



San Francisco  
**Water Power Sewer**  
Services of the San Francisco Public Utilities Commission

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# **Stern Grove Emergency Repair Project**

**Budget and Finance Committee**

*April 20, 2022*

Steve Ritchie, Assistant General Manager for Water

Katie Miller, Director of Water Capital Programs

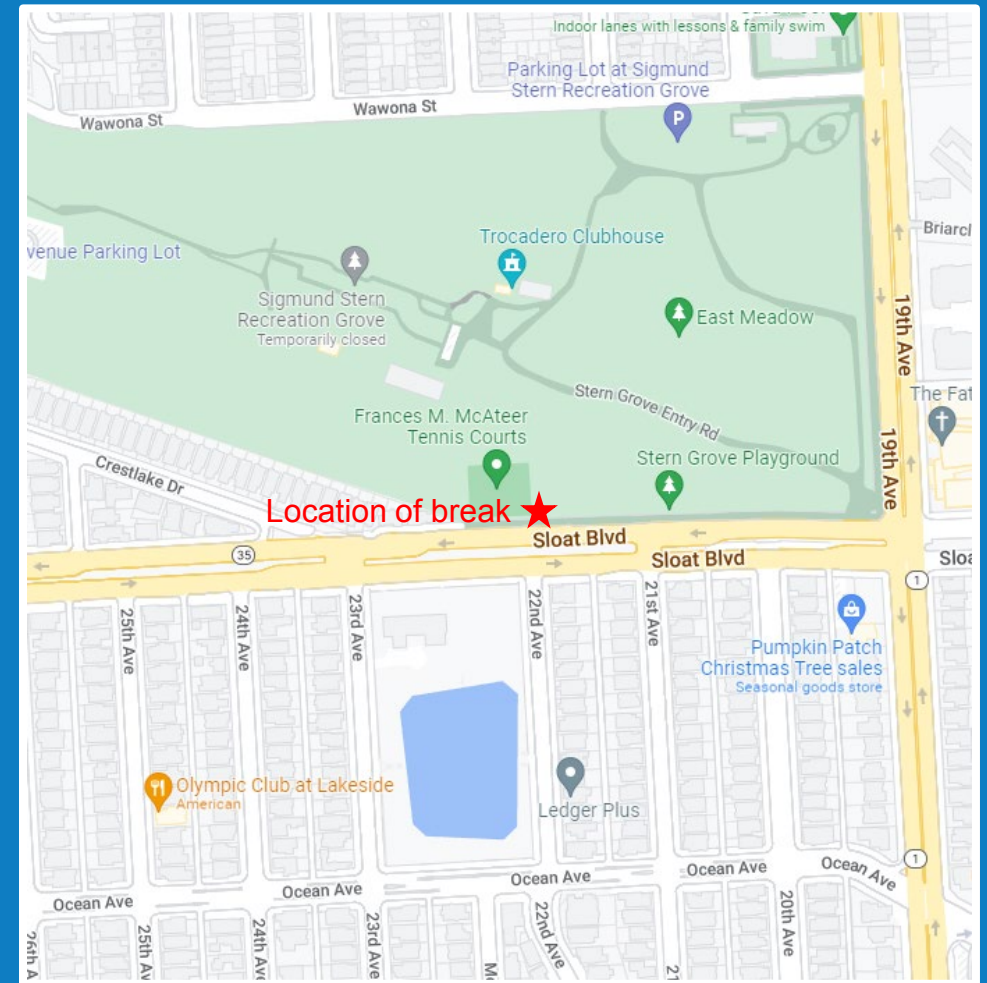
San Francisco Public Utilities Commission



# Stern Grove Emergency Repair

August 23, 2021

- During maintenance on a 54-inch diameter transmission pipeline on Sloat Boulevard at 22nd Avenue, an air release valve failed as it was being bolted down.
- As water began escaping, the pipeline was kept open while work crews re-routed water to other parts of the system; long enough to maintain water service to customers throughout western San Francisco.





# Stern Grove Emergency Repair Project

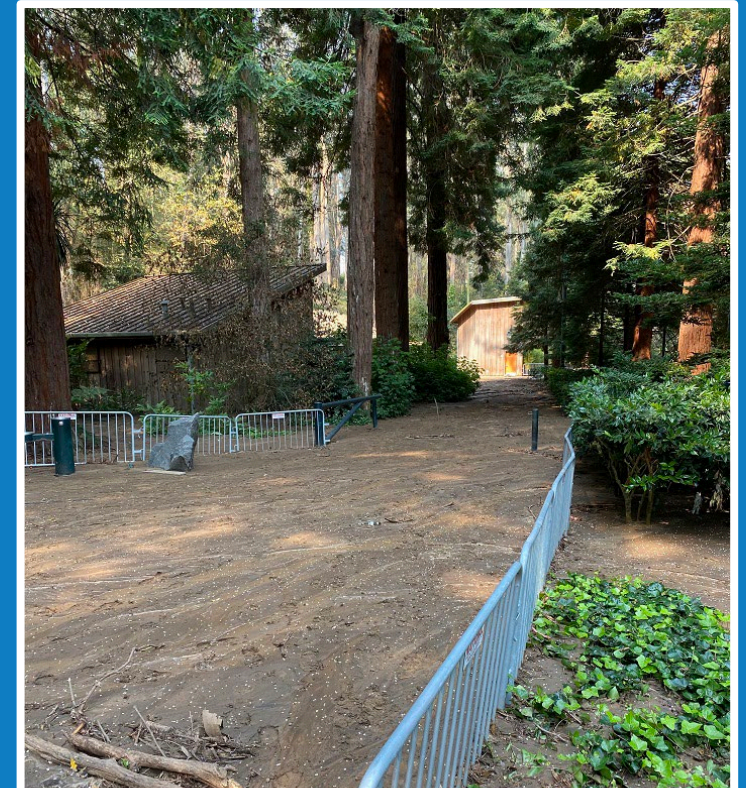
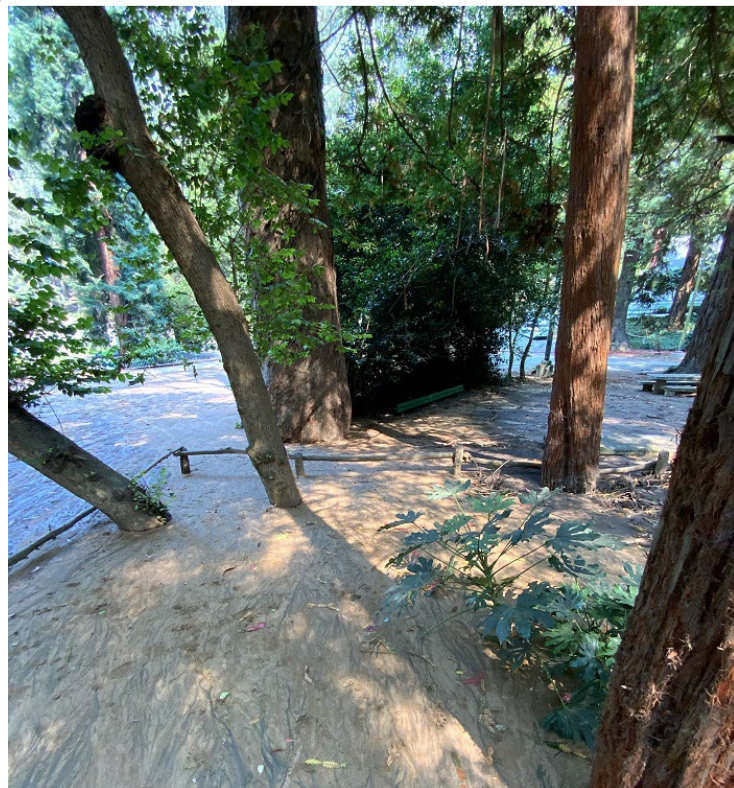
August 23, 2021

- Failure of the valve resulted in a significant outflow of water from the pipeline, heavily eroding the slope leading down to Stern Grove.
- The high volume of water that escaped prior to shut down damaged the tennis courts on Sloat and eroded the slope at Stern Grove, carrying water and mud into festival buildings and meadow areas in the park.





# Stern Grove Emergency Repair Project



Water eroded a portion of the hillside below the tennis courts and damaged some of the festival's ancillary buildings; mud and debris was deposited into the Concert Meadow, parking lot, West Meadow, and areas along the path up to Pine Lake Area.



## Initial Assessment

- Our preliminary inspection of the damage pointed to an immediate need to stabilize the hillside and clear mud and debris in the park.
- Initially, the full extent of repairs needed to a variety of Stern Grove facilities was uncertain, and not included in our assessment.





## Remediation – Early Phase

- Removal of 63 large eucalyptus trees.
- Site investigation and engineering of the slope.
- Removal and salvaging of historical rock walls.
- Removal of mud and debris and power washing of ancillary buildings.





## A Full Assessment

During initial remediation, we uncovered more damage than was initially visible in the wake of the incident, requiring extensive additional work.

- Rebuilding slope and structural retaining walls to mitigate against future erosion.
- Protecting the existing large diameter sewer line within the footprint of the impacted slope.
- Restoration of Concert and West Meadow turfgrass.





## A Full Assessment

- Moisture and mold abatements for ancillary buildings.
- Replacement of exterior and interior furnishings.
- Replanting of eucalyptus trees within the impacted slope.
- Restoration of the Vale Street parking lot and tennis courts.







# Stern Grove Emergency Repair Project

## Stern Grove Festival

- Once the full extent of required remediation was identified, we developed a plan that included ensuring the Stern Grove Festival could take place.





## The Cost of Repairs

- The SFPUC is committed to restoring Stern Grove and all its amenities, working closely with the Stern Grove Festival and Recreation & Parks Department.
- The initial cost estimate of \$4 million was made within 48 hours of the emergency before the impact of the incident could be fully understood.
- After a complete review of all required repairs, the final cost was budgeted at approximately \$20 million.



# Stern Grove Emergency Repair Project

## Estimated Project Expenditures

Initial Site Cleanup	\$ 1,367,000
Tree Removal	\$ 1,133,000
Building and Flood Cleanup and Investigation	\$ 250,000
Salvaging Historical Rock Wall	\$ 219,000
<b>Total</b>	<b>\$ 2,969,000</b>

## Estimated Remaining Costs based on contractor cost proposals as of 3/30/22

Meadow Restoration	\$ 314,000
Building Restoration	\$ 1,067,000
Slope Restoration	\$ 4,436,000
Drainage System and Retaining Walls	\$ 2,530,000
Shoring System to Protect Existing Sewer	\$ 2,957,000
Landscaping and Tree Planting	\$ 673,000
Site Restoration and Final Cleanup	\$ 1,947,000
Contingency for Remaining Work (22%)	\$ 3,107,000
<b>Total</b>	<b>\$ 17,031,000</b>
<b>Overall Estimated Project Costs</b>	<b>\$ 20,000,000</b>



## Work Timeline

- Initial restoration work began immediately and continued through the winter of 2021-2022.
- We will sequence the remaining restoration work to ensure that the 2022 concert season begins on time.
- Restoration of the tennis courts is expected at the end of 2022.
- Restoration of the hillside will be completed in 2023.
- Our anticipated timeline for completion of all work is Summer 2023.





# Stern Grove Emergency Repair Project

Questions?

