



**CITY OF CORONADO  
CITY MANAGER'S OFFICE  
M E M O R A N D U M**

TO: Honorable Mayor and Council  
FROM: Blair King, City Manager  
SUBJECT: Review of December 6, 2018 Storm Event  
DATE: December 18, 2018

---

**SUMMARY REVIEW OF DECEMBER 6, 2018 STORM EVENT**

On the evening of December 6, 2018, the City of Coronado experienced a short duration, high intensity storm event with heavy rain and flash flooding that produced street flooding, power outages, and water damage to City facilities/infrastructure, residences, and businesses.

**Time and Duration:** Heavy rain began at approximately 4:00 pm and tapered out at approximately 10:00 pm. Police and Fire began to receive event related calls for service at approximately 5:00 pm, which continued through midnight. Emergency Operations Center (EOC) activated at a level three (low-level) at 7:16 pm.

**Rain Totals:** 4 inches in a six-hour period including approximately 1 inch of rain within 15-minutes shortly after 5:00 pm. (Source: unofficial Golf Course weather station.)

**Power Outage:** City facilities including the Parker and Transbay Pump Stations and over 1,000 SDG&E Coronado customers were impacted. Power was fully restored by 8:46 am on December 7, 2018.

**Tidal Conditions:** high tide 9:10 pm (4.31ft).

**Calls for Service:** Police Department and Fire Department responded to 67 storm-related calls for service. Police Department received more than 20 disabled motorist calls for assistance.

**Resources Deployed:** Total: 57 City Employees

-Police Department:	22
-Fire Department:	12
-Public Services and Engineering:	14
-Golf Course:	6
-Recreation Facilities:	1
-Administrative Services (IT):	1
-City Manager	1

-Total manhours: 316.25 manhours at \$18,638.51 (overtime and direct storm related hours – Enclosure 4).

-Total equipment: Sandbags: 350 distributed; 2 generators (Transbay 15 hours / Parker 4 hours).

**Declaration of Local Emergency:** The City Manager, acting as City of Coronado Director of Emergency Services, issued a “Declaration of Local Emergency” to the San Diego County EOC at 12:03 am on December 7<sup>th</sup> and signed Resolution No. 8976 proclaiming the local emergency in writing pursuant to Coronado Municipal Code section 2.50.060(A)(1) later the same morning.

**Damage: Public Property:**

- John D. Spreckels Center inundated with 2 inches of water
- Golf Course maintenance facility flooded with approximately 2.5 feet of water
- Library water damage due to leaks – possibly some art damage
- Community Center water damage
- City Hall leaks, Police Departments leaks
- Bayshore Bikeway at Fiddler’s Cove undermined
- Sidewalk at Avenida del Sol cul-de-sac undermined
- Roadway pot holes and sink holes
- Pump station electrical equipment

Private Property: Unknown, Hotel del Coronado reported high value property damage.

**Recovery:** Snow Mountain, the Holiday Parade and Orange Avenue Open House were held on December 7<sup>th</sup> without disruption due to clean-up efforts of Public Services team.

The City Manager’s office is in the process of working with the City’s insurance carrier to remediate all storm-related damage to City facilities and infrastructure. Damage to all pumping station electrical equipment has been repaired or replaced and all electrical systems are now fully operational. Extensive cleanup and remediation efforts continue at the John D. Spreckels Center and Bowling Green (time TBD). The current damage estimate to City facilities from the storm is approximately \$200,000.

- Enclosures:
- (1) Review of December 6, 2018 Storm Event
  - (2) City of Coronado Facility and Infrastructure Damage
  - (3) Storm Damage and Recovery Photos
  - (4) Summary of Man-hours and Personnel Cost

## REVIEW OF DECEMBER 6, 2018 STORM EVENT

### EVENT

The weather station at the Coronado Golf Course measured approximately 4 inches during a six-hour period on the evening of December 6, 2018. There were several periods where rainfall volume exceeded a rate of 3 inches per hour including a short period just after 5:00 pm where it was recorded that nearly an inch of rain fell in a 15-minute window. Although heavy rain was expected, and a flash flood warning was issued for Coronado, the amount and volume of precipitation was more than twice the projected amount forecasted by the National Weather Service.

The City's stormwater system is designed in accordance with established State and National standards. Coronado's topography and terrain, the extraordinary amount and high volume of rainfall in a short period of time following the storm earlier that week, combined with the SDG&E power failure, and a +4 high tide exceeded the City's stormwater drainage capacity.

### PREPARATION

Sand Bags: The Public Services and Engineering Department had over 750 sandbags pre-staged and available for residents at four locations prior to the storm, of which an estimated 350 sandbags were used during the storm event. The City provides full and ready to use sand bags and does not require residents to fill their own as is the common practice across San Diego County. The excessive flooding closed the 4th Street and Alameda Boulevard sand bag pick-up location at approximately 6:00 pm. (City Officials did not want to direct residents to an area where multiple vehicles had been abandoned in the flooded roadways.)

Storm Drain Cleaning: The Wastewater/Storm Water Division maintains a robust storm drain maintenance program. Storm drain inlets are inspected and serviced on a regular basis and monthly for high priority locations. Storm drain pipes are cleaned on a set schedule, annually.

### INITIAL RESPONSE

Coronado Emergency Services: Initial storm-related assistance calls to the Coronado Police Department started at approximately 5:00 pm and continued through midnight. Overall, the CPD and Fire Department reacted to 67 storm-related calls for flooding, closing of road intersections, motorist assistance, hazardous conditions, pump station and security alarms, and possible fires.

The CPD received more than 20 disabled motorist calls for assistance across the city. Most roads and intersections with flooding and high running water were either closed or marked as a flooded by the Public Services and Engineering Department by 6:00 pm. Despite efforts to mark and close roads, numerous motorists still drove through the flooded areas and became stranded. There were eight motorist who drove through the Five Points intersection after it was barricaded and marked, became stranded in high water, and had to abandon their vehicles. All vehicles that were stranded in flooded areas were removed by early morning.

Emergency Operations Center: The Coronado Emergency Operations Center (EOC) was activated at 7:16 pm to coordinate emergency response activities. At 12:03 am on December 7<sup>th</sup>, the City Manager, acting as Director of Emergency Services, issued a “Declaration of Local Emergency” to the San Diego County EOC due to the large amount of flooding across the City. The “Declaration of Local Emergency” is a prerequisite for requesting a California state of emergency proclamation in addition to allowing the governing body of a city to establish additional powers required to protect life and property and activate pre-established local emergency provisions such as special purchasing and contracting. At approximately 10:30 am on December 7<sup>th</sup>, the Director of Emergency Services signed Resolution No. 8976 proclaiming the local emergency in writing pursuant to Coronado Municipal Code section 2.50.060(A)(1)

Public Services and Engineering:

Personnel from Wastewater/Stormwater and the Streets and Facilities Division personnel were held over or recalled to respond to street flooding, pumping station issues, and water intrusion at City facilities. Personnel from the Streets and Facilities Division worked to identify flooded streets, set-up signage, and barricades while Wastewater/Stormwater Division personnel responded to pumping station alarms. Public Services and Engineering Department has one supervisor and eight employees in the Wastewater/Storm Water Division. Of these personnel, all senior personnel (5) were onsite throughout the late afternoon, night and into Friday morning. The City’s electrician was out of the country on leave and a contract electrician, Dr. Electric, familiar with the City’s equipment, was called in to provide support. The other three City Wastewater/Stormwater employees reported in early, 5:00 am, Friday morning, December 7<sup>th</sup>, to take-over pump station operations and critical storm sewer cleanup operations. Other Public Services and Engineering Department personnel worked throughout the City on cleaning up and preparing for the City’s Holiday Open House on Friday, and into Saturday, December 8<sup>th</sup>, monitoring and manually operating the Transbay Pump Station until it was repaired.

Pumping Stations: The primary storm water pump station (Parker PS) and the Transbay PS (Wastewater) were impacted by storm-related power outages, flooding and a large amount of rainwater intrusion into electrical conduits damaged critical electrical components (main circuit breaker at Parker PS, programmable logic controller (PLC) at Transbay PS). This damage resulted in the pumps temporarily going offline. Both pump stations affected by the power outages had on-site backup generators on site. The Transbay PS generator has an automatic transfer switch and generator power was servicing the station within a minute of the outage. The Parker PS generator must be manually connected (400 lb cables), started and switched into the station. This generator was online within 90 minutes of the outage. Both generators had ample power to handle their respective pump station electrical loads until San Diego Gas and Electric restored power.

During the event, the Bandel PS at 10th Street and Alameda Boulevard pumps could not keep up with the storm water volume for approximately 90 minutes during the height of the storm. Simultaneously, alarms were received from four other City, wastewater pump stations: Trinidad, Golf Course Club House, Pine Street and Glorietta Bay. The Parker Pump Station, the main stormwater pumping station for the City, remained partially operable, but the damaged circuit breaker could only handle enough electrical load to run the smaller of the three pumps. The City’s contracted electrician was able to source a new

circuit breaker (a \$10,000 piece of equipment in Vista, CA) and had the Parker Pump Station back on-line by 1:40 am on December 7th. All pumps are now fully operational.

### IMPACT AND DAMAGE

Flooding: Due to the intensity and volume of rain, all streets in the City were impacted by standing water that made for hazardous driving conditions. There were numerous neighborhood streets and intersections that had standing water ranging from 12 inches to as high as 3 feet. Water level in several neighborhoods and along the Orange Avenue Business Corridor was high enough to go over the curb and enter residences and businesses. The CPD and Public Services and Engineering Department had all hazardous flooding areas marked or barricaded by 6:00 pm. CPD coordinated with Naval Station Coronado on the closure of main gate and the rerouting of traffic due to the flooding at 4th Street and Alameda Boulevard.

Figure 1. below depicts the areas of Coronado that were severely impacted by storm-related flooding. These include the Country Club area, Orange Avenue Business Corridor, Ferry Landing along 1st Street, Five Points intersection, and 6th Street and Pomona Avenue.

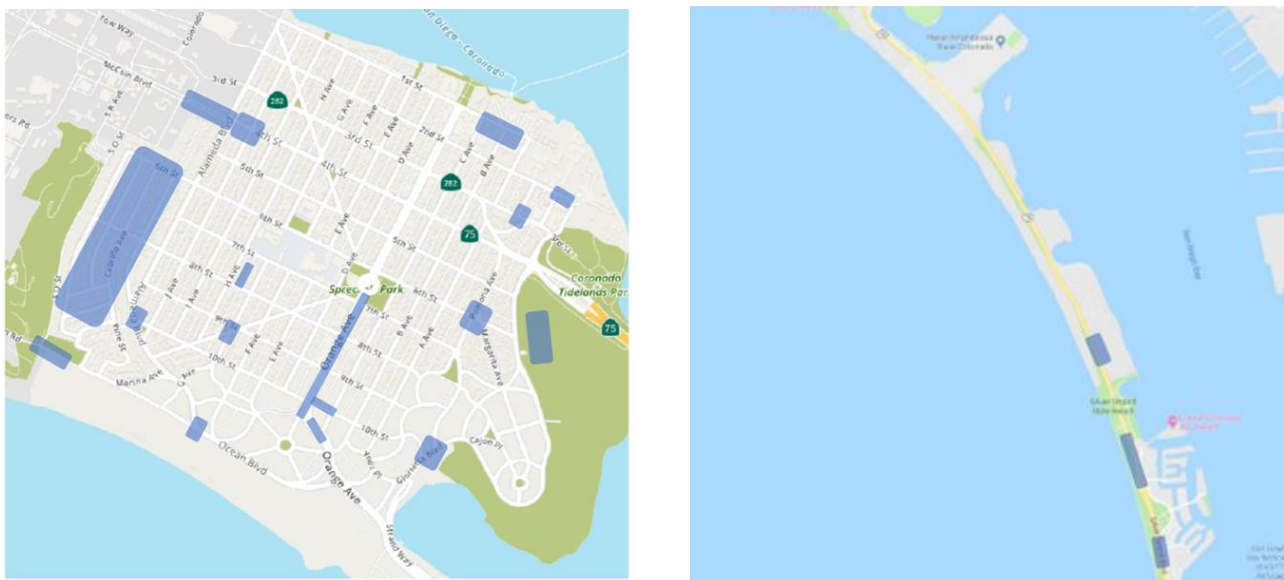


Figure 1: Areas of Flooding

### City Facilities and Infrastructure:

The most significant damage to City facilities due to flooding and water intrusion occurred at the John D. Spreckels Center & Bowling Green (JDSC&BG) and the Golf Course Maintenance Facility. The interior of the Spreckels Center was inundated with approximately 2 inches of water which caused buckling floors (both vinyl and carpet) in the Grand Room, Green Room, Multipurpose Room, Lounge, and offices. Baseboards were warped and blistered throughout the building. A restoration contractor was called in

at 10:30 pm to address the interior flooding of the JDSC&BG. The Spreckels Center will remain closed until the damaged materials are removed and replaced.

Both the Golf Course maintenance facility and maintenance center were flooded with approximately 2.5 feet of water. The maintenance facility had mud and water contamination of offices, equipment and the maintenance bay. However, there was no major damage to golf course maintenance equipment. The course also experienced significant pooling of water in certain areas with large ponds formed on holes #7 and #14. Pumps were rented to remove the water. The course was closed for two days while pumps were used to clear the standing water and was reopened on Sunday, December 9, 2018. The maintenance facilities are currently in process of being evaluated for remediation under the City's insurance policy. Portable facilities have been brought in to support normal golf course maintenance requirements.

Other City facilities with water intrusion damage included the Library, Community Center, City Hall, and Police Station. All are in process of being evaluated for claims under the City's insurance policy. A listing of known damaged City facilities and infrastructure is included as Enclosure (2) and photos of the damage are included in Enclosure (3).

There was no major damage to City or Caltrans operated roadways within the City. Numerous pot holes, a sinkhole on 6<sup>th</sup> Street near the Village Elementary school, and pavement undermining on the Bayshore Bikeway at Fiddler's Cove caused by the heavy rain and runoff were patched and repaired by December 12<sup>th</sup>. The side walk along Avenida del Sol was undermined by rainwater runoff and will need to be replaced.

Residential: Exact numbers of flood and water intrusion damage to residential homes are not currently known and the Community Development Department has not received any request for emergency building permits. Flooding was reported in homes in the Country Club neighborhood, 6th Street and Pomona Avenue, and near Five Points intersection. The Fire Department did help one property owner pump out their flooded garages on E Street. Additionally, there were numerous calls received by the Police Department about flooding across the City.

Orange Avenue Business Corridor: Due to the heavy storm runoff along Orange Street between 8<sup>th</sup> Street and Adella Avenue, several businesses had water intrusion and damage. According to Sue Gillingham at the Chamber of Commerce, several store fronts flooded and had property damage. Most businesses opened on time Friday morning, December 7<sup>th</sup>, but a few opened later in the day or over the weekend after drying out and a few remain closed.

Hotel del Coronado: It has been reported to City staff that the Hotel del Coronado received extensive flooding damage to rooms, facilities and maintenance areas and common areas. Additional information and an overall damage estimate are expected during the week of December 17<sup>th</sup>.

## **RECOVERY AND POST-STORM CLEAN UP**

The City Manager in consultation with the Public Services and Engineering Department Director made the decision to proceed with all planned December 7<sup>th</sup> Holiday community events. Public Services forces with help from the City's landscape contractor, Urban Corps of San Diego County, had to hand clean all the areas where there was standing water to include the Snow Mountain activities on the heavily flooded 1<sup>st</sup> Street at Ferry Landing, the parade route and spectator seating areas on Orange Avenue, and Rotary Park for the Tree lighting ceremony. The Facilities Division with contractor support replaced 22 ground fault interrupters (GFIs) on Orange Avenue that serviced the median holiday tree lights.

The City operated two street sweepers all day Friday, December 7<sup>th</sup> and Monday, December 10<sup>th</sup>. The Transbay PS had to be manually operated through Saturday, until a contractor could program and install a new PLC.

Overall, City employees worked a total of 316.25 manhours hours at \$18,638.51 for overtime and direct hours on storm response and clean-up (Enclosure 4).

The City Manager's office is in process of working with the City's insurance carrier to remediate all water intrusion damage at City facilities caused by the storm. Extensive cleanup and remediation efforts continue at the John D. Spreckels Center and Bowling Green (time TBD). The Public Services and Engineering Department along with support from the other departments are in process of completing an after-action review of lessons learned from the storm.

Source: City Departments – direct reporting

Prepared by:  
Allen Broughton  
Management Fellow  
12/18/18

<b>City of Coronado Facility and Infrastructure Damage</b>		
<b>Facility/Infrastructure</b>	<b>Damage</b>	<b>Status</b>
John D. Spreckels Center	Major -Interior of facility submerged in ~2” of water with buckling floors (both vinyl and carpet) in Grand Room, Green Room, Multipurpose Room, Lounge, offices, and warped baseboards throughout. Water has penetrated to backboard in some locations as well as potential damage to electronics on/in floor in Grand Room.	Closed -Awaiting repairs. -All classes/programs canceled while Center is closed.
Lawn Bowling Green	None Flooded but expected to dry out with no damage.	Open. -Recreation and Golf Services Dept discussing portable restroom/hand washing station for lawn bowlers while Spreckels Center facility is closed.
Community Center	Minor -Water leaks through west entryway and kitchen loading dock but staff managed clean-up with no damage. Known roof leak in Gymnasium and staff managed clean-up with no damage to floor.	Open -Gym re-opened 12/8/18
Aquatics Center	Minor -Large amount of landscaping debris flooded pool and deck area. Pump room was flooded.	Open -Pool closed for one day and reopened on 12/8/18 after cleaning and pool chemical and temperatures re-balancing back to normal.
Club Room & Boat House	None	Open



Facility/Infrastructure	Damage	Status
Golf Course	Minor -Clubhouse: No significant damage. -Golf Course: Minor damage to course due to flooding and pooling of water and loss of two (2) satellite watering controllers.	Open (Course was closed 12/7-8/18 due to pooling water)
Golf Course Maintenance Facility	Major 2.5 feet of flooding throughout facility. No significant damage to equipment.	Closed -Temp Facility being used for maintenance operations. -Being evaluated for repairs. -Facility will require decontamination. Portable facilities being brought in for maintenance operations.
Tennis Center Cays Courts Library Courts	None. Storm debris along bike path has been removed (12/11/18)	Open
Glorietta Bay Park Beach	Moderate beach erosion and rutting.	Open Public Services Dept cleaned and groomed beach on 12/7/18
Coronado Beach	Minor. Large surge of flotsam from Thursday's storm runoff come ashore with the high tide on 12/10/18 and removed by Public Services Dept on same day.	Open -Continuing to monitor and clean as debris washes up on shore.
Bayshore Bikeway	Minor - Asphalt pavement and undermining near Fiddler's Cove. Public Services Dept repaired on 12/11/18.	Open

Facility/Infrastructure	Damage	Status
Boat Ramp	None -Large amount of debris on ramp was cleared by staff.	Open
Glorietta Bay Seawall	Moderate -Riprap dislodgement. Large boulders positioned along the seawall to dissipate wave energy and protect the built infrastructure on the land side of the Bay-land interface were dislodged by the storm. They will need to be restored to their designed locations to ensure critical safety function and protection of seawall is restored.	Open -Being evaluated for repairs
Library	Minor -Roof leak near mural and near corner of Spreckels Room with damage to ceiling tiles, wall paint, and cabinet.	Open -Being evaluated for repairs
Police Station	Minor -Comm Center: Water intrusion under doors near entry points. Carpet may need replacement. -Parking garage/basement: Known water leakage in multiple locations including stairwell and northwest corner.	Open -Being evaluated for repairs
Fire Stations	Minor -Station 37: Roof leak -Station 26: Roof leak	Open -Being evaluated for repairs
Emergency Operations Center	Minor -Roof Leak	
City Hall	None	Open
Boat House Restaurant	Minor -Known roof leaks. A tarp is being used and Public Services team will apply roof sealant this week to temporarily address issues.	Open -Permanent roof repairs scheduled to be completed by roofing contractor during January 2019.

Facility/Infrastructure	Damage	Status
Roads: Various Locations	Minor -Storm-related pot hole damage occurred on numerous roadways.	Open -Public Services is in process on identifying and repairing pot holes.
Avenida del Sol – Sidewalk damaged	Moderate -Large section of sidewalk was undermined by stormwater runoff and will need to be completely replaced.	Open -Road is not impacted but sidewalk is closed to pedestrian traffic.

Storm Damage and Recovery Photos



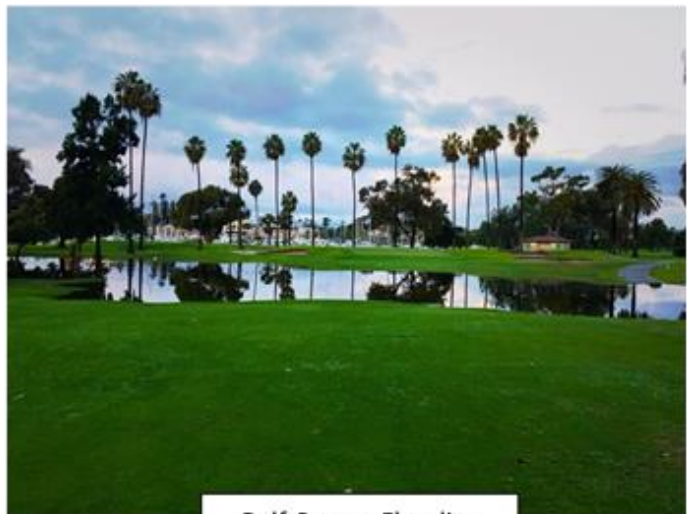
1<sup>st</sup> Ave



1<sup>st</sup> Ave



Orange Ave & 10th



Golf Course Flooding



Police Station Flooding



Avenida del Sol Sidewalk Repair



Before



After

Glorietta Bay Park



Beach Clean-up



Library Leaks





**Summary of Storm-Related Man-hours and Personnel Cost**

<b>Sum of Hours</b>			
<b>Dept/Division</b>	<b>Sum of Hours</b>	<b>Sum of Dollar Amount</b>	<b>Number of Employees</b>
+ FIRE	78.75	\$ 3,107.67	12
+ GOLF	7.50	\$ 404.65	6
+ POLICE	128.25	\$ 8,744.12	22
+ PUBLIC SERVICES	75.75	\$ 4,435.41	14
+ RECREATION	4.00	\$ 174.50	1
+ ADMIN SERVICES	14.00	\$ 763.70	2
+ CITY MANAGER	8.00	\$ 1,008.46	1
<b>Grand Total</b>	<b>316.25</b>	<b>\$ 18,638.51</b>	<b>58</b>