



AGENDA REPORT

TO: Steven Falk,
Interim City Administrator

FROM: Fred Kelley
Director, Oakland Department
of Transportation

SUBJECT: 2023 Winter Storm Responses

DATE: March 29, 2023

City Administrator Approval

Date: Mar 29, 2023

RECOMMENDATION

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

EXECUTIVE SUMMARY

Climate change is increasing the frequency and intensity of extreme storm events globally – including in the City of Oakland (City). Calendar Year 2023 began with an “atmospheric river” weather event that started on New Year’s Eve and resulted in over 18 inches of rain in the City over 23 days, the equivalent of over 69% of average annual rainfall (Winter Storm Event). In response, the City activated its Emergency Operations Center, coordinated by the Oakland Fire Department (OFD) Emergency Management Team, on January 4th, 2023, with the Oakland Department of Public Works (OPW) and Oakland Department of Transportation (OakDOT) leading operations efforts in partnership with the City Administrator’s Office, Oakland Police Department (OPD), OFD and other city and regional agencies informed by daily updates from the National Weather Service. That same day, [the City of Oakland proclaimed a local emergency](#), as did the [State of California](#). Oakland’s Emergency Operations Center Operations officially concluded on January 20, 2023.

At the request of the City Council, this report is specifically focused on OakDOT’s responses to landslides (focused on those impacting public right-of-way), road closures, and potholes and is a snapshot in time focused on the response to the Winter Storm Event from December 31, 2022 - January 20, 2023.

As a result of the Winter Storm Event, OakDOT Great Streets Delivery Division has responded to 29 requests for engineering assessment for storm-related issues. To date, OakDOT has identified six (6) storm damaged locations affecting the right-of-way requiring permanent repair:

- 10424 Golf Links Rd: Erosion of creekbank encroached upon roadway requiring single-lane closure
- 10249 Golf Links Rd: Erosion of roadway edge damaged guardrail
- 7845 Claremont Ave: Erosion of creekbank encroached upon roadway edge
- 7951 Claremont Ave: Erosion of creekbank damaged guardrail

- 5671 Merriewood Dr: Storm drain failure resulted in erosion of hillside encroaching on roadway
- 2201 Tunnel Rd: Storm drain failure resulted in erosion of hillside encroaching on roadway

In the Winter Storm Event, eight road closures were tracked: six in the City's right-of-way, one in Caltrans right-of-way (State Route 77/185, commonly called 42nd Ave), and one on the property of the Oakland Zoo (Entrance Road). Three closures were caused by flooding, two by landslides, one by a downed tree, and two by erosion. The duration of the closures ranged from one day to the ongoing closure on Golf Links Road that began in early January.

In January 2023 alone, there were 369 requests submitted to Oak311 related to potholes/roadway depressions – higher than requests from the previous three years. The number of pothole related service requests were notably lower than the 543 pothole-related requests received in January 2019 - another year that started with a major atmospheric river event. These recent requests are in addition to the approximately 1,000 outstanding requests for pothole repair received via Oak311 in 2022.

City staff is working with representatives from the California Office of Emergency Services (CalOES) and Federal Emergency Management Agency (FEMA) to seek reimbursement for all eligible costs associated with this season's winter storms under disaster declaration DR-4683-CA. Eligible reimbursement costs may include debris removal and emergency response as well as permanent repairs damage caused by flooding, landslides, mudslides, or other severe winter weather experienced between December 27, 2022 to January 31, 2023. Please note that OPW will lead permanent repair efforts for storm drain failures, landslides outside the right-of-way, and other storm damage incidents not affecting the right-of-way.

The latest winter storms continue to elevate the importance of coordinated, inter-agency efforts to address the needs of Oaklanders. For infrastructure emergencies, this work occurs daily through ongoing 24/7/365 emergency responses facilitated by Oak311 and OPW/OakDOT standby emergency crews as well as OFD and OPD dispatch, and in the case of more extreme events through the Emergency Operations Center. Climate change models predict that extreme weather conditions will continue to worsen – and therefore the City of Oakland can anticipate more frequent emergency responses and more severe impacts of extreme weather. In this context – preventive efforts include: continuing to invest in paving to increase the quality of our streets while also implementing safety improvements; developing more nimble contracting mechanisms for predictable emergencies; implementing Oakland's [Equitable Climate Action Plan \(ECAP\)](#); and filling staffing vacancies to deliver timely services to Oaklanders.

BACKGROUND / LEGISLATIVE HISTORY

Climate change is increasing the frequency and intensity of extreme storm events globally – including in Oakland. 2023 began with an “atmospheric river” weather event that started on New Year's Eve and resulted in over 18 inches of rain in Oakland over 23 days, the equivalent of over 69% of average annual rainfall. In response the City activated its Emergency Operations Center, coordinated by the Oakland Fire Department's (OFD) Emergency Management Team, on January 4th, 2023, with the Oakland Department of Public Works (OPW) and Oakland Department of Transportation (OakDOT) leading Operations efforts in partnership with the City Administrator's Office, Oakland Police Department, Oakland Fire Department and other city and regional agencies informed by daily updates from the National Weather Service. That same day [the City of Oakland proclaimed a local emergency](#),

as did the [State of California](#). Oakland's Emergency Operations Center Operations related to the winter storm event officially concluded on January 20th, 2023.

This Winter Storm Event emergency response leveraged the ongoing, year-round, 24-hour emergency response efforts that are coordinated by OPW and OakDOT with standby crews responding to emergencies in the public right-of-way as needed 365 days a year, addressing issues related to sewers, streets, sidewalks, signals, street lights, illegal dumping, and other infrastructure emergencies.

While winter storms are predictably increasing in duration and intensity due to climate change, winter storms are not new to Oakland. Past reports to Council related to Winter Storms include a [June 2017 report and resolution](#) following significant damage to public infrastructure in January-February 2017 due to severe storms. The resolution allowed the City to accept and appropriate funds from the FEMA and CalOES estimated to be \$3,782,303 to expedite the process for restoring streets, sewer and drainage infrastructure that was damaged by the storms and reimburse the City for costs of debris removal and emergency repairs that were undertaken during the storms.

Additionally, a [July 2018 report to Council](#) included a resolution to waive further advertising and competitive bidding and authorize the City Administrator or designee to negotiate award and execute construction contracts in an amount not to exceed \$2,936,384 without returning to Council, in the open market for permanent roadway repair work at sixteen winter storm landslide sites that were damaged in storms from 2016-2018. At these 16 sites, landslides undermined the roadway and collapsed one or both lanes closing them to traffic affecting access for area residents. Unlike other cities in the Bay Area, Oakland residents do not pay fees or taxes towards maintaining, repairing and improving storm drainage, and the City has no dedicated funding source for storm drainage. Providing adequate storm drainage in steep terrain, with a lot of impervious surfaces and high residential density that concentrates storm water flows, drainage is complex and challenging. Only a small amount of the City's scarce resources are diverted to provide a minimal level of storm drainage service. Inadequate and damaged storm drain system is often the cause of landslides resulting in expensive repairs later.

At the request of the City Council, this report is specifically focused on OakDOT's responses to landslides (focused on those impacting public right-of-way), road closures, and potholes associated with the Winter Storm Event from December 31, 2022 - January 2023. As of the writing of this report, the winter storm season is still ongoing with persisting rain, high winds and adverse impacts on public infrastructure that city staff continue to respond to, while also recovering from a ransomware attack initiated on February 8, 2023 that triggered another activation of the City Emergency Operations Center. Additional infrastructure damages related to flooding, landslides not in the public right-of-way, and severe winds and fallen trees have occurred that are not detailed in this report but are being actively monitored by OPW and OakDOT for follow up repairs and in some cases potential FEMA reimbursement.

ANALYSIS AND POLICY ALTERNATIVES

The following sections summarize the OakDOT response to the Winter Storm Event related to landslides in the public right of way, road closures and potholes. The report discusses existing conditions and next steps by issue area, concluding with opportunities areas for increasing the City's response and resilience to extreme storm events which are predicted to persist and worsen as we face the consequences of climate change.

Landslides in the Public Right of Way: OakDOT's Great Streets Delivery Division provides engineering assessment and design services for issues affecting the City's right-of-way such as landslide restoration, sinkhole repair, stabilization of roads, construction of retaining walls, creekbank repair, and emergency repaving. The division works closely with maintenance staff, engineering divisions from other City departments, and other local agencies to coordinate response and minimize impact to residents. Many of the above-mentioned issues are caused by severe weather such as the heavy rainstorms experienced during the 2022/2023 winter season.

Since the start of the 2022/2023 rainy season, DOT Great Streets Delivery Division has responded to 29 requests for engineering assessment for storm-related issues. To date, OakDOT has identified six (6) storm damaged locations affecting the right-of-way requiring permanent repair:

- 10424 Golf Links Rd: Erosion of creekbank encroached upon roadway requiring single-lane closure
- 10249 Golf Links Rd: Erosion of roadway edge damaged guardrail
- 7845 Claremont Ave: Erosion of creekbank encroached upon roadway edge
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City staff are actively working with representatives from the California Office of Emergency Services (CalOES) and Federal Emergency Management Agency (FEMA) to seek reimbursement for all eligible costs associated with this season's winter storms under disaster declaration DR-4683-CA. Eligible reimbursement costs may include debris removal and emergency response as well as permanent repairs damage caused by landslides, flooding, mudslides, or other severe winter weather experienced between December 27, 2022 to January 31, 2023. Proposed repair locations will be presented to FEMA for reimbursement approval. OakDOT currently estimates that permanent repairs to the above locations will cost \$1.4M.

The Oakland Hills – with steep, wooded hillsides interspersed residential structures and winding roads – is an environment naturally susceptible to erosion and landslides. Over the years, new development has resulted in an increase in impervious surfaces in the area. Providing adequate storm drainage in steep terrain with increasing residential density concentrating stormwater flow is complex and challenging. The increase in stormwater flows due to development will be further compounded by the predicted increase in storm intensity due to climate change factors. These factors will exacerbate erosion and landslide conditions in the coming years. The above issues are in addition to one landslide location from the 2017-18 winter season that still requires permanent repair. A ruptured fire hydrant resulted in a landslide at 7126 Westmoreland Drive. Due to the cause of the landslide, this location was not eligible for state or federal reimbursement funding and will be funded with Measure B funds at an estimated cost of \$280,000. OakDOT anticipates advertising construction plans for permanent repair at this location during summer of 2023. Staffing vacancies, challenges with timely contracting, and competing emergency priorities including critical investments in paving and road safety are key constraints.

Road Closures: Storm-related debris and damage may impact Oakland's roadways in the form of landslides, flooding, downed trees, and erosion. Some blockages may be of short duration or limited extent while others may have a duration or magnitude that results in a road closure. OakDOT is the

designated department for tracking storm-related road closures and is responsible for clearing blockages created by landslides and erosion. OakDOT coordinates with OPW on road closures caused by flooding and downed trees – as well as with OPD, OFD and other agencies as part of the Emergency Operations Center.

Tracking road closures helps provide a coordinated City response to storms and provides a means for notifying the public of persistent road closures. OakDOT seeks to minimize road closures to minimize disruption to the public. Road closures are reserved for blockages where traffic cannot negotiate around a blockage or where a blockage causes traffic in opposite directions to come into conflict. For the January 2023 storms, road closures were posted at www.oaklandca.gov/resources/road-closures and noted in the City's storm-related public communications.

In the Winter Storm Event, eight road closures were tracked: six in the City's right-of-way, one in Caltrans right-of-way (State Route 77/185, commonly called 42nd Ave), and one on the property of the Oakland Zoo (Entrance Road). Three closures were caused by flooding, two by landslides, one by a downed tree, and two by erosion. The duration of the closures ranged from one day to the ongoing closure on Golf Links Road that began in early January.

The following list summarizes the eight road closures:

- Carrington St (42nd Ave to High St) was closed from 1/4/2023 to 1/5/2023 due to a downed tree.
- Golf Links Rd (Elysian Fields Dr to Scotia Ave) was closed on or around 1/4/23 and partially reopened on 1/7/23. The partial closure remains as of 3/17/23.
- Longcroft Dr (Chelsea Dr to 400' towards Haverhill Dr) was closed from 1/9/2023 to 1/24/2023 due to a landslide.
- Oakland Zoo Entry Road (Golf Links Rd to Zoo Entrance Station) was closed from 12/31/22 to 2/3/23 due to erosion that undermined the road.
- Shepherd Canyon Rd (Snake Rd to Escher Dr) was closed on 1/9/23 due to flooding and reopened the same day.
- St Andrews Rd (Sequoyah Rd to 200' from Sequoyah Rd) was closed on 1/16/23 due to a landslide and reopened by 1/31/23.
- State Route 77/185 (42nd Ave) (International Blvd to Coliseum Wy) was closed on 1/4/23 to 1/5/23 due to flooding.
- Webster St (34th St to 36th St) was closed around 1/3/23 to 1/7/23 due to flooding.

With respect to the Oakland Zoo Entry Road, overflow storm water caused erosion around a culvert, causing the culvert to fail and the roadway to collapse. The eroded area was 20 feet wide, 20 feet deep, and 65 feet in length. The entrance to the Zoo via Golf Links Road is not a public road, but is on City property as parkland. OPW was the lead for the repair of the storm drain and entrance roadway in coordination with the Zoo, and repairs were completed on February 2, 2023 at a cost of approximately \$600,000 that is now being pursued for FEMA Reimbursement.

With respect to the ongoing closure on Golf Links Road, the heavy rains of the Winter Storm Event eroded a section of creekbank along Arroyo Viejo Creek. This failure encroached on a section of roadway on Golf Links Road between Elysian Fields Drive and Scotia Drive. The loss of roadway edge stability resulted in the need to close the westbound traffic lane with temporary traffic control measures. The single lane closure remains in place. Additionally, temporary erosion prevention measures have been put in place to mitigate any further loss of soil. Plans for permanent repair of the creekbank and roadway are soon to be advertised for construction bidding. Due to the proximity to Arroyo Viejo Creek, the repair work will require permitting approval from the San Francisco Regional Water Quality Control

Board (RWQCB), United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW). These agencies have been notified of the City's intent to move forward with the creekbank and roadway repair at an estimated cost of \$390,000 and work estimated to begin in summer of 2023.

Potholes: Winter storms are known to damage asphalt and exacerbate existing potholes on city streets. Potholes are of particular public concern during the recent winter storm season.

Data from Cityworks, Oakland's data management system for [Oak311 requests for service related to the City's infrastructure](#) submitted online or via phone, shows that in January 2023 alone there were 369 requests related to potholes/roadway depressions – higher than requests from the previous three years (Jan. 2022=298 requests; Jan. 2021 = 157 requests; Jan. 2020=217 requests). The number of pothole related service requests were actually notably lower than the 543 pothole-related requests received in January 2019 - another year that started with a major atmospheric river event. These recent requests are in addition to the approximately 1,000 outstanding requests for pothole repair received via 311 in 2022. Please note that due to the recent ransomware attack, the above summarizes information prior to February 2023. Requests after February 8, 2023 continued to be recorded and routed to staff for emergency response as appropriate, and data will be entered into the city system when it is fully restored.

The City's response to these serious pothole concerns is a "Pothole Blitz" – focusing the resources and person-power of OakDOT's in-house paving teams on filling potholes and minor base repair efforts until at least May 1, 2023. Once the rain subsides enough to dry the asphalt and begin repair, OakDOT's in-house crews will pivot to filling potholes and away from clearing storm drains to prevent flooding and clearing roadways from landslide debris. OakDOT is hopeful that this work will be able to begin in April 2023, weather permitting. Potholes will be repaired based on locations reported to [Oak311](#) – either via the city webpage (<https://www.oaklandca.gov/services/oak311>) or by phone by calling 311 or 510-615-5566. A departmental goal is to significantly address a backlog of more severe pothole repair needs during this period. This will be a citywide effort, with initial repairs focused on potholes that are large, deep or cause vehicle damage based on factors reported in 311, and those on major streets and the city's bike network.

On May 1, 2023, OakDOT will assess the overall progress of pothole repair and determine whether to return to regularly scheduled paving and maintenance activities provided significant impacts have been made on potholes on prioritized locations. These emergency actions, while deemed necessary, will have associated impacts on the neighborhood paving targets for the year. City resources deployed for pothole repair will draw resources from the team that paves residential streets on the paving plans. OakDOT is nonetheless advancing this Pothole Blitz to address the near-term, more acute impacts of potholes on our streets related to the intensity of this winter storm season – including in low-income communities and communities of color, where aging infrastructure is more susceptible to storm damage. While OakDOT's In-house paving team engages in this focused near-term effort, capital paving efforts will continue to address planned pavement rehabilitation citywide via contractors, unless it is deemed that contracting efforts are needed to assist in the overall "Pothole Blitz."

In the long term, what is required to prevent potholes in the first place is maintaining a focus on an ambitious paving program, funded by Measure KK and Measure U, to continue to improve and maintain the pavement - and safety - conditions of our streets. The [Five-year Paving Plan \(5YP\)](#) proposes pavement rehabilitation and preventative maintenance treatments on more than 350 miles of Oakland streets. The majority of 5YP funding is dedicated to local streets while still keeping major streets in good condition, and local streets program funding is primarily prioritized by planning area,

weighing equity and street condition equally. Within each planning area, local streets are prioritized for pavement rehabilitation based on pavement condition, proximity to parks, and adjacent segments in poor condition. Two new categories of local streets are also included in the 5YP: local streets preventative maintenance and local streets neighborhood bike routes. These smaller programs ensure recently-paved local streets receive cost-effective treatments to maintain their good condition and that the City improves and maintains roadways that are either current or proposed neighborhood bike routes. In addition, the local streets program sets aside funding for City Council paving priorities and for utility cost-sharing opportunities as part of excavation projects.

Conclusion: The Winter Storm Event and ongoing storms continue to elevate the importance of coordinated, inter-agency efforts to address the needs of Oaklanders. For infrastructure emergencies, this work occurs daily through ongoing 24/7 x 365 emergency response facilitated by the Oak311 call center and OPW/OakDOT standby emergency crews as well as OFD and OPD dispatch, and in the case of more extreme events through the Emergency Operations Center. Climate change models predict that extreme weather conditions will continue to worsen – and therefore the City can anticipate more frequent emergency responses and more severe impacts of extreme weather. In this context – critical preventive efforts include: continuing to invest in paving to increase the quality of our streets while also implementing safety improvements; developing more nimble contracting mechanisms for predictable emergencies; implementing Oakland’s [Equitable Climate Action Plan \(ECAP\)](#); and filling staffing vacancies to ensure timely services to Oaklanders.

FISCAL IMPACT

This item is for informational purposes only and does not have fiscal impacts.

PUBLIC OUTREACH / INTEREST

Public outreach was a focus of the City’s Emergency Operations Center for the Winter Storms, and the Emergency Operations Center’s Communications Branch focused on informing residents how they can be prepared and report issues that need to be addressed, the City’s response to the winter storms, and impacts of winter storms road closures. More information regarding this public outreach and communications in response to the high level of interest is available at the links below.

<https://www.oaklandca.gov/topics/winter-storms>

<https://www.oaklandca.gov/news/2023/city-of-oakland-declares-a-local-state-of-emergency-and-continues-to-provide-resources-to-community-members-impacted-by-the-winter-storm>

COORDINATION

Coordination is core to the City’s Winter Storm Event response as it was coordinated through the City’s Emergency Operations Center to support cross-agency coordination with OakDOT, OPW, OPD, OFD, the City Administration and other agencies – as well as with regional partners including the Alameda County Public Health Department and Caltrans.

SUSTAINABLE OPPORTUNITIES

Economic: Coordinated, timely, effective City responses to infrastructure damage in the public right-of-way during winter storm and other emergencies, as well as proactive planning to prevent and to respond to such damage, has potential indirect economic impacts through ensuring transportation networks continue to function and support access to key community needs and services, including economic activity.

Environmental: As climate change results in environmental consequences including more severe storms and associated adverse impacts on public infrastructure, coordinated, inter-agency responses and preparedness are more critical than ever to adapt to this global threat.

Race & Equity: Communities of color and low-income communities have disproportionately poorer existing infrastructure conditions due to historic underinvestment and lack of prioritization for maintenance and improvements. These same communities are also more vulnerable to impacts of climate change including extreme weather events. Coordinated city responses to emergencies, emergency preparedness initiatives such as Community Emergency Response Team (CERT) training, developing climate resilience strategies as detailed in [Oakland's Equitable Climate Action Plan \(ECAP\)](#), and proactively investing city resources in priority equity communities where low-income residents and communities of color are concentrated – consistent with OakDOT's Paving Program – are all strategies to help address inequitable impacts.

ACTION REQUESTED OF THE CITY COUNCIL

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

For questions regarding this report, please contact Megan Wier, Assistant Director, at mwier@oakandca.gov.

Respectfully submitted,

Fred Kelley

Fred Kelley (Mar 29, 2023 14:35 PDT)

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