



AGENDA REPORT

TO: Steven Falk
Interim City Administrator

FROM: G. Harold Duffey
Director, Oakland Public Works

SUBJECT: SUPPLEMENTAL – 2023 Winter Storm Response

DATE: March 29, 2023

City Administrator Approval

Date: Apr 6, 2023

RECOMMENDATION

Staff Recommends That The City Council Receive An Informational Report On Ongoing And Proposed Winter Storm Responses Relative To Potholes, Road Closures, And Landslide Responses.

REASON FOR SUPPLEMENTAL

This report is a supplemental report to the [March 29, 2023 informational report](#). It provides additional information from Oakland Public Works (OPW) regarding the estimates damages the City of Oakland (City) suffered due to the Winter Storm Event from December 31, 2022 - January 20, 2023. As noted previously, on January 4, 2023, the City declared a Local Emergency and the State of California declared a State Emergency due to the winter storm that caused major interruptions to the City's services and operations. Based on data collected from the January Winter Storm Event, the City had incurred \$7.085 million in damages due to the storm. The primary cause of damages and the estimated cost of repairs are summarized below:

1. Damage related to debris (Federal Emergency Management Agency (FEMA)-Category A): \$790,000
2. Damage related to Emergency Protective Measures (FEMA-Category B): \$1.13 million
3. Damage related to damaged roads (FEMA Category C): \$1.575 million
4. Damage related to Water Control Facility (FEMA Category D): \$1.97 million
5. Damage related to Parks, Recreation and Other (FEMA Category G) \$1.62 million

Oakland and the Bay Area continue to experience severe weather conditions, and it is expected that additional damages will be incurred in the near future. OPW is actively pursuing a Federal Emergency Management Agency (FEMA) Storm Disaster grant to fund repairs in various categories. However, due to potential delays in receiving the grant, it is recommended that the City consider establishing a Disaster Emergency Restoration fund to address urgent damage without waiting for the FEMA grant to be processed.

Special PWTC
April 10, 2023

BACKGROUND

The City’s storm damage incidents are categorized based on FEMA definitions and categories of damage. City staff and contractors were dispatched during the January Winter Storm Event to mitigate immediate hazards, provide emergency repair plans to protect City assets, and minimize impact to City operations and damages to City and private properties. The Emergency Operations Center (EOC) was activated to provide centralized direction and decision-making daily during the January Winter Storm Event to ensure proper coordination between City departments and effective mitigation planning was in place.

Category A – Damage related to debris: \$790,000

This category includes removal of debris in the public interest and necessary to:

1. Eliminate immediate threats to lives, public health & safety
2. Eliminate immediate threats of significant damage to improved public or private property
3. Trees and Woody Debris Building Components
4. Sand, Mud, Silt, & Gravel
5. Removal of Temporary Levees

OPW removed debris from throughout the city from the severe winter storms, including approximately 150 fallen trees during the January Winter Storm Event and over 100 additional fallen trees estimated during the February and March storms. See **Table 1** below for additional details regarding the Category A damages in the city.

Table 1: Category A Damages

Category	Name of damage/facility	Describe Damage	Primary Cause of Damage	Approx. Cost	% Work Complete
A	6000 Shepherd Canyon Road	Landslide and major erosion caused sediment to enter roadway and clog nearby storm drains. This caused flooding in the area. Construction work was needed to restore storm drain systems. The City removed heavy mud and silt and unclogged the storm drains.	Landslide	\$40,000	40%
A	7698 Surrey Lane Temporary Stabilization	1/6/23, large rain event precipitated significant mud on 13971 Skyline Boulevard. Causing a Mud slide onto the property at 7698 Surrey Lane. The sediment filled an ephemeral creek channel that runs on both parcels and redirected water, which normally flows into a City storm drain easement 7698 Surrey Ln. The sediment clogged the City's storm drain and a large pile of mud filled up the ephemeral channel. The City sent a geotechnical engineer to assess and a contractor to remove mud to clear the channel and reestablish flow into the City's storm drain easement.	Landslide	\$250,000	100%

A	Various locations Tree Removal	<p>The Tree Services unit has responded to 625 downed trees since the beginning of January. This number does not include downed limbs, which also requires a significant level of response and cost.</p> <p>The projected costs of response for all winter tree response activities will significantly exceed the unit's annual budget of \$200,000 for responding to tree emergencies. That budget was already partially expended before the beginning of the calendar year (funding is issued at the beginning of the fiscal year in July and tree emergencies occur year-round).</p> <p>To date the Tree Services unit has received all January storm contractor invoices totaling \$405,661.23. February and March invoices are still being received but it is anticipated total contractor costs will be between \$1 - \$1.5 million.</p>	Wind	\$1,000,000 - \$1,500,000	60%
TOTAL ESTIMATED DAMAGED PER FEMA CATEGORY A:				\$2,000,000	

Category B – Damage related to Emergency Protection Measures: \$1.13 million

This Category includes search and rescue, security, emergency pumping, sandbagging, detour and warning signs, EOC activation, emergency and temporary repairs, overhead power lines, emergency medical facilities, emergency evacuations, and activities undertaken before, during and following a disaster to save lives and protect property. The completed Category B emergency protective measures for public safety throughout the City as detailed in **Table 2** below.

Table 2: Category B Damages

Category	Name of damage/facility	Describe Damage	Primary Cause of Damage	Approx. Cost	% Work Complete
B	West moorland Dr	Tarping installed at existing landslide site to protect from further soil movement	Severe Storm	\$10,000	100%
B	Grandview Rd	Tarping installed at existing landslide site to protect from further soil movement	Severe Storm	\$10,000	100%

B	Merriewood Dr Emergency Response	Flooding caused roadway edge failure. Emergency contractor needed to tarp exposed, eroded hillside and to install safety measures. Geotechnical consultant was sent to site to assess and determine urgent measures needed and urgency of permanent repair.	Landslide	\$30,000	100%
B	Bay Forest Dr. @ Tunnel Rd. culverts emergency repair	Hillside erosion after culverts clogged with sediment requiring emergency repairs.	Severe Storm	\$50,000	100%
B	Longcroft and Chelsea Drives storm drain - assessment	Flooding at 6470 Longcroft Drive, intersection flooded after storm drain became blocked with sediment. Emergency pumping, sandbag installed to mitigate flood.	Flood	\$20,000	100%
B	Longcroft and Chelsea Drives storm drain - improvement	Flooding at 6470 Longcroft Drive, intersection flooded after storm drain became blocked with sediment. Emergency pumping, sandbag installed to mitigate flood.	Flood	\$100,000	0%
B	769 Santa Ray Storm Drain Emergency Repair	1/6/23 rain caused erosion/sinkhole around storm drain along City easement on private property. Storm drain easement located between two residences. Emergency repair needed to avoid foundation settlement.	Flood	\$5,850	100%
B	Various Locations Landslide cleanup	January Winter storm landslide stabilization. Emergencies caused by rain storms at various locations (West Moorland, Grandview, etc.)	Severe Storm	\$200,000	0%
TOTAL ESTIMATED DAMAGED PER FEMA CATEGORY B:				\$1,125,850.00	

Category C – Damage related to Damaged Road and Bridges: \$1.575 million

The damages in this Category include mitigation, repair and replacement of City roads and bridges, involving work such as:

Roads

- Surfaces
- Bases
- Shoulders
- Ditches
- Drainage Structures
- Low Water Crossings
- Slope Failures

Bridges

- Decking & Pavement
- Piers
- Girders
- Abutments
- Slope Protection
- Approaches

Multiple roads in the City were damaged due to flooding during the January Winter Storm Event, as detailed in **Table 3** below.

Table 3: Category C Damages

Category	Name of damage/facility	Describe Damage	Primary Cause of Damage	Approx. Cost	% Work Complete
C	Oakland Zoo Entrance	Oakland Zoo Entrance with embedded culvert completely washed off during rain storm, causing the entire entrance roadway failed and collapsed	Severe Storm	\$650,000	100%
C	Golf Links Rd (location 1)	Roadway edge failure requiring single lane traffic closure.	Landslide	\$250,000	0%
C	Golf Links Rd (location 2)	Roadway edge and guardrail failure.	Landslide	\$250,000	0%
C	Claremont Ave (location 1)	Roadway edge failure encroaching on traffic lane	Landslide	\$100,000	0%
C	Claremont Ave (location 2)	Roadway edge failure that damaged guardrail	Landslide	\$100,000	0%
C	Merriewood Dr Permanent Repair	Roadway edge failure encroaching on traffic lane	Landslide	\$75,000	0%
C	Tunnel Rd	Roadway edge failure encroaching on traffic lane	Landslide	\$150,000	0%
TOTAL ESTIMATED DAMAGED PER FEMA CATEGORY C:				\$1,575,000	

Category D: Damage related to Water Control Facilities \$1.97 million

This Category includes damages and repair to the following assets: dams and reservoirs, levees, engineered drainage channels, canals, aqueducts, sediment basins, shore protective devices, irrigation facilities, and pumping facilities.

As described below in **Table 4**, multiple storm drains throughout the city were damaged during the January Winter Storm Event due to flooding and clogged debris.

Table 4: Category D Damages

Category	Name of damage/facility	Describe Damage	Primary Cause of Damage	Approx. Cost	% Work Complete
D	Bay Forest Dr. @ Tunnel Rd. culverts - long term fix	Hillside erosion after culverts clogged with sediment requiring permanent	Severe Storm	\$300,000	0%
D	Lion Creek between Leona Creek Dr. and Union Pacific Railroad/San Leandro Blvd.	Basement of Coliseum Connections Apartments flooded 12/31/22 (805 71st ave oakland ca). The City storm drain system was not clogged but is influenced by tides. A project to add a flap gate at Outfall to Lion	Flood	\$250,000	0%

		Creek will reduce flood events in the adjacent neighborhood including around 805 71st Ave Oakland CA.			
D	769 Santa Ray Storm Drain Permanent Repair	To prevent future sinkholes caused by heavy rainfall, the City repaired the entire 144-foot storm drain, a portion of which was damaged in FEMA 4683-DR-CA event at 769 Santa Ray.	Flood	\$60,000	30%
D	1815 Woodhaven Storm Drainage Improvement	Stormwater flood flows down Overlake Ct. are not being captured by existing inlets on Overlake Ct. and instead flow down the 15' path behind 1815 Woodhaven and onto private properties.	Flood	\$200,000	0%
D	4525 Harbord Dr.	Damaged storm pipe located under 4525 Harbord Dr. The property owner noticed a small sinkhole forming in the basement, running along the area where the storm pipe runs under the home. CCTV footage indicates the pipe has multiple fractures throughout.	Flood	\$250,000	0%
D	4100 Redwood Rd.	1/4/23 - On south side of property City storm drain runs along residential homes, under a parcel, and out to Redwood Rd. The City's 22" storm drain on 4100 Redwood cracked during December and early January rains causing water to shoot onto 4100 Redwood Rd and run down the neighboring parcels. Repair is needed.	Flood	\$200,000	0%
D	Chimes Creekbank Erosion on City Right-of-Way	Flooding eroded Chimes Creek bank around a sewer manhole. Requires biotechnical bank stabilization to protect adjacent private property and City right-of-way.	Flood	\$300,000	0%
F	15 Mall Court Landslide	Broken sewer line resulting from fallen tree caused by landslide and severe January winter storm. Temporary repair completed, flow is operational. Permanent repair planning underway. City staff developed emergency repair plans and hired emergency contractor. Work will be completed spring 2023.	Landslide	\$200,000	10%
F	7698 Surrey Lane Permanent Repairs within City easement	Repair and improve storm drainage inlet located within easement on 7698 Surrey Lane to help prevent clogging caused by flooding/landslides in the future.	Landslide	\$100,000	0%
F	Bay Forest Dr. @ Tunnel Rd. culverts emergency repair	Hillside erosion after culverts clogged with sediment requiring emergency repairs. The culverts require permanent replacement	Severe Storm	\$100,000	0%
TOTAL ESTIMATED DAMAGED PER FEMA CATEGORY D:				\$1,970,000	

Category G – Damage related to Park, Recreation and Others: \$1.62 million

The work in this Category includes playground equipment, swimming pools, bath houses, tennis courts, boat docks, piers, picnic tables, golf courses, fish hatcheries, mass transit facilities. See **Table 5** below for description of the damages that occurred in this Category during the January Winter Storm Event.

Table 5: Category G Damages

Category	Name of damage/facility	Describe Damage	Primary Cause of Damage	Approx. Cost	% Work Complete
G	Chelsea Court - Assessment	Hillside erosion from concentrated stormwater flows onto property. City contractors assessed potential future storm drainage structure.	Severe Storm	\$10,000	0%
G	Chelsea Court - Storm drainage installation	Hillside erosion from concentrated stormwater flows onto property. City contractors assessed potential future storm drainage structure.	Severe Storm	\$100,000	0%
G	Palos Colorado trail in Joaquin Miller Park - assessment	Landslide onto trail resulting in trail closure and concerns for emergency vehicle access above. Assessment conducted to develop repair urgency recommendation and recommendation for future repair.	Landslide	\$10,000	100%
G	Landslide/erosion on City-owned parcel adjacent to Marlow Drive	Early January 2023, City-owned hillside parcel, APN #48-5813-1-8, and a private hillside parcel, APN #48-5813-2-5, landslide/erosion caused significant amounts of mud to enter private properties on Marlow Drive and the street. 185 Marlow Dr. most affected. Street was covered in mud. Permanent hillside stabilization measures needed on the City parcel to prevent future erosion and impacts to private properties and road.	Landslide	\$400,000	0%
G	Dimond Park Erosion	Sausal Creek flooded and caused erosion damage to a repaired sinkhole that formed due to a retaining wall in poor condition. The entire length of poor condition retaining wall protects the park from the creek and should be removed and creek bank laid back - install biotechnical bank stabilization measures.	Flood	\$1,000,000	0%
G	Palos Colorado trail in Joaquin Miller Park - repair	Landslide onto trail resulting in trail closure and concerns for emergency vehicle access above.	Landslide	\$100,000	0%
TOTAL ESTIMATED DAMAGED PER FEMA CATEGORY G:				\$1,620,000	

Pictures of the incidents listed in Categories A through G are included in **Attachment A**: FEMA 2023 Storm Damage.

ANALYSIS AND FISCAL IMPACT

Since January 2023, the City has experienced multiple heavy storms that significantly increased the need for emergency funding to repair and restore the affected areas. While all areas were temporarily made safe, this report highlights specific areas that require proactive measures to be taken for proper repairs as soon as possible. The restoration effort will require time to plan, design, and implement, with coordination between OPW and other City departments such as Economic & Workforce Development, Real Estate Division, Building & Planning, Finance, and the Oakland Department of Transportation.

OPW is collaborating with consultants to develop repair plans that involve hydrology and structural analysis, and is actively working with FEMA to secure funding and grant support through the State and Federal Disaster Relief Fund. Several meetings have already taken place between the City and FEMA, and preliminary information has been submitted by the City for initial evaluation.

The preliminary assessment shows that the City has incurred damages estimated at around \$7.1 million, which are not included in the City's Capital Improvement Program (CIP). The City does not have sufficient emergency restoration funds to address damages caused by the unexpected January Winter Storm Event. In preparation for the next severe weather event or other emergency, it is crucial that the City set aside an emergency fund for OPW and other departments to complete urgent restoration projects and repair damages that could impact City operations and the health and safety of Oakland residents.

Staff are actively pursuing FEMA funding for the 2023 Winter Storm restoration effort, however the City may need to seek an additional funding source to enable immediate and urgent restoration efforts to commence while awaiting confirmation of FEMA funding. Alternatively, restoration efforts will need to be placed on hold until the projects can be included in the next CIP project cycle in 2025. City assets and operations may be negatively impacted in this situation.

COORDINATION AND PUBLIC OUTREACH

The City's EOC was activated during the January Winter Storm Events and served as a central point of coordination and communication amongst City departments, neighboring cities and counties, and other agencies such as East Bay Municipal Utilities District, Pacific Gas & Electric, and Alameda-Contra Costa (AC) Transit. Updates on advisory and incident responses were provided to the public through four main channels: Nextdoor weblink, City of Oakland Facebook page, City of Oakland Twitter page, and City of Oakland Instagram page. Residents received up-to-date information as the EOC received status updates from the City's response teams to the incidents.

The EOC also coordinated the activation of responses by working closely with the City's OAK311 Call Center. Residents were able to report new incidents effectively through OAK311, allowing the City to respond quickly and effectively to mitigate storm damages.

ACTION REQUESTED OF THE CITY COUNCIL

Staff Recommends That The City Council Receive An Informational Report On Ongoing And Proposed Winter Storm Responses Relative To Potholes, Road Closures, And Landslide Responses.

For questions regarding this report, please contact Siew Chin Yeong, Assistant Director of Public Works at syeong@oaklandca.gov.

Respectfully submitted,



G. HAROLD DUFFEY
Director, Oakland Public Works

Prepared by:
Siew-Chin Yeong, Assistant Director
Bureau of Design & Construction

Attachment (1):

Attachment A: FEMA 2023 Storm Damage Report