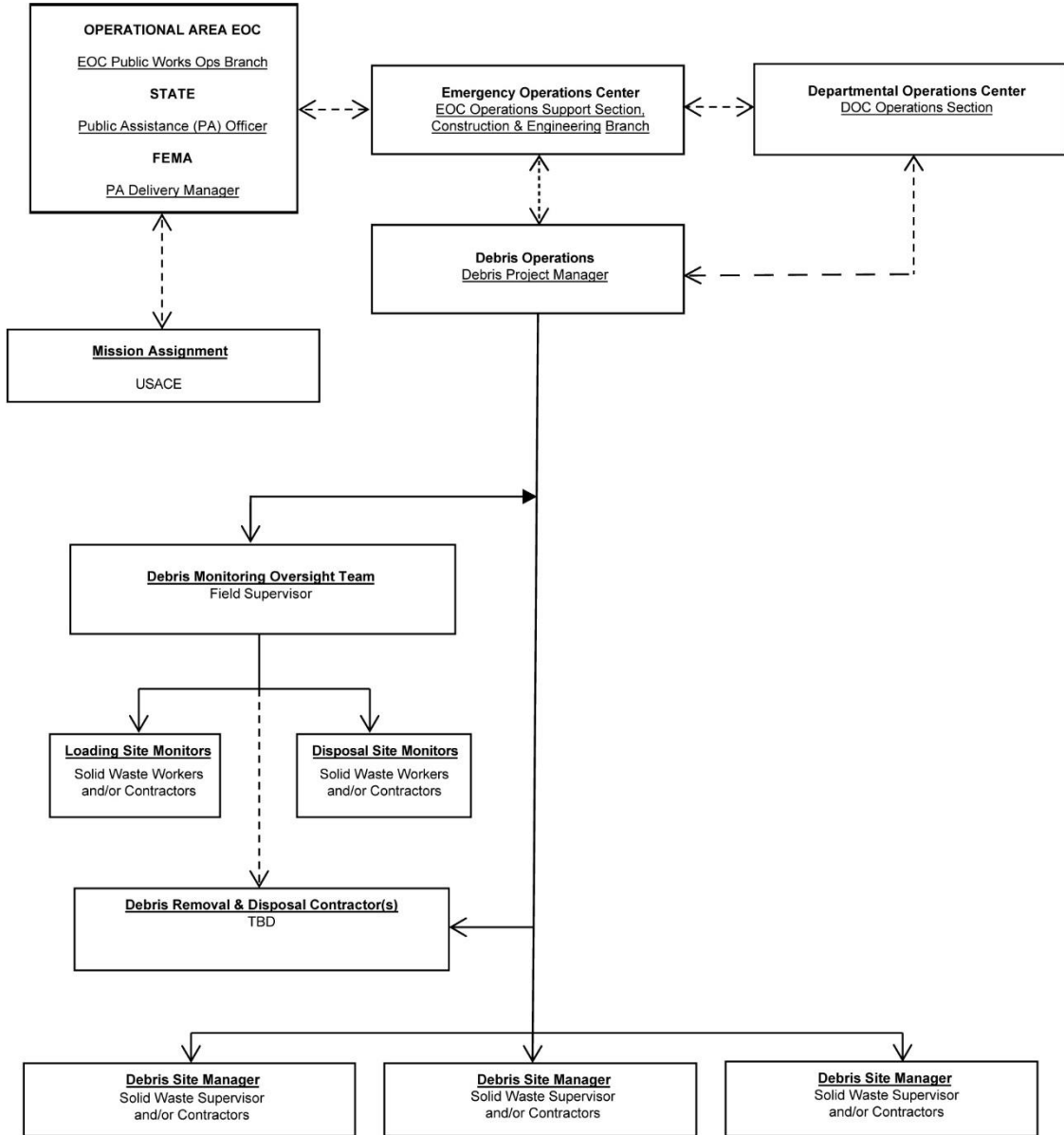
Note: See Section 3.2.5 for a list of the types of federal debris removal resources that may be requested by the State on behalf of the Operational Area.

In order to prepare the scope of work for a Mission Assignment, the City must provide information to the State about where the debris is located and the estimated types and volumes of debris. Mission Assignments for debris removal are limited to 60 days from the disaster declaration date. Based on extenuating circumstances or unusual project requirements, the FEMA Regional Administrator may extend this time limitation pursuant to 44 CFR Part 206.208(d).

3.3.2. Emergency Communications Strategy

Debris management personnel, under most emergency/disaster situations, would primarily communicate by landline telephones, cellular telephones, radios and electronic mail. Upon determination to activate the City's Disaster Debris Management Plan, all Debris Management Personnel will be notified via phone call-out tree, email and/or AC Alert, the Alameda County's emergency notification system. The City of Berkeley EOC should communicate debris management status information to the Operational Area (OA) Emergency Operations Center (EOC) at least once per Operational Period (12 hours), or as requested. Some of the information that should be documented includes status of current conditions, damage assessments for debris, resource needs, TDMS status and critical needs, reduction and disposal strategy and health and safety strategy. The OA will communicate with state and federal agency representatives to obtain guidance regarding disaster debris operations and share this information with the City.

Figure 3-4. Debris Management Organizational Chart



3.4. Health and Safety Strategy

This section establishes minimum health and safety standards for all personnel involved in disaster debris operations, including force account labor and contractors. In addition, this section will identify potential hazards associated with each of the debris management activities as well as appropriate measures to reduce risk of injury.

3.4.1. Dissemination of Information

The Debris Project Manager and contractors' project managers are responsible for disseminating the information and guidelines in this section to their respective personnel in coordination with the Health & Safety Officer. Debris management personnel will receive information regarding health and safety requirements in one or more of the following ways:

- During regular staff meetings;
- Through periodic informational memos/email distributed by their supervisors; or
- During formal and informal training

3.4.2. Compliance

The Debris Project Manager and contractors' project managers are responsible for ensuring compliance with the health and safety requirements in coordination with the Health & Safety Officer. Compliance with this section will always be reviewed during formal and informal training and accident/incident investigations. Health and safety performance will be reviewed as part of each employee's and each supervisor's performance evaluation. Failure to comply with the City of Berkeley's Injury & Illness Prevention Program or any other written safety program may result in disciplinary action up to and including termination of employment. Contractors who do not comply with these requirements may be suspended from debris removal activities until the situation is remedied and/or dismissed from the project entirely.

3.4.3. Hazard Assessment

The following are examples of hazards that can pose a risk to both debris management personnel and the public, and should be evaluated by each respective City Department prior to conducting debris removal activities:

- Use of heavy equipment to clear debris
- Uncovered loads while hauling debris
- Overloaded trucks on hauling routes
- Lack of coordinated traffic control
- Hazardous materials exposure, such as asbestos and lead in debris, contaminated sediment, household hazardous waste, and contaminated sewage (Environmental Health and Toxics Management Divisions)

Note: Attachment UU contains information on health and safety considerations for disaster debris collection and management sites.

3.4.4. Hazard Controls¹²

The following are examples of hazard controls that can be used to reduce the risk of identified hazards to an acceptable level:

Power and Hand Tool Use

- Inspect all power tools before use.
- Do not use equipment that is defective.
- Avoid standing in wet areas when using power tools.

Heavy Equipment (e.g., Grinders/Wood Chippers)

- Do not wear loose-fitting clothing.
- Wear proper safety gear, including eye and hearing protection, heavy work gloves, and work boots.
- Follow the manufacturer's guidelines and safety instructions.
- Guard the feed and discharge ports.
- Do not open access doors while equipment is running.
- Always chock the trailer wheels to restrict rolling.
- Maintain safe distances.
- Never reach into operating equipment.
- Use a lock out/tag out protocol when maintaining equipment.

Debris Collection Operations

- Do not allow collection work to be done with heavy equipment under overhead lines.
- Inspect debris piles before using equipment to pick them up in order to ensure that there are no hazardous obstructions.
- Limit cleanup operations to one side of the road at a time.
- Load collection vehicles properly to guard against overloading or unbalancing.
- Cover and secure loads before moving vehicle.

Temporary Debris Management Sites (TDMS)

- Use jersey barriers and cones to properly mark traffic patterns.
- Use proper flagging techniques for directing traffic.
- Spray the site daily to control airborne dust and debris.

¹² Occupational Safety & Health Administration. *Debris Collection*. Retrieved May 11, 2018, from <https://www.osha.gov/SLTC/etools/hurricane/debris-collection.html>

Hazardous Materials

- If asbestos is found with debris and removal is necessary to complete work, it must be removed by workers who are trained to perform the class of work they will perform, using the methods identified in 29 CFR 1926.1101.
- If lead is found with debris, then the activities must be done in compliance with 29 CFR 1926.62.
- If hazardous chemical containers are found or leaking materials are detected, take self-protective measures (e.g., move to a safe distance upwind) and contact hazardous material response personnel (e.g., Environmental Protection Agency or U.S. Coast Guard) for evaluation of the risk and removal before continuing work in the area.
- Reduce the exposure to splash or aerosolized liquid hazards by limiting the number of people in the area and having those in the area stay upwind of water discharge areas.
- Stay upwind of or away from dust-generating activities.
- Contractors clearing land under contract to homeowners or businesses have the same responsibilities for proper waste management under the law as the home and business owners. For further information, see the fact sheet entitled “DTSC Emergency Guidance on Wildfires #1, Ash, Debris and other Hazardous Materials from Burned Structures,” on the Department of Toxic Substances Control (DTSC) website www.dtsc.ca.gov

3.4.5. Personal Protective Equipment¹³

Personal protective equipment (PPE) works to reduce the risk of injury by creating a protective barrier between individuals and workplace hazards. The proper use of the equipment is outlined in detail in the manufacturer’s instructions. The following general PPE is recommended for all response/recovery tasks:

- **Foot Protection** – PPE used to protect the feet and toes must comply with ANSI Z-41-1991, “American National Standard for Personal Protection – Protective Footwear.”
- **Head Protection** – PPE used to protect the head (e.g., hard hats or helmets) must comply with ANSI Z89.1-1986, “American National Standard for Personal Protection – Protective Headwear for Industrial Workers – Requirements.”
- **Hand Protection** – This includes gloves specific to job hazards (e.g., heavy-duty leather work gloves for handling debris with sharp edges and/or chemical gloves appropriate for chemicals potentially contact).
- **Eye/Face Protection** – PPE used to protect the eyes and face (e.g., goggles, full-face shields to protect against flying objects and liquid splash hazards) must comply with ANSI Z87.1-1989, “American National Standard Practice for Occupational and Educational Eye and Face Protection.”
- **Hearing Protection** – PPE used to protect hearing (e.g., earmuffs and/or earplugs when working around potential noise sources) must comply with ANSI S3.19-1974, “American National Standard Practice for Personal Protection – Hearing Protection.”

¹³ Occupational Safety & Health Administration. *General Recommendations for Working in All Impacted Areas*. Retrieved May 11, 2018, from <https://www.osha.gov/SLTC/etools/hurricane/recommendations.html>

- **Respiratory Protection** – PPE used to protect the respiratory system must comply with ANSI Z88.2-1992.

The following general PPE is organized by debris removal activity:

Debris Collection Monitoring

- Reflective vest
- Foot protection (e.g., rugged shoes or boots; steel toe and shank, if required)
- Long pants

Debris Disposal Monitoring

- Reflective vest
- Foot protection (e.g., rugged shoes or boots; steel toe and shank, if required)
- Long pants
- Hard hat

Debris Removal

- Reflective vest
- Vision and hearing protection
- Foot protection (e.g., rugged shoes or boots; steel toe and shank, if required)
- Long pants
- Hand protection (e.g., leather gloves required for handling debris)

Debris Disposal and Reduction

- Reflective vest
- Vision and hearing protection
- Foot protection (e.g., rugged shoes or boots; steel toe and shank, if required)
- Long pants
- Hard hat

Debris Cutting and Trim Work

- Reflective vest
- Vision and hearing protection
- Hand and foot protection (e.g., rugged shoes or boots; steel toe and shank, if required)
- Long pants
- Hard hat
- Gloves

Note: For additional information regarding health and safety, see the City of Berkeley's Injury and Illness Prevention Program (IIPP) and/or contact the Occupational Safety and Health Administration (OSHA) at 1-800-321-6742.

3.4.6. Documentation

The Supervisor Investigation Form and the Employee Incident Report should be utilized in reporting health and safety concerns and issues, as well as any incidents that occur (see Attachment II for incident report forms).

3.5. Training Schedule

Training will be conducted periodically to ensure personnel with a role in disaster debris operations have a fundamental understanding of their specific job duties and the components of the plan. The following list provides recommendations for debris operations training:

- Contract hauler procurement strategies and process;
- Temporary Debris Management Site (TDMS) selection and permitting;
- Mobilization, operation, and closure of the TDMS sites;
- Contract districts/zones and routing, load ticket tracking;
- Contractor payment request processing;
- Hazardous materials/waste management procedures;
- Communication procedures and equipment needs;
- Debris management equipment needs assessment;
- Private property debris removal and demolition process;
- Trees, limbs and stumps removal
- External agency coordination;
- Health and safety procedures; and
- Documentation and recordkeeping

3.5.1. Exercises

Exercises will be conducted periodically to test and evaluate the effectiveness of the plan and the ability of the City of Berkeley to conduct disaster debris operations. After each exercise or real event, an after-action report/improvement plan (AAR/IP) will be developed to document strengths and make recommendations for improvement. Items/gaps identified during the exercise or real event will be incorporated into the plan.

4. Debris Collection Strategy

This section establishes the disaster debris clearance and collection priorities and objectives based on response and recovery needs.

4.1. Response Operations

Debris management objectives for the response operations are described according to the following phases:

- Event occurrence to Event occurrence + 72 hours
- Event occurrence + 72 hours to Event occurrence + 14 days
- Event occurrence + 14 days to Event occurrence + 60 days

4.1.1. Priorities and Objectives

Event Occurrence to Event Occurrence + 72 Hours

Operational priorities are to:

- Initiate debris clearance operations.
- Provide access for first responders to address life-safety issues.
- Provide access to critical facilities, including health care facilities, communication towers, utility locales and emergency operations infrastructure, such as the Emergency Operations Center (EOC) and supply distribution centers.

Response objectives are to:

- Develop situational awareness.
- Inform the media and public of the initial situation.
- Establish and coordinate debris clearance priorities.
- Identify local, state and federal authorities, regulations and requirements associated with debris clearance operations.
- Provide resources to support debris clearance operations and safety assessments.
- Evaluate critical facilities that provide essential services to determine the condition for use and occupancy.

Event Occurrence + 72 Hours to Event Occurrence + 14 Days

Operational priorities are to:

- Transition from debris clearance operations to debris removal operations.
- Provide access to buildings that support secondary shelters and essential government services that are safe for occupancy.

- Provide access to residential and nonresidential buildings, including schools and assisted care facilities that are safe for occupancy.
- Reduce the immediate threat to public health and safety posed by damaged structures.

Response objectives are to:

- Provide resources to support the expansion of debris clearance operations and safety assessments.
- Inform the media and public about the safety assessment/tagging process for residential buildings.
- Determine the types, amounts and locations of debris.
- Identify and designate temporary debris management sites (TDMS), transfer/processing facilities and landfills.
- Provide resources to support TDMS, including the preparation, operations and closeout of sites.
- Provide resources to support debris removal and demolition operations, including debris removal monitoring and the demolition of unsafe buildings and infrastructure, as needed.
- Identify local, state and federal authorities, regulations and requirements associated with TDMS, debris removal operations and demolition operations.
- Inform the media and public of debris removal and demolition operations.

Event Occurrence + 14 Days to Event Occurrence + 60 Days

Operational priorities are to:

- Transition from debris removal operations to debris processing and disposal operations.
- Continue to reduce the threat to public health and safety posed by damaged structures.

Response objectives are to:

- Identify additional TDMS, transfer/processing facilities and landfills, as needed.
- Provides resources to support the expansion of demolition operations.

4.1.2. Damage Assessment

Damage Assessment Teams will conduct initial zone-by zone windshield surveys to identify the types of debris and to estimate amounts of debris on the roadways and on private and public property. Another method that can be used is an aerial assessment by flying over the area using the Alameda County Sheriff's Office, East Bay Regional Park District, or California Highway Patrol helicopter. The impacted area can be assessed either visually or using aerial photography. FEMA's Publication 329 Debris Estimating Field Guide provides guidance on how to conduct damage assessments and estimate debris volumes.

4.1.3. Emergency Roadway Clearance

The City of Berkeley will coordinate resources to conduct emergency roadway clearance activities through the Public Works Department, mutual aid and/or contracted services. Major arterial routes in the City of Berkeley are given priority for emergency roadway clearance. A list and map of the priority roads for clearance can be found in Attachment B. Critical facilities, including fire stations, hospitals, shelters and facilities which provide basic government services have also been identified in the City of Berkeley. Following a disaster, the City will clear routes to these critical facilities in order to allow emergency response vehicles to pass. A map of these facilities can be found in Attachment C. FEMA regulations allow for reimbursement of emergency roadway clearance activities during the first 70 hours after a disaster. During this time period, all types of equipment and the amount of time the equipment is used must be documented in order to be eligible for reimbursement.

4.2. Recovery Operations

Debris management objectives for long-term recovery operations are described according to the phase of Event occurrence + 60 days.

4.2.1. Priorities and Objectives

Event Occurrence + 60 Days

Operational priorities are to:

- Transition to long-term recovery operations.

Long-term recovery objectives are to:

- Establish a team of City Department staff to prepare a disaster debris management operations closeout report and set up a records management system in order to collect and keep all the documentation that may be required for the FEMA Public Assistance grants.
- Continue to coordinate with the State Public Assistance Officer and FEMA Public Assistance Program Delivery Manager to identify eligible demolition projects.
- Provide resources to support the expansion of demolition operations.

4.2.2. Collection Method

This section provides details on how the City of Berkeley will collect and remove disaster debris.

Curbside Collection

Curbside collection entails residents placing their mixed disaster debris at the curb or along public rights-of-way for collection. Curbside collection parallels the City's normal garbage and trash collection operations.

Debris Collection Sites/Community Drop-off Bins

The City of Berkeley may set up temporary debris collection sites where residents can drop off disaster debris for disposal, rather than arrange for curbside pick-up of debris along City rights-of-way. This approach will limit the need for side-loading trucks to conduct additional curbside pick-up, instead allowing roll-off box trucks to be used extensively to haul debris from the collection sites to the designated local transfer station or alternate site. A list of potential temporary debris collection sites can be found in Attachment AA. Large roll-off bins will be placed at the collection sites for the residents to bring their debris for disposal. Employees and/or contractors should be assigned to manage the development and operations of the collection site. Residents will not be required to separate disaster debris prior to disposal at the collection sites. Household hazardous waste (HHW) and lead and asbestos containing materials will not be accepted at the debris collection sites. Attachment N provides information on how to manage hazardous debris, including asbestos containing materials.

The City may also place large roll-off bins on public rights-of-way or private property for the residents to bring their debris for collection. Bins may be requested by both individual property owners and groups cleaning multiple properties. All bins are intended for use by the surrounding community. The owners of the property on which the bins are placed will be required to sign right-of-entry agreements. Residents will not be required to separate disaster debris before placing in the bins. HHW and lead and asbestos containing materials are not allowed to be placed in the bins.

The locations of the collection sites will be advertised at local assistance centers, and through local media. Employees will work with residents to estimate the quantity of debris at collection sites, along public rights-of-way and/or on private property and schedule roll-off bins accordingly. Depending on the magnitude of the disaster, the City may hire contractors to provide additional roll-off bins to residents, at collection sites and/or along public rights-of-way.

Debris Collection Zones

The City will define various debris collection zones and priority areas to facilitate debris removal operations. The Debris Project Manager will prioritize which debris zones will be cleared first based on the debris collection needs (e.g., debris volume, population density, location of critical facilities, environmental impacts, threat to public health and safety) and the event. Employees and/or contractors will collect and haul the debris from their assigned debris zones through

monitored routes to the designated local transfer station or alternate site for sorting and processing.

Debris Hauling Routes

Streets with no weight limits and three and over seven ton limits could be used for hauling debris through the City of Berkeley. A map of the City of Berkeley's designated truck routes and prohibited streets can be found in Attachment A. The City of Albany's designated truck routes include San Pablo Avenue, Solano Avenue and Buchanan Street. The City of Emeryville's designated truck routes include San Pablo Avenue and Powell Street. A map of the City of Oakland's designated truck routes and prohibited streets can be found in Attachment A.

4.2.3. Vegetative Debris¹⁴

Vegetative debris includes whole trees, tree stumps, tree branches, tree trunks and other leafy material. The collection of vegetative debris may require the use of flatbed trucks, dump trucks, and grapple loaders depending on the volume of debris. Most vegetative debris includes large piles of tree limbs and branches that are placed on the public right-of way. The collection of vegetative debris is eligible for reimbursement if it is within public rights-of-way and collected by an eligible applicant (e.g., State government agency, local government, private non-profit organization). The City should discuss with FEMA the number passes for debris collection that may be eligible.

Vegetative debris is bulky and consumes a significant volume of landfill space if buried. To minimize the use of landfill space, vegetative may be reduced by as much as 75 percent of its volume by mulching or grinding. Costs to reduce vegetative debris are eligible for Public Assistance grant funding.

4.2.4. Construction and Demolition Debris¹⁵

Construction and demolition (C&D) debris consist of damaged components of buildings and structures, such as lumber and wood, gypsum, wallboard, glass, metal, roofing material, roofing material, tile, carpeting and floor coverings, window coverings, pipe, concrete, fully cured asphalt, equipment, furnishings, and fixtures. In order to be eligible, C&D debris must be a result of a Presidentially declared disaster. Certain types of C&D debris are recyclable and should be separated to conserve landfill space.

Some C&D debris may be hazardous, such as asbestos roofing and floor tile, and lead pipes. Attachment N includes best management practices from Cal EPA to address the removal of hazardous materials, including asbestos containing materials. Documentation of the debris origin, any processing (reduction or recycling) and the final disposition is required for Public Assistance grant funding. The removal of construction by-products generated by repairs or

¹⁴ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 23.

¹⁵ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 26-27.

rebuilding is often covered by insurance policies or included in the overall cost for reconstruction projects; therefore it is not eligible for Public Assistance grant funding.

4.2.5. Collecting Hazardous Waste and White Goods

Household Hazardous Waste (HHW)

HHW may include cleaning agents, lawn chemicals, fire extinguishers, propane tanks, gasoline cans, aerosol spray cans, paint, lawn chemicals, fluorescent lamps, oxygen bottles, batteries, and household electronics. Residents will be encouraged to separate and dispose of HHW at a permitted drop-off facility to ensure that HHW does not enter the debris stream at TDMS locations. The Alameda County Household Hazardous Waste Program currently operates the following drop-off facilities for HHW:

- Oakland Facility: 2100 East 7th Street, Oakland
- Hayward Facility: 2091 West Winton Avenue, Hayward
- Livermore Facility: 5584 La Ribera Street, Livermore

A list of other facilities in or near the City of Berkeley that may accept certain types of HHW can be found in Attachment CC. The City, in coordination with the County and State, could also host an HHW collection center event following a disaster, in order to avoid the mixing of hazardous waste with other disaster debris. The City may establish a contract with an HHW collection firm to ensure that HHW is properly disposed. The City will coordinate with the California Department of Toxic Substances Control (DTSC), Alameda County Department of Environmental Health and the California Environmental Protection Agency (Cal EPA) to ensure cleanup actions meet local, state and federal regulations.

White Goods

White goods may include refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, water heaters and commercial chillers. Residents will be encouraged to separate white goods from other types of debris to ensure that white goods are not mixed with other debris during collection. White goods debris that contain ozone depleting refrigerants, mercury or compressor oils need to have such materials removed by a certified technician before recycling. The City will comply with all state and federal laws regarding the final disposal of removed refrigerants, mercury, or compressor oils. The City will transport white goods debris (small appliances) from the local transfer station to Sims Metal Management's scrap metal recycling yard in Richmond (600 South 4th Street). The City has a contract with Sims Metal Management to provide for scrap metal collection (e.g., old refrigerators), and transportation to disposal facilities. The City may use additional contracted services to assist with the collection of white goods debris following a disaster. The City will coordinate with the Alameda County Department of Environmental Health and Cal EPA to identify other licensed disposal sites for white goods debris, as needed.

4.2.6. Use of Force Account Labor

Force account labor and equipment includes the City’s internal resources (see Attachment I for a list of force account equipment). The City of Berkeley will use internal resources to the greatest extent possible during disaster debris operations. If the City needs additional resources to conduct disaster debris operations, the City may seek external support through mutual aid, contracted resources or by requesting assistance from the Operational Area (OA). Table 4-1 provides the resource requirements for earthquake, wildfire, flooding, rainfall-triggered landslides and tsunami events based on the debris forecasting models in Section 2.3.

The assumptions for resource requirements for earthquake, wildfire, flooding, rainfall-triggered landslides and tsunami events are:

- Average debris collection truck capacity: 80 cubic yards (CY)
- Average number of trips per day for each collection truck: 5
- Volume of debris that can be collected per day for each truck: 400 CY
- Average truck to loading equipment ratio: 2:1
- Volume of debris that can be staged per acre based on a 15 foot stack height: 24,200 CY/acre

Table 4-1. Debris Resource Requirements

Type of Incident	Total Debris (CY)	DMS Acres Needed	Estimated Collection Period	Trucks Needed	Personnel (Debris Monitors)
5.4 Earthquake (Hayward Fault)	310,600	13	60 Days	13	9
6.6 Earthquake (Hayward Fault)	830,320	35	60 Days	35	18
7.0 Earthquake (Hayward Fault)	1,863,580	78	90 Days	52	26
100-Year Flood	89,162	4	30 Days	7	5
500-Year Flood	424,451	18	60 Days	18	13
Wildfire Zone 2 (Very High)	2,904,418	121	90 Days	80	40
Wildfire 3 (Extremely High)	79,980	4	30 Days	7	5
Landslides (Active)	1,342,830	56	90 Days	37	19
8.2-Foot Tsunami	197,399	9	30 Days	16	11
>11.5-Foot Tsunami	419,284	18	60 Days	17	13

Eligible debris removal work accomplished with force account labor and equipment may be funded under FEMA's Public Assistance Program. Eligible debris removal work must meet all of the following:

- Be required as a result of the disaster;
- Be located within a designated disaster area, except that sheltering and evacuation activities may be located outside of the designated disaster area; and
- Be the legal responsibility of an eligible applicant.

For debris removal work, the overtime labor costs (including benefits) of the City's employees are eligible for Public Assistance funding. Straight-time costs may be eligible. Please refer to Attachment V for specific eligibility guidance regarding labor costs for permanent, temporary, essential, reassigned and seasonal employees. Force account equipment may be reimbursed at an hourly rate and must be in actual operation performing eligible work. The hourly rate typically includes the operation, depreciation, maintenance and fuel for that particular piece of equipment. Operator labor costs are not included in the hourly rate. Please refer to FEMA's Schedule of Equipment Rates, which is available at www.fema.gov/schedule-equipment-rates.

It is important for the City's debris management personnel to accurately document hours worked and equipment used to complete the eligible debris removal work. FEMA Force Account Labor and Equipment Summary Records Forms (see Attachment X) are frequently used to document work completed with force account labor and equipment. These forms provide the minimum information required for Public Assistance grant consideration. The City must maintain source documentation, such as timesheets, work logs, and equipment use sheets that support the hours claimed for disaster-related work.¹⁶

4.2.7. Monitoring of Debris Operations¹⁷

Debris monitoring involves observing and documenting eligible debris removal work performed from the point of debris collection to final disposal. Debris monitoring documentation is critical to verify that debris operations are eligible for reimbursement, the contractor is performing the scope of work required by the contract, costs are reasonable, quantification of the debris is accurate and compliance with all regulatory requirements. Failure to properly monitor and document eligible debris removal work and costs may jeopardize federal disaster assistance. The City should develop a reporting document (see Attachment HH) in order to request Public Assistance funding for debris removal activities. FEMA will review additional information, such as truck certification lists (see Attachment FF) and load tickets (see Attachment GG). If the City uses a contractor for debris removal monitoring, FEMA will review the contract to ensure that the reporting requirements have been met.

¹⁶ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 5, 13-14.

¹⁷ FEMA Publication 327, Public Assistance Debris Monitoring Guide, 2010, 1, 5-9, 23.

The City of Berkeley will use a combination of both force account labor and contractors to monitor their debris removal operations. If the City outsources a debris monitoring task, the contract must be awarded to a contractor who is not employed by or affiliated with the debris removal contractor. The City has the primary responsibility for monitoring its debris removal operations, including ensuring that the hired contractor performs satisfactorily. The following positions are needed to ensure safe and efficient monitoring of disaster debris operations:

Loading Site Monitors

The Load Site Monitor positions may be staffed by personnel from the Public Works Department (Zero Waste Division) and/or contractors. The Loading Site Monitor is responsible for performing on-site, street level debris monitoring at all loading sites to verify debris eligibility based on contract requirements, and initiating debris removal documentation using debris load tickets. The Loading Site Monitor has the following responsibilities:

- Estimate load volumes and issue load tickets at the point of debris collection, retaining a copy of the debris load ticket.
- Maintain logs of daily debris removal contractor performance, eligibility, or other activities as required.
- Ensure that only debris specified within the contractor's scope of work is collected for loading and hauling.

Disposal Site Monitors

The Disposal Site Monitor positions may be staffed by personnel from the Public Works Department (Zero Waste Division) and/or contractors. The Disposal Site Monitor is responsible for documenting the disposal of disaster debris at approved temporary debris management sites (TDMS) and final disposal sites. The Disposal Site Monitors will verify all load and haul-out documentation captured by loading site monitors is complete prior to commencement of debris hauling operations. This process includes the following tasks:

- Inspect truck placards for authenticity and signs of tampering.
- Verify that placard information is documented properly.
- Verify that each item on the load ticket has been completed.

The Disposal Site Monitor will estimate the cubic yards of debris in each trunk entering the TDMS and record the estimated quantity on debris load tickets. The Disposal Site Monitor has the following responsibilities:

- Complete and physically control load tickets (for both disposal and loading site monitors).
- Ensure that truck loads are accurately credited.
- Ensure that trucks are not artificially loaded.
- Ensure that hazardous wastes are not mixed with debris loads.
- Ensure that all debris is removed from trucks at TDMS or final disposal site.

Field Supervisor

The Public Works Department's Operations Manager and/or Recycling Program Manager may fill the role of Field Supervisor. The Field Supervisor has the following responsibilities:

- Schedule and deploy loading and disposal site monitors, as needed.
- Oversee loading site and disposal site debris monitoring activities.
- Resolve field operational, eligibility and safety issues.
- Communicate and coordinate daily activities with FEMA, State and City field personnel.
- Assist in the measuring of all debris hauling trucks and trailers with the appropriate contractor representatives.
- Document the condition of all trucks and trailers used in the disaster debris operations using digital photographs.
- Prepare a daily written report of all debris monitoring activities observed, including all eligible disaster debris hauled by the debris removal contractor(s).

Monitoring Methods for Debris Removal

The following methods and systems should be used to document work completed by force account labor and/or contractors:

- Debris monitor reports – a reporting document that captures the types of information required for Public Assistance reimbursement (see Attachment HH).
- Truck certification form – documents the capacity of debris removal trucks. Truck certifications should contain a unique truck number, driver name, driver phone number, license number (state issued and expiration date), tag number (state issued and expiration date), vehicle measurements, and schedule of the vehicle (see Attachment FF).
- Load ticket system – tracks the debris from the original collection point to the TDMS or final disposal location (see Attachment GG).

Training

The City's Debris Monitors must be trained on debris removal operations, debris monitoring and documentation process, and FEMA eligibility. FEMA can provide training to the City's Debris Monitors upon request.

5. Debris Management Sites

Temporary Debris Management Sites (TDMS) are established when the City is unable to transport disaster debris directly from the collection point to the final disposal site. In a large-scale disaster, the landfill may not be close in proximity to the debris collection area and/or there may be insufficient landfill space available in the short-term to dispose of the debris in a timely fashion. The purpose of the TDMS is to temporarily store, reduce, segregate and/or process disaster debris before it is transported to a final disposal facility. This section discusses the planning components to be considered when establishing TDMSs.

5.1. Site Management¹⁸

The City of Berkeley will use a combination of both force account labor and contractors to manage the TDMS. The following positions are needed to ensure safe and efficient disaster debris operations:

Debris Site Manager(s)

The Solid Waste Supervisor(s) of the Zero Waste Division and/or contractors may serve as the Debris Site Manager(s). The Debris Site Manager(s) have the following responsibilities:

- Manage a TDMS.
- Oversee waste separation and environmental protection concerns.
- Provide appropriate paperwork and reporting documentation.

Debris Monitors

Section 4.2.7 includes the specific roles and responsibilities of Debris Monitors.

Safety Personnel

The City's Solid Waste Workers and/or contractors may fill the role of Safety Officer. It is the responsibility of safety personnel to direct traffic at the site and ensure that site operations comply with state and federal occupational safety regulations.

5.2. Establishment and Operations Planning

5.2.1. Permits¹⁹

Environmental permits and land-use variances may be required to establish a TDMS. Several agencies may be involved in issuing permits and granting land-use approvals. Permits may include:

- Waste processing and recycling operations permit
- Temporary land-use permits
- Land-use variances
- Traffic circulation strategies
- Air quality permits
- Water quality permits
- Household Hazardous Waste (HHW) permits
- Fire Department permits

¹⁸ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 80.

¹⁹ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 76.

Emergency Waiver²⁰

An emergency waiver of standards grants a solid waste facility operator temporary relief from specific standards or conditions of a solid waste facility permit, such as permitted capacity, throughput and acreage. An emergency waiver of standards may only be issued when there has been a proclamation of a state of emergency or local emergency as those terms are defined under the California Code of Regulations Title 14, Section 17210.1 (j) and (k). To obtain a waiver, a solid waste facility operator should submit a written request to the Alameda County Department of Environmental Health serving as the local enforcement agency (LEA) for the County. The request should include, but not be limited to, the following information:

- A listing of the solid waste facility permit's terms and conditions to be waived to facilitate recovery and disposal of disaster debris;
- A statement of the remaining disposal capacity of the solid waste facility at the time of the request;
- A description of all facility-related diversion programs and on-site recycling facilities; and
- A list of locally approved temporary transfer or processing sites to be used to store disaster debris for future reuse or recycling.

5.2.2. Location²¹

The best locations for TDMSs are at existing disposal or recycling facilities that are near the disaster area. Transfer stations have been identified as potential TDMS locations because of their ability to immediately accept debris (see Attachment BB for a list of transfer stations in Alameda County). The following sites could be utilized for TDMS locations:

- Berkeley Transfer Station, 1201 Second Street, Berkeley, CA
- Davis Street Transfer Station and Recycling Park, 2675 Davis Street, San Leandro, CA
- All Cities Landfill/KOFY Radio Site., 4001 West Winton Avenue, Hayward, CA
- Dutra Materials, 961 Western Drive, Richmond, CA
- Golden Bear Transfer Station, 1 Parr Blvd., Richmond, CA

If existing disposal or recycling facilities are not possible, the following criteria should be considered for selecting alternate sites:

- In an area that does not impede the flow of traffic along major transportation corridors, disrupt local business operations, or cause dangerous conditions in residential neighborhoods or schools
- Away from residential areas, schools, churches, hospitals and other sensitive areas
- Consider the location with respect to around-the-clock light and noise from equipment operation, dust and traffic

²⁰ California Department of Resources Recycling and Recovery. *Emergency Waiver of Standards*. Retrieved May 28, 2018, from <http://www.calrecycle.ca.gov/swfacilities/Permitting/Guidance/Stdswaiver.htm>

²¹ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 74-75.

- Duration of availability
- Large enough to safely accommodate processing of debris materials, storing heavy equipment, and maneuvering trucks and large processing equipment
- Geographic location within the jurisdiction
- Good site ingress/egress
- Easy access to major transportation routes
- Access to electrical and water utilities for site operations.

TDMSs may require approval from the Alameda County Department of Environmental Health serving as the LEA for the County.

Baseline Data Collection

As soon as a potential site is selected, baseline data should be collected from the site to document the condition of the land before it is used as a TDMS.

The following action items are recommended to document the baseline data on all sites:

- **Photograph the site** – photos should be taken to capture the condition of the site before debris reduction activities begin. Photos should be updated periodically to document the evolution of the site.
- **Document physical features** – document the physical layout and features of the site, including existing structures, fences, culverts, irrigation systems and landscaping.
- **Historical investigation** – research the past use and ownership of the property to document any issues relating to the historical or archeological significance of the site.
- **Sample soil and water** – soil and groundwater samples should be taken prior to use of the site. Samples will help ensure the site is returned to its original condition. Soil and groundwater samples should be analyzed for total Resource Conservation and Recovery Act (RCRA) metals, volatile organic compounds, and semi-volatile organic compounds using approved U.S. EPA methods.

Ingress/Egress for Sites

Sites should have good ingress/egress to accommodate heavy truck traffic. The debris management personnel (Transportation Division) will ensure site ingress/egress is safe for pedestrians and bicyclists. Sites should also have easy access to major transportation routes to allow for trucks to transport debris to final disposal locations.

5.2.3. Site Layouts²²

Debris removal/disposal should be viewed as a multi-staged operation with continuous volume reduction. There should be no significant accumulation of disaster debris at a TDMS. Instead, debris should be constantly flowing to chippers and grinders, or recycled with the residue and

²² FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 77.

mixed construction and demolition materials going to a landfill (see Attachment Z for a sample layout of a TDMS). The debris management personnel (Public Works and Parks, Recreation & Waterfront Departments) may need to identify additional TDMS locations if the debris quantities flowing into the site are greater than the site storage and processing capacity.

5.2.4. Site Preparation²³

Site topography and soil/substrate conditions should be evaluated to determine the best site layout. When planning site preparation, think of ways to make restoration easier. For example, if the local soils are thin, the topsoil can be scraped to bedrock and stockpiled in perimeter berms. Upon site closeout, the uncontaminated soil can be spread to preserve the integrity of the tillable soils.

5.2.5. Site Operations²⁴

The Debris Site Manager should establish a buffer zone to mitigate the operational impacts to residential neighborhoods or schools, such as:

- Dust – employ water trucks.
- Noise – construct perimeter berms. Restrict hours of operation.
- Traffic – proper layout of ingress and egress procedures to help traffic flow.

Based on FEMA guidance for operating a TDMS, the following criteria should be considered:

- Consider using earthen berms, temporary barriers or any other physical restriction to separate all of the common operational uses of the site, including reduction, recycling, tipping areas (unloading), loading areas for processed debris to go to its final disposition, fuel, and water storage.
- Place plastic liners under stationary equipment such as generators and mobile lighting plants.
- Provide ample room for large equipment operations (reduction, recycling, tipping, and loading areas).
- Establish lined temporary storage areas for fuels and other materials that may contaminate soils and groundwater at the site.
- Designate a storage area for equipment and fuel.
- Strategically position water storage areas throughout the site.
- Design traffic patterns to accommodate on-site operations as well as neighborhood traffic patterns.

²³ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 76-77.

²⁴ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 78-80.

5.2.6. Volume Reduction Methods²⁵

Grinding and Chipping

Grinding and chipping of vegetative debris, on site or at a TDMS, allows for significant volume reduction (as much as 75%) and reduced disposal costs. Mulch can be used for agricultural purposes, or fuel for industrial heating, or use in a cogeneration plant to help offset the cost of the chipping and grinding operations. Plastic material can be a problem and should be eliminated. To help eliminate contaminants, root rake loaders may be used to feed or crowd materials to the chipper or grinder. Hand laborers can remove contaminants prior to feeding the chipper or grinder. Shaker screens may be used when processing stumps with root balls or when large amounts of soil are present in the woody debris.

Grinders are ideal for use at TDMSs because of their high-volume reduction capacity. Proper location of the grinders is critical for safety and noise reduction. Mulch piles should be no higher than 15 feet. A large area should be designated to store woody debris and an area to store mulch. Chippers are ideal for use in residential areas where it is cheaper to reduce the vegetation debris to mulch than to transport it to a central grinding site and then return it to the affected area.

5.2.7. Recycling²⁶

Recycling reduces the volume of mixed debris requiring landfill disposal. Recycling should be considered early in the debris removal and disposal operations because it may present an opportunity to reduce the overall cost of the project. Debris materials that can be recycled include concrete, wood and metal. The following are potential end-uses for each of these materials:

- **Concrete** – Concrete, asphalt and other masonry products can be crushed and potentially used for road construction projects or as trench landfill.
- **Wood** – Woody debris can either be chipped or ground into mulch and used for agricultural purposes or fuel for industrial heating.
- **Metal** – Metal maulers and shredders can be used to shred metal debris (e.g., white goods, aluminum screened porches, etc.). Certain metals, such as aluminum and copper, are highly valuable to scrap metal dealers. Ferrous and nonferrous metals that have been processed for recycling can be sold to metal recycling firms.

5.2.8. Final Disposal Operations

In Alameda County, there are solid waste facilities that conduct composting operations, transfer/processing operations, and disposal operations that can serve as the final disposition

²⁵ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 87-88.

²⁶ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 88-90.

site of whole, reduced, or recycled disaster debris. Attachment BB provides a list of landfill and end use facilities in the County.

5.2.9. Environmental Monitoring Program²⁷

During the debris removal operations and after the debris material has been removed from the designated local transfer station or alternate TDMS, environmental monitoring will be needed to ensure that no long-term environmental contamination is left on the site. The monitoring will include soil, groundwater and any other items that need monitoring based on pre-site testing results or issues that arose during operations.

- **Soil** – monitoring of soils should be conducted on all TDMSs to determine if any of the soils are contaminated by volatile hydrocarbons and/or metals. Contractors may do this if it is determined the hazardous material (e.g., oil or diesel fuel) was spilled on the site. This phase of the monitoring should be conducted after the stockpiles are removed from the site.
- **Groundwater** – monitoring of the groundwater should be conducted on all TDMSs to determine the probable effects of rainfall leaching through the stockpile areas.

5.2.10. Site Closure

Each TDMS will eventually be emptied of all debris material and be restored to its original condition and use. Force account labor and/or contractors will be required to remove and dispose of all mixed debris, C&D debris and debris residue to approved landfills. The Debris Project Manager should consider the following requirements for close-out of a TDMS:

- Coordinate with local and state officials, responsible for construction, real estate, contracting, project management, and legal counsel regarding requirements for implementation of a site remediation plan.
- Establish an independent testing and monitoring program.
- Ensure force account labor and/or contractors are responsible for environmental restoration of both public and leased sites; and debris removal from all TDMSs for final disposal at landfills prior to closure.
- Comply with all appropriate and applicable environmental regulations.
- Prioritize site closures.
- Develop cost estimates for site closure and remediation.
- Develop decision criteria for certifying satisfactory closure based on available baseline data.
- Develop administrative procedures for site closure phase.
- Inform local and state environmental agencies regarding acceptability of program and established requirements.

²⁷ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 75-76.

- Designate approving authority to review and evaluate force account labor and/or contractor site closure activities and progress.
- Retain staff during closure phase to develop site-specific remediation for sites, as needed, based on information obtained from the closure checklist.

6. Contracted Services

Note: This section should be reviewed annually by the General Services Manager to ensure compliance with current procurement requirements.

6.1. Emergency Contracting/Procurement Procedures

During a large-scale disaster, the City will be challenged to maintain regular waste collection services while mobilizing resources to conduct debris management operations. The City of Berkeley may rely on contracted resources for debris management services if the operational needs exceed their internal resources and mutual aid agreements. Any procurement of additional debris management services will be conducted in accordance with the City of Berkeley's procurement procedures and must also comply with state and federal procurement regulations, and the standards identified in 2 CFR 200.318 through 326 in order to be eligible for state and/or federal disaster assistance (Attachment VV includes a checklist to assist non-federal entities in complying with the federal procurements requirements). The following are general requirements to be included in bid documents and contracts:

- Use competitive bidding.
- The scope of work must be clearly defined, including criteria for responding and the time required in between the awarding of the work and mobilizing to initiate the work.
- The contractor's compensation method must be clearly defined and may include record keeping and tracking elements (e.g., load tickets, debris origin) to facilitate the state and/or federal reimbursement process and regulatory compliance.
- Costs must be reasonable and justified.

Attachment O includes FEMA guidelines for procuring contracted services. For additional information see FEMA Publication FP 104-009-2 – Public Assistance Program and Policy Guide 2016.

All City purchases, unless (a) only one viable source is found for the needed product or service (b) competition is found to be inadequate; or (c) there is an emergency and it is impractical for the City to seek competitive bids, must be made through a competitive process.

City Charter Section 67.4 governs emergency purchases:

- (a) The provisions of Section 67 of this Charter shall not apply to work done or purchases made for that which is deemed by the City Manager to be an actual emergency and of urgent necessity for the preservation of life, health or property; provided, that any such expenditure in excess of an amount set by ordinance, as provided for in Section 67.4(b), must be authorized by resolution of the Council.*
- (b) The ordinance establishing the maximum expenditure which the City Manager may make in an actual emergency shall not be adopted or amended except upon a 6/9 vote of the City Council.*

The end user department (Project Manager) will be responsible for preparing the Information or Consent Report to submit to the City Council. The General Services Division shall be given a copy of the Council Report on the reasons for emergency procurement, which will be filed with the Purchase Order (PO).²⁸ Section III of the City of Berkeley Purchasing Manual describes common City purchasing procedures. For additional information on acceptable methods of procurement see 2 CFR 200.320.

Submitting contractors are requested to provide due diligence documentation. Due diligence documentation tests the contractors previous experience with debris removal/disposal operations, financial strength, bonding experience, bonding limits, ability to acquire bonding, insurance limits and experience with insurer, and equipment availability. In addition, all contractors are evaluated through the System for Award Management (SAM) to determine if the submitting contractor is excluded from receiving federal contracts or other funding. If due diligence does not provide any reason for disqualification the contractor will be recommended by staff to the City Manager for approval. A list of debris removal and monitoring pre-qualified contractors can be found in Attachment NN.

Disaster Procurement Bay Area Group (DPBAG)

The City's Finance Department General Services Division is also a member of the Disaster Procurement Bay Area Group (DPBAG). The primary goal of DPBAG is to establish best purchasing practices and guidelines during a proclaimed emergency or disaster. This group also serves as a centralized forum for public agencies to share knowledge and valuable resources in standardizing disaster procurement policies and procedures.

Procurement Disaster Assistance Team (PDAT)

To facilitate compliance with federal procurement requirements and avoid the potential de-obligation of disaster assistance funding, FEMA has established the Procurement Disaster Assistance Team (PDAT). The PDAT provides guidance to applicants on the federal procurement

²⁸ City of Berkeley Purchasing Manual, 2016, 2.

requirements, both before and after those funds have been expended by an applicant.²⁹ Cal OES will serve as the liaison with the PDAT to ensure the City receives the most accurate information from state and/or federal representatives.²⁴

6.2. Debris Operations to be Outsourced

The following debris management-related activities may be completed using contracted resources:

- Collection, including clearance during response phase
- Reduction or recycling
- Hauling to final disposition
- Temporary debris management site (TDMS) activities
- Demolition
- Debris removal monitoring
- Environmental studies

6.3. General Contract Provisions³⁰

FEMA requires documentation to support that the City followed local procurement procedures and met the federal procurement competition requirements specified in 2 CFR 200.319. FEMA will also review actual contracts and may request additional documentation, such as historical data regarding costs for similar work to ensure contracted debris removal costs are reasonable. FEMA's general contract provisions checklist can be found in Attachment O.

The three most common types of contracts that can be used for disaster debris operations are unit price, lump sum and indefinite delivery/indefinite quantity (IDIQ) contracts.

- **Unit Price Contracts** are used when the scope of work is not well defined. Units of work are based on weight (tons) or volume (cubic yards) of debris hauled. The contractor uses the estimated quantities of work included in the City's bid solicitation package to establish a total contract price.
- **Lump Sum Contracts** are used when the scope of work can be clearly defined, with areas of work and quantities of material clearly identified. Lump Sum contracts can be defined in one or two ways: (1) Area Method, where the scope of work is based on a one-time clearance of a geographical area; and (2) Pass Method, where the scope of work is based on several passes through a geographical area. The total price for the specified work is

²⁹ FEMA. *Procurement Disaster Assistance Team*. Retrieved May 21, 2018, from <https://www.fema.gov/procurement-disaster-assistance-team>

³⁰ FEMA Publication 325, *Public Assistance Debris Management Guide*, 2007, 97-99.

established using a one-item bid from the contractor. All time and rates must be reasonable given the circumstances.

- **Indefinite Delivery/Indefinite Quantity (IDIQ) Contracts** are used when the government cannot predetermine, above a specified minimum, the precise quantities of supplies or services it will require during the contract period. IDIQ contracts are most often used for on-call service contracts, architect-engineering services, and job order contracting. Awards are usually for base years with renewal options for additional years.

6.3.1. Time-and-Materials Contracts³¹

Time-and-materials contracts are the **least preferred among contracts and should be avoided** unless a determination is made that no other contract type is suitable and that the time-and-materials contract includes a ceiling price that the contractor exceeds at its own risk. Time-and-materials contracts may be allowed for work that is necessary immediately after the disaster has occurred when the scope of work is unknown. FEMA generally limits reimbursement of time-and-materials contracts to the first 70 hours of actual work. After 70 hours of work, the applicant should have sufficient information to prepare the scope of work, estimate a reasonable cost for the contract work and solicit a lump sum or unit price contract. To quote a lump sum contract, the Contracting/Procurement Lead must provide the contractor's rates to the General Services Manager who performs a cost analysis to support the lump sum value. A unit price quote is based on the total unit price amount.

6.3.2. Piggyback Contracts

The City of Berkeley may use piggyback contracts immediately after the disaster to have debris removal work performed by Alameda County's contractors. Piggyback contracts are generally **ineligible**. However, debris removal work completed using Alameda County's pre-existing properly procured contract must meet strict criteria to be eligible. The existing contract must:

- Be viable;
- Same item must be purchased;
- Price and vendor must be the same; and
- Include written mutual consent of the original contracting parties

6.3.3. Equipment Lease

The City may need to lease equipment for disaster debris clearance and removal. The City must limit the equipment lease costs to a reasonable level in order to qualify for federal reimbursement.

³¹ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 18, 99-100.

6.4. Qualification Requirements

When soliciting bids for debris management services, the Request for Proposal (RFP) or Invitation for Bid (IFB) should outline the required qualifications of the contractors. The Debris Project Manager will ensure that all contractors can provide debris management services in accordance with the above-mentioned provisions. Specific qualifications may include, but are not limited to:

- Previous experience completing disaster debris removal operations in California
- U.S. Army Corp of Engineer's rating of "satisfactory" or higher
- Compliance with public policy
- A fair and equitable rate for services
- Financial strength, bonding experience, bonding limits, ability to acquire bonding, insurance limits and experience with insurer, and equipment availability.

6.5. Evaluation Requirements

The criteria for selecting a vendor depends on the type of solicitation issued. An Invitation for Bid (IFB) is awarded to the lowest responsive/responsible bidder. A selection committee evaluates the Request for Proposals (RFP) based on a selection criteria outlined in the RFPs. For detailed information regarding the competitive formal bid evaluation process, see Section III.8 of the City of Berkeley Purchasing Manual.

A draft RFP for disaster debris removal and other services can be found in Attachment OO. A draft RFP for debris monitoring services can be found in Attachment PP.

6.6. Solicitation of Contractors

The City's strategies and triggers for procuring contracted resources for debris management services immediately after a disaster include the following:

- Develop a list of debris removal and monitoring pre-qualified contractors through a Request for Proposal (RFP) or Invitation for Bid (IFB) process. For detailed information regarding the formal RFP or IFB Purchase Requisitions (PR) process, see Section III.7.F of the City of Berkeley Purchasing Manual.
- Provide for full and open competition consistent with the standards identified in 2 CFR 200.319. Full and open competition helps provide assurance that contract costs are reasonable; increases the number of available contracting sources; increases the probability of reasonable pricing from the most qualified contractors; and helps discourage and prevent favoritism, collusion, fraud, waste, and abuse.³²
- Develop sample debris collection contracts.

³² FEMA Public Assistance Grantee and Subgrantee Procurement Requirements, 2014, 41.

- Determine contract hauler procurement strategy.
- Develop contract hauler payment procedures.
- Develop recordkeeping requirements for both debris removal and monitoring contractors to facilitate the state and/or federal reimbursement process.

7. Private Property Debris Removal and Demolition

7.1. Private Property Debris Removal

Note: Section 7.1 should be reviewed annually by the City Attorney’s Office and the City’s Building Official to ensure compliance with current regulations and new policies and guidelines.

Generally, debris removal from private property is the responsibility of the property owner following a large-scale disaster. However, large-scale disasters may generate large quantities of debris on private property over a large area, resulting in immediate threats to the public-at-large. In these cases, the City may need to enter the private property to remove debris considered to be an immediate threat to life, public health and safety. The following section describes the legal and administrative procedures the City will follow when completing debris removal from private property.

The plan will address the three following scenarios based on the City of Santa Rosa’s guidelines for removing debris from the October 2017 Northern California wildfires:³³

1. Property owners who choose **to participate** in a Government Sponsored Debris Removal Program must complete the following documents to allow access to their properties to complete the debris removal work:
 - Right-of-Entry Permit (see Attachment E: Sample Right-of-Entry Permit). The Code Enforcement Division is responsible for processing Right-of-Entry Permits.
 - Government Issued ID
 - Insurance Policy
 - Declaration Page
 - Debris Removal Coverage page
 - Assessor’s Parcel Number (APN)
 - Signatures of All Owners, Trustees or Power of Authority
 - Trust or LLC Documents
 - 1st page of Trust, LLC, etc.
 - Signature Authorization page
 - Power of Attorney signature page

³³ City of Santa Rosa. *Private Debris Clean-up Application & Information*. Retrieved May 25, 2018, from <https://storage.googleapis.com/proudcity/sonomarecoversca/uploads/2018/01/Management-of-Sonoma-County-Fire-Packet-Updated-1.11.18.pdf>

- Any other relevant pages

Note: To avoid duplication of benefits, if property owners have a specified amount for debris removal and demolition in their insurance policy, they will need to provide that specified amount to the City for reimbursement of costs of the clean-up and demolition. Public Assistance grant funding may be used to pay for the remainder of the costs of debris removal from private property and demolition. However, a property owner may participate in the program even if the property is not insured.

2. If property owners choose **not to participate** in a Government Sponsored Debris Removal Program, they may undertake the debris removal at their own expense with work performed by qualified personnel. A Denial of Right-Of-Entry Agreement (see Attachment F) must be completed by the property owner. The debris removal work must be completed pursuant to standards set forth by the City and the State. These standards are established to ensure protection of public health. Documentation of adequate cleanup and proper disposal will be required. A building permit will not be issued until there is a certification that the property cleanup and removal of all disaster-generated debris has been completed in accordance with applicable standards and approved by the City.
3. The City will provide written notice to abate to the property owners in accordance with Title 1, Chapter 1.24, Section 1.24.030 of the Berkeley Municipal Code. If the property owners **cannot be located** or **do not accomplish** an adequate clean-up through their own actions, the City may need to enter private property to remove debris considered to be an immediate threat to life, public health and safety in accordance with Title 1, Chapter 1.24, Section 1.24.040 of the Berkeley Municipal Code. All City expenses incurred for inspection, enforcement and mitigation are subject to full cost recovery from the owner or by lien on the property in accordance with Title 1, Chapter 1.24, Section 1.24.030 of the Berkeley Municipal Code.

7.1.1. Trees, Limbs and Stumps Removal³⁴

Hazardous Trees

A hazardous tree may be eligible for removal under FEMA's Public Assistance grant program. A tree is considered hazardous if its condition was caused by the disaster; it is an immediate threat to life, and public health and safety, or improved property and it has a diameter breast height of six inches or greater. A tree with more than 50 percent of the crown destroyed or damaged; a split trunk; broken branches that expose the heartwood; is leaning at an angle greater than 30 degrees; or a tree that has fallen or been uprooted within a public-use area is eligible for removal.

Hazardous trees that are unstable and leaning into the areas used by the public are eligible for removal. Hazardous trees that have less than 50 percent of the root-ball exposed should be cut

³⁴ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 24-26.

flush to the ground. Grinding of the resulting stump after the tree has been cut flush to the ground is not eligible work.

The City should submit a spreadsheet (see Attachment L) to FEMA containing the following documentation required for Public Assistance grant consideration:

- The number of trees cut and the size.
- The location of each tree, including the street/road name and GPS coordinates of each tree removed along public rights-of-way and the property address and GPS coordinates of each tree removed from private property.
- The City may also provide photographs of the flush-cut trees and certify that the trees were six inches or greater in diameter.

Hazardous Limbs

A limb located on improved public property; greater than two inches in diameter at the point of breakage; and still hanging in a tree and threatening a public-use area (e.g., trails, sidewalks, golf cart paths) is eligible for removal. A limb on the tree located on private property that extends over a public right-of-way (e.g., sidewalk), and meets the above criteria may be eligible for removal. The City should submit a spreadsheet (see Attachment L) to FEMA containing the following documentation required for Public Assistance grant consideration:

- The number of limbs cut on each tree and a certification that the limbs were two inches or greater in diameter.
- The location of the trees, including the name of the street/road and GPS coordinates for each tree or cluster of trees along public rights-of-way, and the street address or parcel number for hazardous limbs cut on private property.
- The City may also submit photographs (e.g., hanging limbs or leaning trees) to document the immediate threat and the number of hazardous limbs cut.
- The scope of work to remove the immediate threat.
- The date, force account or contract labor, and equipment used to perform the work.

Hazardous Tree Stumps

A hazardous stump that has been uprooted and is in an area where it would be a safety hazard is eligible for removal. The City will document the removal and handling of all stumps on a per-unit cost for stump removal if it meets all of the following criteria:

- The stump has 50 percent or more of the root-ball exposed (less than 50 percent of the root-ball exposed should be flush cut);
- The stump is greater than 24 inches in diameter, as measured 24 inches above the ground;
- The stump is on improved public property or a public right-of-way; and
- It poses an immediate threat to life, public health and safety

For any uprooted stump that needs to be removed prior to FEMA's approval the City will also document the following information:

- Photographs and GPS coordinates that establish the location on public property;
- Specifics of the threat;
- Diameter of the stump 24 inches from the ground; and
- Quantity of material needed to fill the resultant hole.

Stumps measuring more than 24 inches in diameter may be eligible for removal, transport, disposal and fill of the resultant hole if the City and State agree the tree or stump is hazardous; FEMA approved the removal in advance; and a *Hazardous Stump Worksheet* (see Attachment M) is completed and submitted to FEMA for approval. The Worksheet captures information on the number of hazardous stumps removed, hazardous stump location and size, and the quantity of fill material required to fill the resultant hole.

In some instances, grinding of an uprooted stump and filling the resulting cavity may cost less than a complete extraction. In these cases, the City should present the cost comparison documentation to FEMA for consideration.

Stumps measuring 24 inches in diameter or less do not require special equipment for removal and FEMA will reimburse based on the reasonable unit cost per cubic yard, using FEMA's Stump Conversion Table found in Attachment M.

See Attachment M: Hazardous Stump Extraction and Removal Eligibility for more information on hazardous stumps.

7.1.2. Dead Animal Disposal

Should disposal of dead animals become necessary, the City will follow Natural Resources Conservation Service (NRCS) disposal guidelines for animal carcasses:

- Temporary storage of animal carcasses for transport to rendering plants
- Disposal at permitted landfills if rendering capacity is exceeded or suspended
- On-site composting if the condition of the carcasses precludes transportation to the landfill or the cost of transportation and disposal is not eligible. This option applies only to animals that die on the owner's property and that will be composted on the same property. On-site composting should only be attempted if the operator has the technical expertise, the right equipment and on-site use for the final product. The final product from the composting must not be transported off site.

7.1.3. Vehicles and Vessels³⁵

For the removal of vehicles and vessels to be eligible for removal, the City must demonstrate that the vehicle or vessel presents a hazard or immediate threat and is abandoned in accordance with Title 12, Chapter 12.98, Section 12.98.040 and Title 6, Chapter 6.20, Section 6.20.020 of the Berkeley Municipal Code. Documentation related to the removal of abandoned vehicles and vessels is required for Public Assistance grant funding.

7.1.4. Human Remains

If human remains are discovered during disaster debris operations, the field supervisor should contact law enforcement officials to report the situation. Law enforcement will investigate and coordinate removal with the Alameda County Sheriff's Office-Coroner's Bureau. Human remains do present health hazards if directly contacted. Do not handle or move the body. Recover the body if possible and wait for emergency services to arrive.

7.1.5. Garbage³⁶

Garbage is generally waste (e.g., food, packaging, plastics and paper) that is regularly picked up by the City. Household food wastes can be collected through normal municipal waste collection methods and are not eligible.

7.2. Demolition of Private Structures

***Note:** Section 7.2 should be reviewed annually by the City Attorney's Office and the City's Building Official to ensure compliance with current regulations and new policies and guidelines.*

The City may need to enter private property to demolish private structures made unsafe by disasters to eliminate immediate threats to life, public health and safety in accordance with Title 1, Chapter 1.24, Section 1.24.040 of the Berkeley Municipal Code. The following section describes the legal and administrative procedures the City will follow when completing demolition of private structures.

7.2.1. Condemnation Criteria and Procedures

Legal Documentation

The City of Berkeley has the sole responsible authority for condemnation procedures within the City boundaries. The authority is extended by Section 116 of the California Building Code.

³⁵ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 29.

³⁶ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 30.

Demolition Permitting

The Building and Safety Division is authorized by the provisions of Sub-Title 23C, Chapter 23C.08, Section 23C.08.020 of the Berkeley Municipal Code to eliminate dwelling units through demolition. If the City's Building Official determines that a building or structure is unsafe and poses an immediate threat to the public, it may be demolished without a Use Permit in accordance with Sub-Title 23C, Chapter 23C.08, Section 23C.08.070 of the Berkeley Municipal Code.

The demolition phase of the project is an extension of the private property debris removal work. In addition to the documents required for debris removal work, the City requires a building permit (see Attachment G) for the demolition of any structure in accordance with the California Building Code (Section 105.1). Demolition work will not begin until the required measures for protections of residents and pedestrians have been put in place. The City must consult with the Bay Area Air Quality Management District (BAAQMD) regarding any demolition and renovation of buildings and structures that may contain asbestos.

Inspections

The Building and Safety Division is authorized under Section 110 of the California Building Code to monitor, inspect and apply safe building and construction codes and ordinances. The process may be expedited during periods of emergency and due to the immediate threat to public safety. Title 1, Chapter 1.16, Section 1.16.010 of the Berkeley Municipal Code allows Building Officials to evaluate properties suspected of unsafe, unsanitary, or otherwise hazardous and unlawful conditions. Title 1, Chapter 1.24, Section 1.24.030 of the Berkeley Municipal Code requires the property owner to immediately remedy defects or hazardous conditions. However, under Section 116 of the California Building Code if the Building Official determines that a building is especially dangerous to human life or the public welfare the building shall be condemned. The City will comply with the codes and ordinances and streamline the process as much as possible, if necessary to demolish multiple structures to ensure the public's health and safety. Attachment H includes a checklist that may be used for demolition activities.

7.3. Navigation Hazard Removal Procedures³⁷

Damage to the Berkeley Marina caused by a large-scale disaster may include abandoned sunken boats and other debris that may impede navigation. The City will coordinate with the U.S. Coast Guard, the State marine patrol, legal counsel, marine salvage contractors, commercial divers, and certified surveyors to ensure that any navigation hazards within the City's boundaries are removed safely and efficiently.

³⁷ FEMA Publication 325, Public Assistance Debris Management Guide, 2007, 122.

8. Environmental and Other Regulatory Requirements

The California Environmental Protection Agency (Cal EPA) provides guidance for local and state agencies to conduct emergency hazardous material, waste and debris removal actions under a local or state Proclamation of a State of Emergency. Attachment M includes best management practices from Cal EPA to address the removal of hazardous materials, household hazardous waste, asbestos containing materials, and air monitoring and sampling from the property, site, or affected area of the disaster.

Remediation of Disaster Debris by Burning

The California Health and Safety Code (HSC) 41800 prohibits individual persons from using open outdoor fires to dispose of waste (e.g., petroleum, wood, combustible or flammable solid or liquid), demolition debris, tires, tar and trees. This applies to individual property owners and tenants. HSC 41800 has rarely been waived by a Governor's Proclamation of Emergency.

However, HSC 41801 does establish specific authority to any public officer, including the Governor, to set or permit fires for the following purposes:³⁸

- The prevention of a fire hazard which cannot be abated by any other means.
- The instruction of public employees in the methods of fighting fire.
- The instruction of employees in methods of fighting fire, when such fire is set, pursuant to permit, on property used for industrial purposes.
- The setting of backfires necessary to save life or valuable property pursuant to Section 4426 of the Public Resources Code.
- The abatement of fire hazards pursuant to Section 13055.
- Disease or pest prevention, where there is an immediate need for and no reasonable alternative to burning.
- The remediation of an oil spill pursuant to Section 8670.7 of the Government Code.

Environmentally and Historically Sensitive Areas

The City should put appropriate controls in place when conducting disaster debris operations in or near a designated environmentally sensitive area, such as a wetland, wildlife refuge, or endangered species habitat.

There are a number of historical properties in the City of Berkeley, including homes, buildings, churches, school buildings, a city hall, stadiums, and a theatre. The California Office of Historic Preservation and the National Register of Historic Places lists these properties on their website. The City will ensure that guidelines by the California Environmental Quality Act (CEQA) are adhered to regarding these properties. If a project funded by FEMA has the potential to affect one of these historical properties, FEMA is required to initiate Section 106 of the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires federal agencies to take into

³⁸ Remediation of Disaster Debris by Burning Recommendations from the California Air Resources Board – Office of Emergency Response for the Emergency Response and Recovery Actions, 2011, 1.

account the effects of their undertakings on historic properties. The historic preservation review process is summarized below.³⁹

- FEMA will initiate the Section 106 review process.
- FEMA will identify and assess the significance of the historic properties in consultation with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO).
- FEMA will assess adverse effects to the historic properties in consultation with the SHPO/THPO. If they agree that there will be no adverse effect, the project may proceed.
- FEMA will resolve adverse effects on the historic properties in consultation with the SHPO/THPO and other affected parties.

9. Public Information Strategy

The purpose of the public information strategy is to ensure that the residents receive accurate and timely information on the parameters, rules and guidelines for all disaster debris operations.

9.1. Public Information Officer

The Public Information Officer (PIO) will coordinate and disseminate public information on disaster debris management activities in the City to the residents, the media and other relevant stakeholders. The PIO will serve as the primary point of contact between the Public Works Departmental Operations Center (DOC), the City's Emergency Operations Center (EOC), the media and the public. A Joint Information Center (JIC) may be established to better manage public information. A JIC is a central location where PIOs involved in an emergency/event may co-locate to gather, verify, coordinate and disseminate critical emergency information, crisis communications and public affairs functions.

9.2. Pre-Scripted Information

The City will develop a public information campaign that provides frequent and consistent messages designed to familiarize residents with their role in the removal, recycling and disposal of disaster debris. After a disaster, these pre-scripted public information campaigns can be customized to effectively educate the residents about:

- Preparation of disaster debris for the initial response phase;
- Health and safety when handling debris;
- Isolation of hazardous materials and household hazardous waste (HHW) for collection;

³⁹ Advisory Council on Historic Preservation (ACHP). *Section 106 Regulations Summary*. Retrieve May 25, 2018, from <http://www.achp.gov/106summary.html>

- Segregation of all debris types, including recyclables, to the extent possible given the type and intensity of the disaster;
- Disaster debris collection/drop-off locations, hours of operation and the types of debris accepted;
- Disaster debris pickup schedules when possible
- Private property debris removal/demolition procedures (voluntary and involuntary)

Generic pre-scripted public information messages for each phase of the debris management operations can be found in Attachment D.

9.3. Distribution Strategy

The following procedures will be used to distribute the pre-scripted information to the public, media and other relevant stakeholders:

- Updating the appropriate City webpage(s) and social media platforms (Twitter and Nextdoor) with current information;
- Utilization of public access television;
- Preparation and issuance of press releases and public service announcements to radio (1610 AM), television and print media;
- Utilization of mass notification systems, including Alameda County (AC) Alert, Nixle and GovDelivery;
- Utilization of non-emergency 3-1-1 call system; and
- Maintenance of a debris hotline to address public concerns and complaints, and answer questions that are included in the public information campaign.

10. Finance and Administration

10.1. Finance

All City departments and agencies will maintain records of personnel and equipment to support reimbursement from any state and/or federal assistance that may be requested. Forms needed to track use of equipment and employee time during disaster debris operations can be found in Attachment X. The Finance Department will coordinate with the Public Works Department area to facilitate potential state and/or federal funding for disaster debris operations. The following state and federal funding sources for disaster debris operations are summarized below.

10.1.1. California Disaster Assistance Act

Title 19, Section 2925 (2) (A-C) of the California Disaster Assistance Act (CDAA), provides Cal OES authority to fund debris removal on private property when there is an immediate threat to life, public health and safety. This work may only be eligible when:

- The property owner removes all disaster debris from the property to the curb or public right-of-way;
- The local agency must obtain a signed statement from the property owner to the effect that the property owner does not have insurance covering the removal of the disaster-related debris; and
- The local agency must obtain a signed statement from the property owner giving the local agency the right-of-entry and absolving the local agency and the State of any liability relative to removal.
- Criteria: Debris removal shall be considered necessary when removal will:
 - Eliminate threats to life, public health and safety;
 - Eliminate immediate threats of significant damage to improved public or private property; or
 - Be necessary for the permanent repair, restoration, or reconstruction of damaged public facilities.
- Examples of eligible work:
 - Removing debris such as pieces of destroyed buildings, structures, signs, or broken utility poles
 - Removing loose or broken sidewalks and driveways; or
 - Removing fallen trees

Under Title 19, Section 2930(4) of the California Disaster Assistance Act (CDAA), the Director of Cal OES under the following standards approves demolition of a privately-owned building when:

- The local agency must clearly possess the legal authority and responsibility to demolish the damaged facility. The local agency must also show that such demolition does not constitute a “taking” which would require the payment of compensation to the property owner;
- The local agency requesting approval of building demolition of privately owned-buildings must be able to demonstrate that the property owner has no other source of funding to pay for structure demolition;
- The local agency must have inspected each building and determined it to be a health or safety hazard. The local agency must have a certification to this effect signed by the appropriate agency official;
- The local agency must have a signed statement from the property owner to the effect that the property owner does not have insurance covering the damage or the demolition of the building;
- The local agency must have a signed statement from the property owner giving the local agency the right-of-entry and absolving the local agency and the State of any liability relative to demolition and removal;
- The local agency must also comply with any other applicable state or federal health and safety regulation, law, or general requirement; and
- Eligibility is limited to the cost of demolishing designated buildings to the top of the foundation, removal and hauling debris to the waste-site, and back-filling of basements to a safe condition.

10.1.2. FEMA Public Assistance Program

Debris management work must meet the following criteria in order to be eligible for funding under the Public Assistance Program:

- The debris was generated as a result of the disaster.
- The debris is located within a designated disaster area on an eligible applicant’s improved property or right-of-way.
- The debris removal is the legal responsibility of the applicant.

FEMA Publication 325 Public Assistance Debris Management Guide, Part I, describes FEMA’s eligibility requirements as they relate to debris management operations.

Sections 403(a)(3)(A) and 407 of the Stafford Act at 44 CFR 206.224 provides FEMA authority to fund debris removal on private property when it is considered to be in the public interest. This work may only be eligible when:

- The disaster caused severe and widespread damage;
- The removal is necessary to eliminate an immediate threat to life, public health and safety, or to improve public or private property, or to ensure the economic recovery of the affected community to the benefit of the community-at-large;
- A municipal or county government performs the work;

- The private property owner has provided all insurance information;
- It is pre-approved by the Public Works Director and/or Federal Coordinating Officer (FCO);
- Required legal documents are in place:
 - Insurance
 - Right-of-Entry Permit (see Attachment E: Sample Right-of-Entry Permit)

In federally declared disasters, only FEMA makes eligibility determinations regarding removal of debris from private property. The City must obtain prior approval from FEMA through Cal OES if it intends to request reimbursement through the Public Assistance Program. Attachment LL describes the criteria that FEMA will use to evaluate the eligibility of debris removal work from private property under the Public Assistance Program.

Section 403(a)(3)(E) of the Stafford Act provides FEMA authority to fund the demolition of unsafe structures which endanger the public on public and private property. Attachment MM provides guidance in determining the eligibility of demolition of private structures under the FEMA Public Assistance Program.

Recent Changes to the Public Assistance Program

The President signed into law the Sandy Recovery Improvement Act (SRIA) in 2013. The law amends Title IV of the Stafford Act, which authorizes alternative procedures for the Public Assistance Program. The law identifies the following goals for the procedures:⁴⁰

- Reduce the costs to the federal government of providing Public Assistance.
- Increase the flexibility in the administration of the Public Assistance Program.
- Expedite the provision of assistance.
- Provide financial incentives for applicants to complete projects in a timely and cost-effective manner.

The law authorizes several significant changes to the way FEMA may deliver federal disaster assistance. This includes the following procedures:⁴¹

- Public Assistance alternative procedures
 - Permanent work alternative procedures
 - Debris removal work alternative procedures
- Dispute resolution
- Small project threshold review
- Reimbursement for certain force account labor straight time
- Disaster relief fund reporting
- Recommendations to reduce costs of future disasters

⁴⁰ FEMA. *Alternative Procedures*. Retrieve May 25, 2018, from <https://www.fema.gov/alternative-procedures>

⁴¹ FEMA. *Sandy Recovery Improvement Act of 2013*. Retrieve May 25, 2018, from <https://www.fema.gov/sandy-recovery-improvement-act-2013>

- Federal assistance to individuals and households
- Individual assistance factors
- Other needs assistance
- Unified federal review process
- Hazard mitigation grant program activities

Requesting Alternative Procedures for Debris Removal

Upon a Presidential disaster or emergency declaration authorizing FEMA to provide debris removal assistance, FEMA will provide eligible Public Assistance subrecipients the opportunity to participate in the alternative procedures for the debris removal pilot program. The alternative procedures authorized under the Sandy Recovery Improvement Act (SRIA) of 2013 pertain to debris removal (emergency work) and repair, restoration, and replacement of disaster-damaged public and private nonprofit facilities (permanent work). FEMA will reimburse, at the appropriate cost share level, the base and overtime wages for existing employees and hiring of additional staff performing all or part of debris removal operations. Subrecipients must notify FEMA of their intent to participate in the alternative procedures by signing and submitting the Public Assistance Alternative Procedures Pilot Program for Debris Removal Acknowledgement (see Attachment SS) before obligation of their first subaward for debris removal.⁴² For more information about the debris removal pilot program, see FEMA's Public Assistance Alternative Procedures Pilot Program Guide for Debris Removal at <https://www.fema.gov/media-library/assets/documents/167472>.

FEMA Public Assistance Grant Program Process

FEMA Public Assistance Program and Policy Guide, FP 104—009-2, Chapter 3, provides information on each phase of the Public Assistance Grant Program, including project development and requirements for administering the Public Assistance Program award. Please see Attachment TT for more information on the process necessary to apply for and receive Public Assistance.

10.1.3. Other Federal Assistance

The City may be eligible for other federal assistance programs for disaster debris management work including:

- Federal Highway Administration Emergency Relief Program:
<https://www.fhwa.dot.gov/programadmin/erelief.cfm>
- Natural Resources Conservation Commission Emergency Watershed Protection Program:
www.nrcs.usda.gov/wps/portal/nrcs/main/ca/programs/financial/ewp/
- U.S. Department of Agriculture Farm Services Agency Disaster Assistance Programs:
<https://www.fsa.usda.gov/programs-and-services/disaster-assistance-program/>

⁴² FEMA Public Assistance Alternative Procedures Pilot Program Guide for Debris Removal (Version 6.1), 2018, 1, 5.

10.2. Documentation

The Finance Department will coordinate with the Public Works Department to compile documentation of disaster-related costs.

Accounting best practices for tracking costs include the following:

- Establish a cost code for disaster-related costs.
- Coordinate with state and federal agencies to obtain disaster-specific costs tracking spreadsheets and templates.
- Establish a file structure for each site where disaster debris management work has been or will be performed.
- Maintain accurate disbursement and accounting records to document the work performed and the cost incurred.
- Review applicable local, state and federal policies and regulations, as needed.
- Document administrative costs.
- Compile documentation of disaster-related costs, including:
 - Contracts, bids, periods of performance, and locations worked
 - Property insurance
 - Donated resources (labor, equipment and materials)
 - Mutual aid
 - Force account labor and equipment
 - Equipment rental agreements
 - Fuel logs
 - Other materials, including meals and gas purchases
 - Description and photos of damage
 - Scope of work
 - Copies of estimates
 - Maintenance records
 - Site inspection records

11. Acronyms and Abbreviations

AC	Alameda County
BAAQMD	Bay Area Air Quality Management District
BCM	Berkeley Municipal Code
C&D	Construction and Demolition
Caltrans	California Department of Transportation
Cal EPA	California Environmental Protection Agency
Cal Fire	California Department of Forestry and Fire Protection
Cal OES	California Office of Emergency Services
CDAA	California Disaster Assistance Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CY	Cubic Yards
DDMP	Disaster Debris Management Plan
DFIRM	Digital Flood Insurance Rate Map
DOC	Department Operations Center
DOSH	State of California Division of Occupational Safety & Health
DTSC	Department of Toxic Substances Control
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HHW	Household Hazardous Waste
HSC	Health & Safety Code
JIC	Joint Information Center
LEA	Local Enforcement Agency
NHPA	National Historic Preservation Act
NIMS	National Incident Management System
OA	Operational Area
OSHA	Occupational Health and Safety Administration
PDAT	Procurement Disaster Assistance Team
PIO	Public Information Officer
PPE	Personal Protective Equipment
SARA	Superfund Amendments and Reauthorization Act
SEMS	Standardized Emergency Management System
SRIA	Sandy Recovery Improvement Act
TDMS	Temporary Debris Management Site
USGS	United States Geological Survey