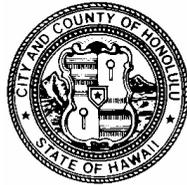


# Concrete Sidewalk Maintenance Program



## CITY AND COUNTY OF HONOLULU

DEPARTMENT OF FACILITY MAINTENANCE

Division of Road Maintenance

99-999 Iwaena Street, Halawa, Hawaii 96701

Phone: (808) 768-3600

Website: [www.honolulu.gov](http://www.honolulu.gov)

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## Overview

Over time sidewalks are damaged from weathering, tree roots and regular use. A sidewalk maintenance program to regularly repair or reconstruct damaged sidewalk is important for ensuring pedestrian safety on city sidewalks. The Concrete Sidewalk Maintenance Program for City & County of Honolulu (City) is administered by the Department of Facility Maintenance (DFM), Division of Road Maintenance (DRM) and involves daily field inspection for trip hazards, management of work orders, collaboration with community volunteers to provide immediate short-term repair, and planning to provide timely delivery of long-term repair solutions.

## Goal

The goal of the Concrete Sidewalk Maintenance Program is to prevent and repair sidewalk trip hazards in a timely manner in the interest of public safety and welfare.

## Industry Practices for Responsibility of Sidewalk

According to the U.S. Department of Transportation, Federal Highway Administration (FHWA) City charters commonly specify that the city cannot be held liable for any accidents or injuries incurred due to sidewalk conditions.<sup>1</sup> Some charters assign complete responsibility of sidewalk maintenance to the owner of the adjacent property (i.e. City of Seattle, City of Portland, City of Ann Arbor).

Pursuant to the Revised Ordinances of Honolulu, as amended, Chapter 14, Article 18 Regulations Governing the Construction of Sidewalk, Curb or Driveway within the Right-of-Way of Public Streets, the City assigns repair responsibility to the abutting property owner only when damage is attributable to actions of the abutting property owner.

The City of Oakland assigns maintenance responsibility for its sidewalks to abutting property owners unless damage is due to a city-owned street tree. Repair of sidewalks damaged by city trees is budgeted under the City of Oakland's capital improvement program. The City of San Francisco assigns the maintenance responsibility to abutting property owners except when the damage is caused by city-maintained trees, is in the sidewalk corner, is related to a utility facility or is in special areas where the City maintains the sidewalks, e.g. Market Street bricks.<sup>2</sup>

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<sup>1</sup> FHWA Chapter 10 Sidewalk Maintenance and Construction Site Safety, <http://www.fhwa.dot.gov/environment/sidewalk2/sidewalks210.htm> July 2009

<sup>2</sup> Research of current Sidewalk Maintenance Programs across the United States was conducted via government published websites, June 2009.

## **Policy**

### **1 Sidewalk Maintenance Criteria**

Sidewalk trip hazards for the City & County of Honolulu are defined by the following criteria:

- Vertical separation greater than ½”
- Horizontal separation greater than ½“
- Vegetative overgrowth encroaching onto the concrete sidewalk area
- Obstructions located within the sidewalk area
- Other defects deemed necessary for repair

These criteria are based on the guidelines provided in Chapter 10 Sidewalk Maintenance and Construction Site Safety, of the U.S. Department of Transportation, Federal Highway Administration as well as on current industry practices by municipalities across the United States.

### **2 Responsible Party**

As mentioned previously, per the Revised Ordinances of Honolulu, Chapter 14, abutting property owners are responsible for repairing the sidewalk when damage is attributable to actions of the abutting property owner (e.g. landscaping, drainage). The Department of Planning & Permitting (DPP) is the City agency responsible for enforcing this ordinance. DPP investigates sidewalk damage concerns and determines whether the City or the abutting property owner is responsible for repairing the sidewalk.

### **3 Inspection**

The City’s Concrete Sidewalk Maintenance Program has two inspection components: 1) **proactive inspection** for sidewalk trip hazards and 2) **reactive inspection** of sidewalk trip hazards from public complaints. Proactive inspection involves DFM staff regularly surveying City sidewalks for damage. Reactive inspection involves investigation by the DPP Residential Code Enforcement Branch and is done in response to public complaint.

#### **3.1 Proactive Inspection**

DFM staff conducts in-house research and field reconnaissance of potential sidewalk trip hazards on a daily basis. The in-house research includes mapping, cross-referencing with existing work orders generated through complaints, and checking jurisdiction for sidewalk maintenance. The field reconnaissance involves collecting data such as dimensions, approximate location, likely cause of damage and photographs.

High-volume pedestrian areas are proactively inspected at least once every 2 years. Neighborhood sidewalks are proactively inspected at least once every 10 years.

The following areas are identified as high-volume pedestrian areas:

1. Waikiki Special District
2. Downtown Honolulu (including Chinatown)
3. Ala Moana – Sheridan
4. University Area

Proactive sidewalk inspections in the Waikiki Special District are supplemented by the daily presence of the Waikiki Business Improvement District.

Upon identification of a sidewalk trip hazard, DFM staff executes one of the following actions:

- Patch the sidewalk trip hazard; OR
- Alert sidewalk users of the hazard by spray painting in white and organize temporary patch work to be completed within 2 months by DFM or by volunteer organizations authorized by the City<sup>3</sup>.

Damaged sidewalk requiring permanent repair (full reconstruction) is noted in the field and a work order for the repair is subsequently generated. If the sidewalk damage is thought to be attributable to actions by the owner of the abutting property, DPP is requested to investigate to determine repair responsibility.

### **3.2 Reactive Inspection**

In response to complaints from the public and other City or State agencies as well as to DFM findings, DPP conducts on-site investigations and determines if damage is attributable to the actions of the abutting property owner. Sidewalk trip hazards identified by DPP per Section 1 Sidewalk Maintenance Criteria are spray painted in white by DPP inspectors to alert sidewalk users of the hazard.<sup>4</sup>

If the abutting property owner is found responsible, DPP issues a Notice of Violation (NOV) and the property owner has 60 days after receipt of the notice to repair or reconstruct the sidewalk. If the sidewalk is not properly repaired or reconstructed before the 60-day deadline, DPP generates and submits a work order to DFM for repair of the sidewalk. DFM then repairs the sidewalk and the costs are charged to the abutting property owner.

For all other sidewalk damage inspected by DPP that needs to be repaired and is not attributable to actions of the abutting property owner, DPP generates and submits work requests to DFM for repair.

### ***4 Levels of Priority***

Sidewalk repairs are limited by funding and manpower, prompting the need for a prioritizing system. The following priority levels are used for scheduling of repairs:

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<sup>3</sup> Spray paint of hazards should be consistent, discrete and follow the guidelines attached in Attachment 'A': Sidewalk Trip Hazard Examples.

<sup>4</sup> See footnote 3. Spray paint to be provided to DPP by DFM

1. Locations where a pedestrian has tripped are top priority for immediate action. DFM remedies the sidewalk trip hazard with short-term repairs within 30 calendar days of being informed of the sidewalk trip hazard unless resources are unavailable in response to unforeseen conditions/events.
2. Sidewalk defects that are considered sidewalk trip hazards and are located within a high-volume pedestrian area are second priority.
3. Sidewalk defects that are considered as sidewalk trip hazards and are not located within a high-volume pedestrian area are third priority.
4. Public complaints on sidewalk defects that are not considered as sidewalk trip hazards and do not involve actual sidewalk trip incidents are fourth priority.

## **5 Reconstruction of Sidewalk**

Work orders are entered and managed in a Sidewalk Management Database with a graphical interface. The information is continuously reviewed by DRM planners. DRM planners plan sidewalk repair work or reconstruction projects based on priority levels (outlined in Section 4 Levels of Priority), number of sidewalk trip hazards identified in a particular area, in-house capabilities, logistics and funding for contracts to be completed by private vendors.

## **6 Volunteer Involvement**

The City owns approximately 1800 miles of sidewalk<sup>5</sup>, an amount which continues to increase with new subdivision and roadway development. Maintaining all City sidewalks presents a huge challenge. Collaborating with volunteer organizations helps the City in its effort to maintain safe sidewalks and gives the community a significant way to help keep Oahu a quality place to live.

The community can participate in the City's Concrete Sidewalk Maintenance Program in two ways: 1) volunteer to supplement the City's short-term repair activities; 2) provide the City with community verification or third-party review of the program's short-term repair activities.

### **6.1 Volunteer Repair Work**

Areas for volunteer involvement are selected based on availability of parking, low volume roads, feasibility and need. City staff conducts field reconnaissance of an area of interest in advance of scheduling a volunteer event. A City staff person is assigned as the Sidewalk Maintenance Volunteer Coordinator. The volunteer coordinator administers the volunteer program and is responsible for such activities as ordering materials and supplies, scheduling volunteer events, conducting safety meetings with key volunteer representatives prior to the volunteer event, obtaining the required signatures on release and authorization forms and overseeing the actual volunteer event. The safety meeting covers proper methods, techniques and protective equipment required to do the work.

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<sup>5</sup> The estimated amount of sidewalk owned and maintained by the City as of August 2009.

The activities expected of the volunteers include: lifting five gallon buckets of material, mixing a cement polymer material with water and adhesive, bending on knees to apply patch material and using tools such as trowels to work the patch material into place. Volunteers will be informed of the expected duties before they sign up for the event. Volunteer representatives are responsible for obtaining permission for minors and for ensuring that the volunteers are capable of performing the expected activities. All volunteers are required to sign a release form releasing the City from all claims for any damages and/or injuries due to participation in the volunteer event.

## **6.2 Community Verification**

Upon completion of a field reconnaissance and applying short-term patches, follow-up inspection by other volunteer community groups can be coordinated. The follow-up inspection by community groups provides the City with a third-party means for measuring customer satisfaction with the program. The follow-up inspection by volunteer groups involves a cursory review to ensure that all sidewalk trip hazards in a particular area were adequately addressed with short-term repairs.

## **7 City Standards**

City standards are updated periodically based on new information and technology. The data collected from the City's Concrete Sidewalk Maintenance Program provides valuable information regarding maintenance requirements. Based on the data and as appropriate, DFM makes recommendations to DPP for updating sidewalk standards.

## **Sources of Funding**

Adequate funding for this program is essential in order to deliver timely repairs. The following is a list of funding sources:

- City operating funds for sidewalk repairs and capital improvement funds for sidewalk reconstruction
- Federal grants through the Safe Routes to School grant program.  
Under this grant program sidewalk repairs within a 2 mile radius of a school is eligible for grant money.
- Federal grants through the U.S. Department of Housing and Urban Development, Community Development Block Grant (CDBG) Programs

**Attachment 'A': Sidewalk Trip Hazard Examples**

Sidewalk trip hazards identified in the field are spray painted in white to alert the public. Spray paint markings should be neat, minimal and follow the upper boundary of the sidewalk trip hazard.



Vertical separation at the score line.

Vertical separation along cracks.



***Attachment 'B' Volunteer Agreement***

***Attachment 'C' Volunteer Authorization & Release Form for  
Participants over Eighteen***

***Attachment 'D' Volunteer Authorization & Release Form for  
Participants under Eighteen***

***Attachment 'E' Volunteer Sign-in Sheet***