

# UPDATE ON STORM-RELATED EMERGENCY RESPONSE

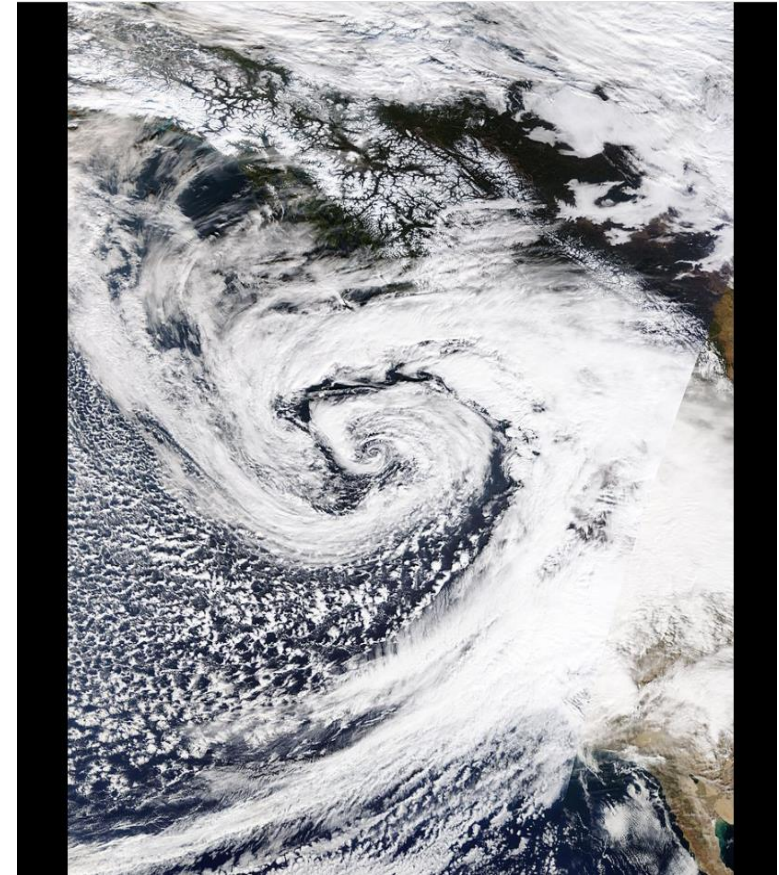
Stockton City Council Meeting

December 14, 2021

Agenda Item 15.1

# Background

- Wednesday, October 20: Weather forecast predicted a series of storms to impact Northern California beginning on Thursday, October 21
- Thursday, October 21: Cal OES provided a Weather Threat Briefing
  - “Atmospheric River” predicted Saturday & Sunday (October 23 & 24)
  - Storm track to be north of the San Joaquin Valley
  - 4-day event to produce 2-3” of rain in the Stockton area
- Sunday, October 24, 10am: Rainfall total of .56”
- Sunday, October 24, 8pm: Rainfall total of 2.37” (.63” between 7pm-8pm)
- Monday, October 25, 7am: Rainfall total of 4.40”

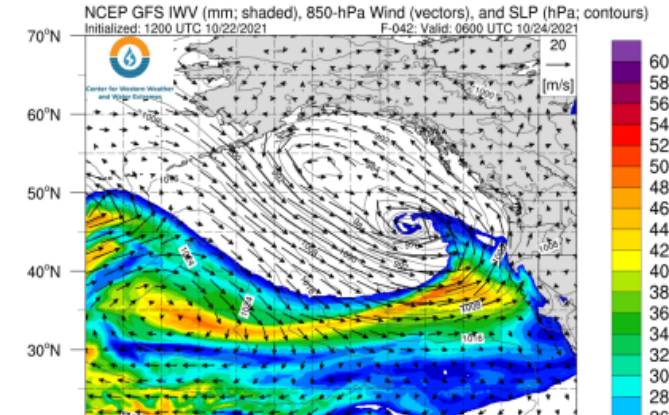
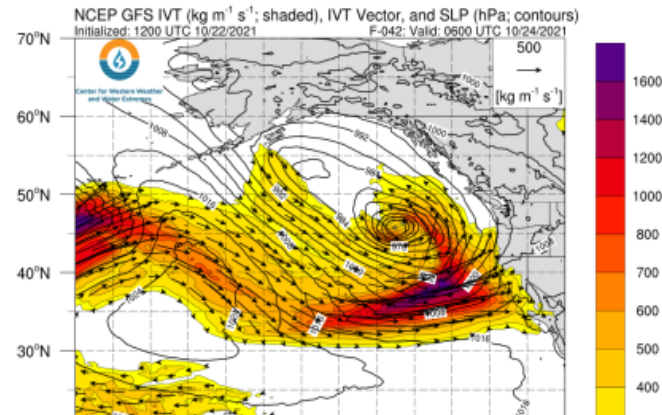


# Background

## CW3E Atmospheric River Outlook

### As atmospheric river conditions begin to dissipate from the current AR, focus turns to extreme AR over Weekend

- AR conditions associated with the current AR bringing precipitation to California are forecast to end in the late morning and early afternoon
- A much stronger AR is forecast to make landfall over California Saturday night
- Models continue to forecast AR 5 conditions over the San Francisco Bay Area with AR 3 to 4 over a majority of the North and Central CA Coast
- The California-Nevada River Forecast Center (CNRFC) is forecasting as much as 13 inches of precipitation to fall across the high-elevations in the Northern Sierra
- While soils are currently dry due to extensive drought, the National Weather Service has issued numerous flash flood and flood watches due to the potential for high rain rates and post-fire debris flows





# Emergency Preparedness

- Thursday, October 21: Emergency Preparedness Meeting with CMO, PD, FD, MUD and PWs.
  - Review MUD Storm Event Response Procedure and contact info.
  - Social Media & Public Information: impending storm, how to report clogged storm drains, local street flooding, fallen trees, and power outages.
- Friday, October 22: County OES Briefing & City Emergency Preparedness Meeting with CMO, PD, FD, MUD, and PWs.
  - County OES Storm Modeling discussed: Minor street flooding and pooling in low-level areas. Waterways can absorb large amounts of water due to current drought.
  - City discussed vulnerable populations along low-level waterway and activated the HOT Team to Mormon Slough, Calaveras River, and Diverting Canal for notifications.
  - Community Shelters prepared for use as Emergency Shelters.
- Saturday, October 23: Updated Storm Modeling
  - New storm modeling predicts storm to pass north of Stockton with heaviest rain mid-afternoon on Sunday with an estimate of 2.5" of rain in 24-hour period.
  - Preparedness and Intelligence shared via email to CMO, PD, FD, MUD and PWs.
  - Additional crews, staff, and equipment in Public Works, MUD, Fire, and Police placed on standby.
- Sunday, October 24: Preparedness and Intelligence updates shared via email to CMO, PD, FD, MUD and PWs at 10 am, 2 pm, 9 pm, & 7 am on October 25.

# Local Storm Event Total and Impact



Storm Update: Do not drive through flooded intersections, streets, or underpasses. Report local street flooding: 209-937-8341.



- October 24 and 25: City experienced historic early-season storm with record rainfall.
- Extremely powerful Extratropical Cyclone struck the Western United States and Canada.
- Cyclone tapped into a large atmospheric river and underwent explosive intensification, becoming the most powerful bomb cyclone recorded in the Northeast Pacific on Sunday, October 24.
- Deposited 3.5-4" of rainfall in Stockton over 24 hours, and over 7,600,000,000,000 gallons statewide.
  - Last time rainfall of that amount fell in Northern California was 1880 – and never in October.

# Storm Metrics for Public Works

- 59 Tree Limb Calls for Service
- 20 Tree Down Calls for Service
- 252 Flood Locations Dispatched to Municipal Utilities
- 2 Intersections Re-wired
- 3 Leaks at City Buildings
  - PD Dispatch Center, Teen Center & City Hall

# Overall Situation Status for PD

- As of 10/25/21 at 0800 hours, there were **72** reported traffic accidents and **13** hit-and-run collisions for the last 24 hours (**85** total traffic-related incidents). Of note, a random day comparison equates to about 40 traffic accidents and 12 hit-and-run collisions.
- As of 10/25/21 at 0800 hours, in the last 24 hours, dispatch saw an increase in calls-for-service, **2,259** compared to **1,577** in 2020. There were approximately **324** total storm-related calls for service.
- On the evening of 10/24/21, the Dispatch Center experienced a serious leak and a ceiling tile fell through. CBM has been notified for the repair.



# City's Stormwater System Design and Capacity

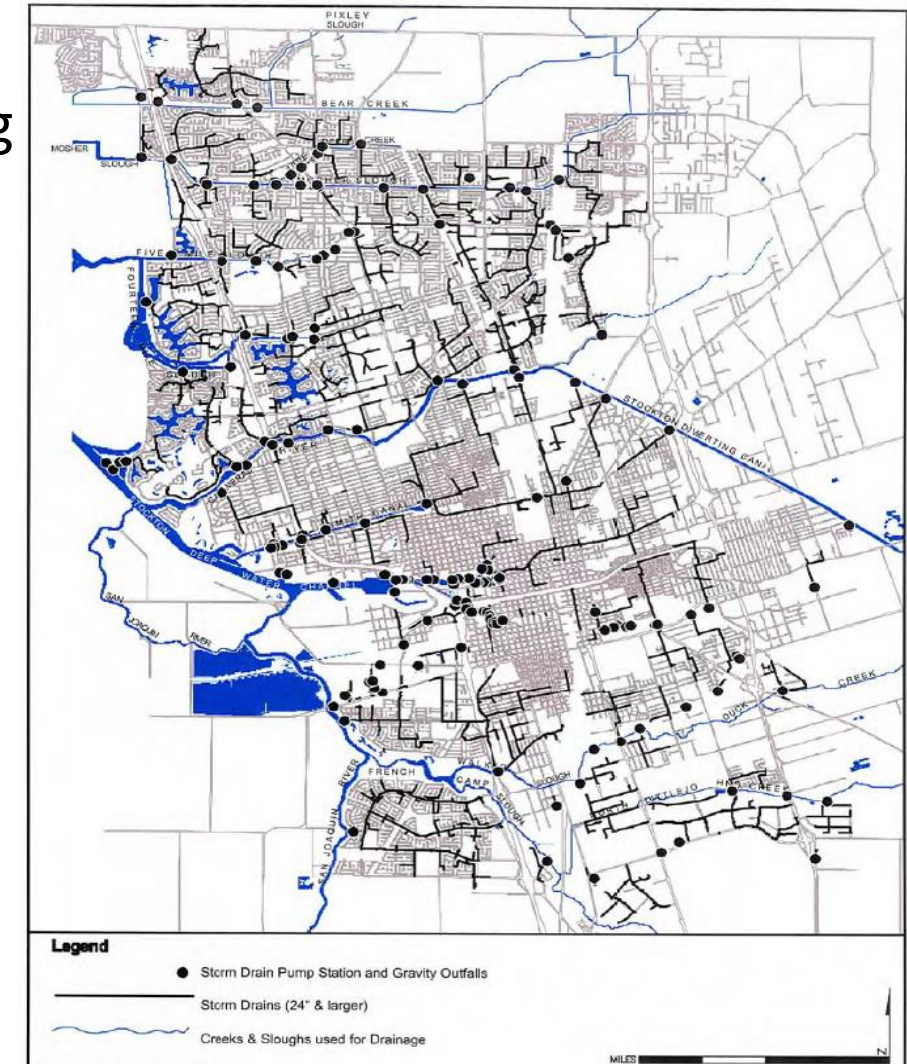
- Regulated by NPDES and MS4 Permits jointly between the City and San Joaquin County.
- Stormwater System consists of 74 pump stations, over 600 miles of pipeline, and 22,500 drain inlets.
- System routes stormwater from city streets into local basins, canals, and waterways.
- System designed to handle 1.0 to 1.5 inches of rainfall over a 24-hour period or 1 in 10-year storm event.
- October Storm rainfall intensity surpassed 1 in 200-year storm event.
- Event overwhelmed the City's stormwater collection systems.
  - All stormwater pump stations operated during the event
  - High flows surcharged stormwater catch basins and pipelines
  - Impacting streets, underpasses and some neighborhoods
  - System was not designed for this flow regardless of whether all the storm drains were clear
- All MUD, PWS, PD and Fire staff operated under storm response and were dispatched Citywide.
- Calls & locations were triaged where the major intersections were addressed with priority.





# Stormwater System Maintenance

- Regular system maintenance necessary to prevent flooding from storm runoff.
- Stormwater Utility Fund is severely under-funded, maintenance and repairs are limited under the annual program.
- Annual maintenance program includes pump station & pipeline maintenance and catch basin cleaning.
  - Areas with the highest priority
  - Areas where rainwater frequently accumulates
  - Areas that are problematic
  - Field crews inspected about 4,000 catch basins last year



# Stormwater Utility Funding

- Stormwater Utility Fund has been under-funded for many years.
- Stormwater Utility is funded by an assessment fee (\$2.10/month) implemented in 1992.
- City proposed a new Clean Water fee in 2010 based on Department Strategic Work Plan.
- Followed California Proposition 218 process to supplement current stormwater fee.
- 2010 Rate study for the proposed fee increased found Stormwater Utility was under-funded by approx. \$9 million a year.
- Fee was not approved by the voters.

Table 3. 2019-2020 Fiscal Analysis, City of Stockton

Program Element	Expenditures During Fiscal Year 2019-2020	Estimated Budget for Fiscal Year 2020-2021 <sup>[a]</sup>
<b>Program Management:</b> Staff salaries, utility billing, phone charges, computer software/rentals, memberships, permit fees, indirect cost allocations, training, consultant contracts	\$1,689,694	\$1,932,566
<b>Public Outreach:</b> Staff salaries, industrial, commercial, and residential programs, including media and community events	\$2,231	\$9,000
<b>Municipal Operations:</b> Staff salaries, Capital Improvement Projects (CIPs), and Storm Drain System Cleaning and Maintenance (includes Illicit Discharges, illegal connections mitigation, and clean-up) <sup>[b]</sup>	\$3,726,539 <sup>[c]</sup>	\$3,142,734
<b>Industrial and Commercial:</b> Staff salaries, inspections, and follow-up inspections <sup>[d]</sup>	\$43,211	\$36,911
<b>Construction:</b> Staff salaries, outreach	\$6,300	\$0 <sup>[e]</sup>
<b>Planning and Land Development:</b> Staff salaries	\$43,142	\$0 <sup>[e]</sup>
<b>Water Quality Monitoring Programs:</b> Includes Baseline Monitoring Program, Bioassessment Analysis, Smith Canal Bathymetry Study, Detention Basin Monitoring, BMP Effectiveness Study, Sediment Toxicity, Smith Canal/Mosher Slough Low DO13267 Letter Monitoring	\$397,123	\$510,038
<b>Water Quality Based Programs:</b> Includes Pesticide, Pathogen, Mercury, and DO Work Plans and Implementation	\$100,510	\$133,051
<b>TOTAL</b>	<b>\$ 6,008,750</b>	<b>\$ 5,764,290</b>

[a] Annually, the City compartmentalizes the overall budget into individual Program Element expenditures. The City has developed and is implementing a consistent methodology for tracking stormwater program expenditures.

[b] Facility Pollution Prevention Plans (FPPPs) are paid for out of Public Works budget and are not a Stormwater Expense.

[c] As the City enhanced the consistency of its operations, CIP costs were incorporated into the Municipal Operations budget.

[d] The Industrial and Commercial Inspection Program is conducted in-house by Stormwater and Environmental Control Staff.

[e] The costs for the Construction and Planning and Land Development Programs are accounted for under Program Management.

The City's stormwater program is funded primarily by a storm drain maintenance or user fee. The fee/equivalent residential unit is \$2.10/month per Equivalent Residential Unit.



# Need for New Stormwater Utility Rate Adjustment

City of Stockton, CA  
@StocktonUpdates



Report clogged storm drains, local street flooding, fallen trees, and outages of street lights and signals.  
City of Stockton Municipal Service Center: (209) 937-8341.



- Possibility of a new rate adjustment to provide needed funding for this Utility is currently under review.
- New Stormwater Master Plan complete in FY 2021-22. Expected Council approval in May 2022.
- Plan includes new hydraulic models to improve design, capability of existing stormwater facilities, new infrastructure proposed by future development and CIP/Finance Plan.
- Plan supports General Plan Update for 2040.
- Plan included in new Stormwater Utility rate study analysis and Proposition 218 assessment effort.
- New Fee supplements current funding for the Stormwater Utility to provide stormwater collection system improvements citywide.

QUESTIONS?



# ADDITIONAL INFORMATION

# Additional Photos and Pictures

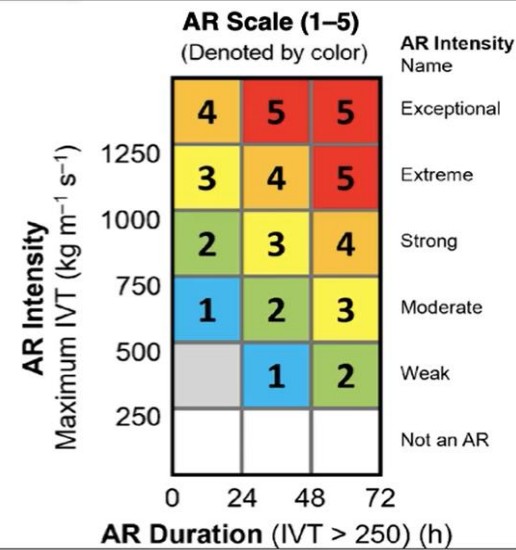
## CW3E AR Scale

<http://cw3e.ucsd.edu/arscale>



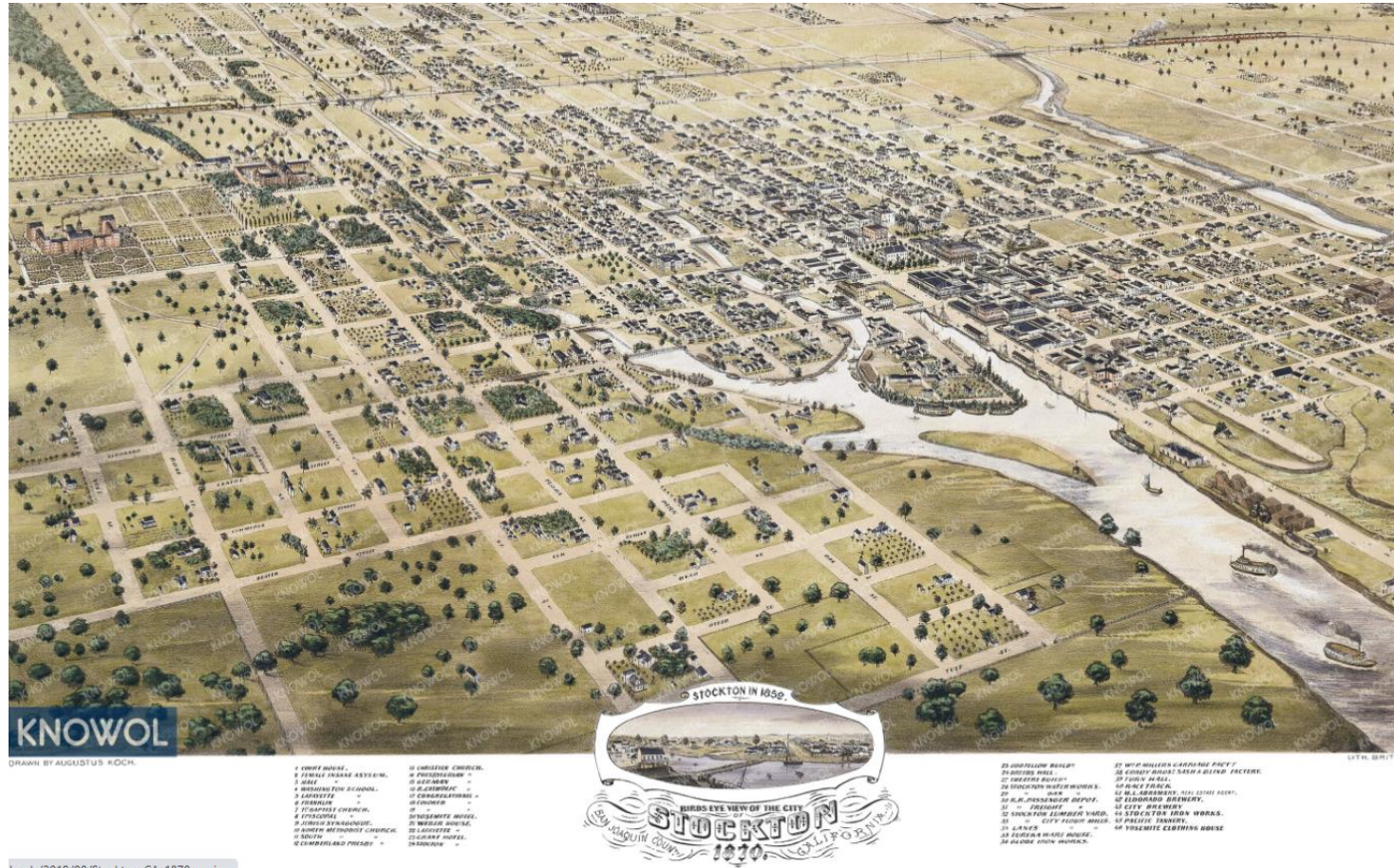
### CW3E AR Scale

- Described by Ralph et al. (2019; Bulletin of the American Meteorological Society)
- Combines AR intensity and duration:
  - Intensity: event maximum integrated vapor transport (IVT) magnitude
  - Duration: hours with IVT magnitude >250 kg/ms (i.e., AR conditions)



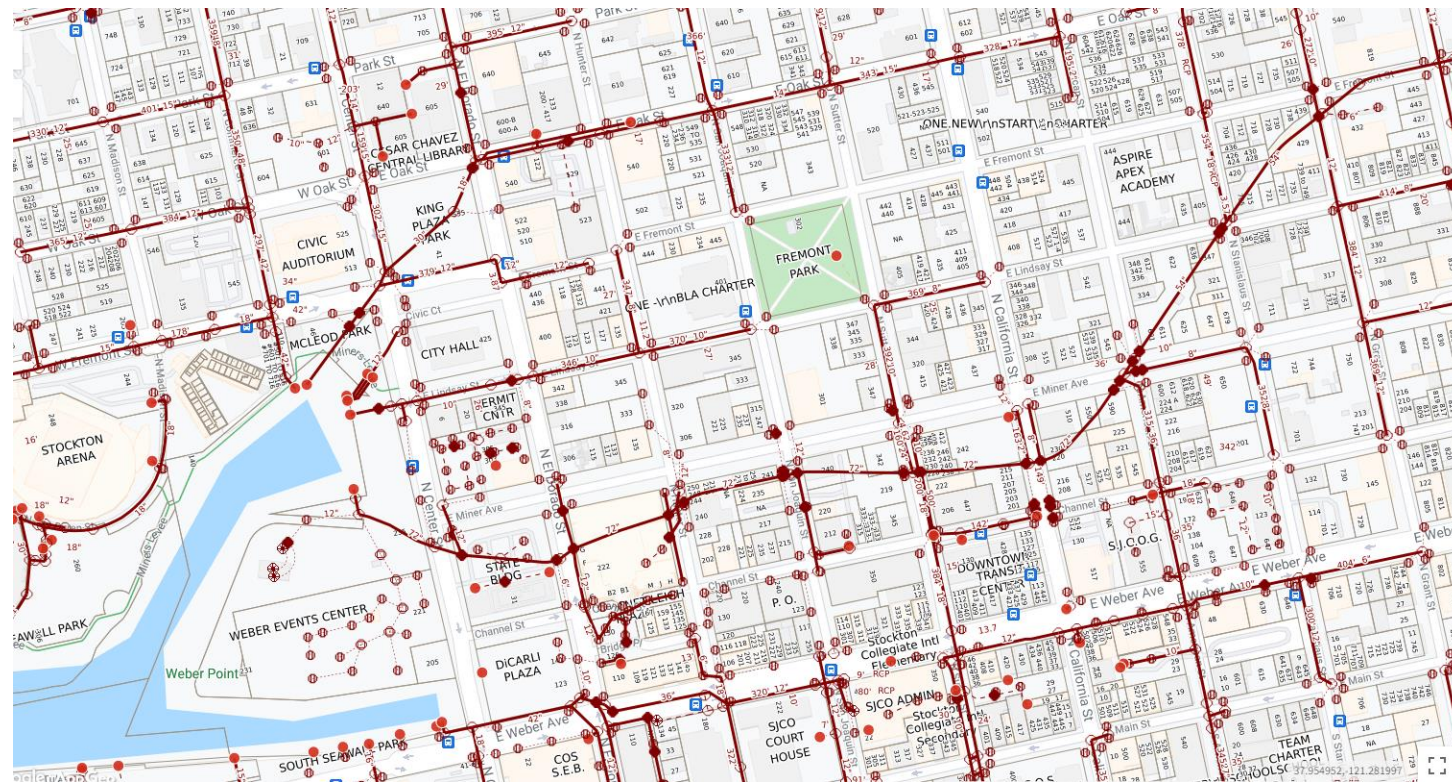
- AR 5 – Primarily hazardous
- AR 4 – Mostly hazardous, also beneficial
- AR 3 – Balance of beneficial and hazardous
- AR 2 – Mostly beneficial, also hazardous
- AR 1 – Primarily beneficial

## Additional Photos and Pictures



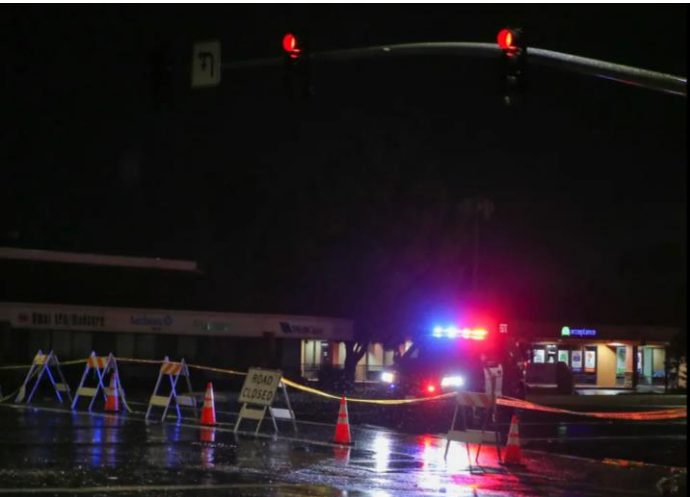


# Additional Photos and Pictures





# Additional Photos and Pictures





# Additional Photos and Pictures



# Storm Event Response Team Report

## Friday, October 22, 4:03 PM

### Storm Duration:

**Rain** – Intense rainfall is anticipated to start Saturday evening through early Tuesday morning, with cumulative totals between 2 to 3 inches.

**Wind** – Sustained winds of approx. 25 mph are anticipated on Sunday.

**General Impact** – This storm is categorized as having a “Moderate to Severe” impact to our region.

### **Risk Mitigation**

- **Unsheltered Population** – Fire & PD activated HOT Team to provide outreach, warning our vulnerable population of the impending storm. Unsheltered individuals to seek available shelters, particularly those located in and along the Mormon Slough and Calaveras River. This outreach effort is underway.
- **Localized Flooding** – Temporary localized flooding is anticipated. The Municipal Utilities Department has staffing to provide necessary assistance to clear storm drains and maintenance of pump stations. The Public Works Department is available to assist with road detours.
- **Down Trees and Branches** – Some trees and branches may come down. The Public Works Department is ready for storm duty. We may also utilize our emergency on-call tree services contractor, West Coast Arborists, as needed.

# Storm Event Response Team Report

## Saturday, October 23, 12:39 PM

### Storm Duration:

**Rain** – Intense rainfall is anticipated to start early Sunday morning through Monday afternoon, with cumulative totals approximating 2 to 3 inches.

**Wind** – Sustained winds of approximately 25mph are anticipated Sunday, with gusts up to 40mph.

**General Impact** – This storm is categorized as having a “Moderate to Severe” impact to our region.

### **Risk Mitigation**

- **Unsheltered Population** – Yesterday, the HOT Team completed storm warning outreach among our unsheltered population, particularly those located in the Mormon Slough and Calaveras River areas.
- **Localized Roadway Flooding** – Temporary localized flooding is anticipated. The Municipal Utilities Department has crews ready to provide necessary assistance to clear storm drains and support pump stations. The Public Works Department is available to assist with road detours.
- **Down Trees and Branches** – Downed trees and branches are anticipated. The Public Works Department is ready for storm duty. We may also utilize our emergency on-call tree services contractor, West Coast Arborists, as needed.



# Storm Event Response Team Report

## Sunday, October 24, 2:35 PM

### Storm Duration:

**Power Outages** – There have been a few minor power outages across the City, affecting a few hundred homes.

**Localized Roadway Flooding** – Minimal impact at this time.

**Pump Stations** – A mechanic is on-site at a north Stockton pump station making repairs. The Municipal Utilities Department has an alternate setup for pumping, if needed.

**Down Trees and Branches** – Minimal impact at this time. We've only had a handful of tree calls for service.

# Storm Event Response Team Report

## Sunday, October 24, 9:12 PM

### Storm Duration:

We are expecting another 1.25 inches of rain overnight. We have received over 2-inches of rain in the past 12 hours, with 0.6-inches in just the past hour.

### **Impacts**

- **Fire & Police Emergency Operations** – The Fire and Police Departments have been kept busy with increased vehicle accidents and public assist calls related to the weather.
- **Power Outages** – PG&E lists three outages within Stockton limits, impacting approximately 150 homes.
- **Localized Roadway Flooding** – The Police and Public Works Departments are prioritizing partial road closures at various locations citywide, particularly March Ln/Quail Lakes Dr, Hammer Ln/Interstate 5, and Center St/Harding Ave.

**Stormwater Systems** – Stormwater systems, including pump stations are operational, but are surcharged. They are having difficulty keeping up with the rain intensity. The Municipal Utilities Department has every Vactor truck running, triaging locations accordingly. Public Works has multiple crews assisting clearing inlets, where feasible. We have approximately 50 locations for service pending.

### **Sanitary Sewer** - Category 1 Overflow Notification

Time: 10:23 PM

Type: Sanitary sewer main line

Location: Hammer Lane at UPRR Subway

Cause: Hydraulic overload due to heavy rainfall

**Down Trees and Branches** – Public Works has had over a dozen calls for service today. Crews are on-duty for these calls.

# Storm Event Response Team Report

## Monday, October 25, 7:14 AM

### Storm Duration:

The brunt of the storm has passed with less than .25 inches expected through 5 pm today. In the past 6 hours, we have received .88-inches of rain, and in the **past 24 hours a total of 4.4-inches.**

### **IMPACTS**

**Road Closures** – We have major roadways still closed this morning. Avoid driving through these areas. **Hammer Lane, both directions is particularly in poor condition.** We have a reported sewer backup at this location adding to the challenges. Crews are assessing conditions at locations below and adjusting traffic control, as necessary.

#### **Closed Underpasses:**

Wilson Way and Anderson Street  
Bianchi Road at El Dorado Street  
Hammer Ln at Tam O'Shanter Drive  
Hammer Ln at Lorraine Avenue  
March Ln at Fred Russo Drive  
March Ln at Holiday Drive

#### **Full/Partial Closures:**

Eight Mile at Trinity Parkway	Trinity Parkway at Wal-Mart
Pacific Ave at Ben Holt Dr	Davis Rd at Thornton Rd
Pershing Ave at Rosemarie Ln	March Ln at Claremont Ave (westbound)
El Dorado St at Harding Wy	Thornton Rd at Hammer Ln
Mendocino at Manchester	Mendocino at Pershing Ave
Miner Ave at Wilson Wy	

**Emergency Operations** – The Fire Department assisted a non-ambulatory, unsheltered homeless person from beneath the bridge at Lower Sacramento and Mosher Slough due to rising water. The person was uninjured and did not need further assistance. After sunrise this morning, fire companies will check in with unsheltered homeless along the Calaveras River and the Mormon Slough.

**Power Outages** – There are two minor power outages within the City affecting less than 100 homes.

# Storm Event Response Team Report

## Monday, October 25, 3:42 PM

### **Storm Duration:**

The forecast shows a return to below-normal precipitation for the next couple of weeks.

**Road Closures** – We have 20 roadways back open. We do have some full closures and partial closures remaining. Hammer Lane continues to be a priority for crews. Hammer Lane posted publicly to give the public advance warning of the continued closure.

**Five Mile Creek** – Friends of Five Mile Creek community are concerned with high water, combined with the lack of flow in the waterway.

- San Joaquin County reports in anticipation of this storm event they pro-actively: 1.) adjusted the weir, and 2.) changed their pump station to winter mode.
- City of Stockton reports that all pump stations are all operational. The Municipal Utilities Department verified this afternoon that the Alexandria Place culvert is free from blockages. Both agencies will continue to monitor this location.



# Storm Event Response Team Report

## Monday, October 25, 3:42 PM Cont.

### Storm Road Closures Update | 10/25/2021 3:30 p.m.

CLOSURE LOCATIONS		FULL	PARTIAL	WHAT LANES
Antonio Dr and San Miguel Av	Non-staff (barricade only) Closure	Closed		
Bianchi Rd and El Dorado St	Underpass closed	Closed MUD is working on it now		
Davis Rd and Thornton Rd	Street Closure	Open		
Eight Mile Rd At Trinity Parkway	Street Closure	Open		
El Camino Av and Colonial Dr	Non-staff (barricade only) Closure	Open		
El Dorado St at Harding Wy	Street Closure	Open		
Hammer Ln and Arguello Dr	Non-staff (barricade only) Closure	Open		
Hammer Ln and Tam O Shanter Dr	Underpass closed		Closed	West Bound
Hammer Ln between Lorraine Av and Holman Rd	Street Closure both directions	Closed MUD is working on it now		
Hammer Ln Frontage and El Camino Dr	Non-staff (barricade only) Closure	Open		
La Paz Av and Santa Maria Wy	Non-staff (barricade only) Closure	Closed		Both directions
Los Felis Ave (700 block)	Non-staff (barricade only) Closure	Closed		Both directions
March Ln and Fred Russo Dr	Underpass closed	Open		
March Ln and Holiday Dr	Underpass closed	Open		
March Ln and Quail Lakes Dr	Non-staff (barricade only) Closure	Open		
March Ln at Claremont Av W/B	Street Closure		Closed	#3 lane / west bound
Mendocino Av at Manchester Av	Street Closure	Open		
Mendocino Av at Pershing Av	Street Closure	Open		
Miner Av at RR Tracks	Non-staff (barricade only) Closure	Open		
Miner Av W/O Wilson Wy	Street Closure	Closed		
Navy Dr (2500 block)	Non-staff (barricade only) Closure	Closed		
Pacific Ave and Benjamin Holt Dr	Street Closure	Open		
Pershing Av and Monterey Av	Non-staff (barricade only) Closure	Open		
Pershing Av at Rosemarie Ln	Street Closure	Open		
San Carlos Wy and Don Boriga Wy	Non-staff (barricade only) Closure	Closed		
Segarini Wy and Colonial Dr	Non-staff (barricade only) Closure	Open		
Swain Rd and Montauban Av	Non-staff (barricade only) Closure	Open		
Thornton Rd at Hammer Ln	Street Closure	Open		
Trinity Pkwy at Wal-Mart	Street Closure	Open		
Wilson Way and Anderson St	Underpass closed	Open		
American St at Alpine	Non-staff (barricade only) Closure		Closed	West Bound #2