





(Photo by Maria R. Keown, Aurora Sentinel)


City of Aurora

September 2013 Flood Report



Overview

- Introduction
- Flood By the Numbers
- Damage Response
- Aurora Water Response
- City, County, State and Federal Recovery Work
- Conclusion



Mexico & Laredo

(Photo by Maria R. Keown, Aurora Sentinel)




Flood By the Numbers

- Rains fell Sept. 10 to 15
- Rain gauge at Mississippi & Peoria registered 15.43 inches of water in seven days
- Equivalent to more than 12 feet of snow
- National Weather Service places storm at one in a 1,000-year event in some locales



(Photo by Maria R. Keown, Aurora Sentinel)



Sunday September 15

- The last day of moisture with one final round of rain in the noon hour
- Storm totals as noted below in Aurora:



Location	Rainfall Total
Westminster	4.85
Welby	5.51
Commerce City	6.57
Northglenn	13.27
Wentzville	12.90
Windsor	7.99
Arden	3.43
Denver	5.31
North Platte	11.77
Windsor Park	10.60
Windsor	0.53
Windsor	2.21
Windsor	1.92
Windsor	5.24
Windsor	12.15
Windsor	10.42
Windsor	4.94
Windsor	2.48
Windsor	2.54
Windsor	8.68
Windsor	11.54
Windsor	7.28
Windsor	4.65
Windsor	2.44
Windsor	3.90
Windsor	14.37
Windsor	8.39
Windsor	2.95
Windsor	4.13
Windsor	9.84
Windsor	4.88
Windsor	1.07
Windsor	2.83
Windsor	4.99
Windsor	4.76
Windsor	4.25
Windsor	3.31
Windsor	5.71
Windsor	3.31
Windsor	4.88
Windsor	4.88




(Photo by Maria R. Kocown, Aurora Sentinel)

Peoria near Mexico

Sixth & Billings
(Photo by Scripps Media)

Aurora Office of Emergency Management

- Emergency Operations Plan implemented
- Emergency Operations Center (EOC) activated
- Lead city decision makers operating under Area Unified Command
- Joint Information Center
 - 24-hour call center and social media updating
- Interactive maps for real-time data



Aurora Fire Department: Actions Taken/Technical Rescue Deployment

- ▣ High Clearance 4WD International Engines (Rescues from Highline Community School)
- ▣ Multiple SUV's (MSU, BC, MED 2)
- ▣ Firefighters on Foot
- ▣ Technical Rescue Team (TIRT)
- ▣ 02:30 Aurora Fire TIRT Team activate to assist with water rescues in Boulder
- ▣ Assigned to Search and Rescue in Leifhand Canyon
- ▣ Walked for miles throughout the canyon assisting residents and searching homes


6th & Peoria
(Photo by Scripps Media)


6th & Peoria
(Photo by Scripps Media)

Aurora Police Department Emergency Response Team


- Handled All Flood related calls
- Preplanned worst case scenarios at local water storage areas, reservoirs, dams, roads, and bridges
- Managed numerous road closures
- Handled pre-evacuation for neighborhoods
- 4WD vehicles to assist in rescue

Alameda & Ironton
(Photo by Scripps Media)





(Photo by Maria R. Keown, Aurora Sentinel)
Alameda & Ironton




(Photo by Maria R. Keown, Aurora Sentinel)
Alameda & Havana

Aurora Public Works Department



- More than 40 plow trucks and 40 4WD vehicles deployed (24-hour basis)
- Streets closed and barricaded (used trucks when barricades unavailable)
- Traffic light engineers
- Cleaned up all damage

Aurora Building Division

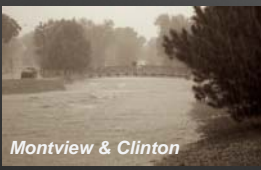
- Inspected and deemed safe operations for all damaged structures
- Voluntarily deployed 5 inspectors throughout metro to assist (3 counties, 7 cities, 3,000 structures, majority tagged red)
- Nationally Certified from FEMA
- Highly active in city during flood



(Photo by Maria R. Keown, Aurora Sentinel)
Peoria near Mexico


Utah Park
(Photo by Maria R. Keown, Aurora Sentinel)



Montview & Clinton
(Photo by Maria R. Keown, Aurora Sentinel)

Aurora Parks, Recreation & Open Space Department

- Protected recreation centers
- Assisted with barricade installation
- Rangers deployed flat bottom Jon boats for rescue operations with APD & AFD
- Significant cleanup activities after the storm




Mexico & Laredo
(Photo by Maria R. Keown, Aurora Sentinel)

Drainage

Aurora Water Response



Aurora Water Specific Storm Actions

- Traffic control
- Monitored Infrastructure (Kelly Road, Utah Park and Expo Park dams)
- Stormwater pumping
- Stormwater inlet cleaning
- Responded to citizens
- Assessed storm water intrusion into sewer collection system



Westerly Creek

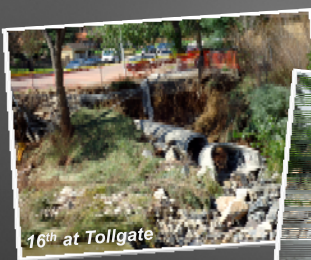


Aurora Water Post-storm Actions

- Inspected drainage channels
- FEMA tours
- Inspected 110 street storm inlets
- Inspected Highline Canal
- Assisted residents in cleanup efforts in homes



The Grove, Peoria & Florida



16th at Tollgate



Montview & Clinton



Aurora Water Adams County Damages

Tollgate Creek near 17th Avenue presented some of the more extensive after-the-fact damage. Initial estimates for repair in Adams County for Aurora Water Control Facilities are: **\$566,529**



Highline Canal near Exposition



Sixth Avenue near I-225



Aurora Water Arapahoe County Damages

Tollgate Creek from Sixth Avenue to I-225 experienced heavy flooding and swept away portions of the concrete and drainage infrastructure. Total repair cost for Arapahoe County for Aurora Water Control Facilities is: **\$984,568**



Aurora Water: Weld County Damages

Everist Reservoir suffered a breach causing significant damage:
\$1,508,038

Everist Reservoir



Before



After



Before



After



Peoria & Mexico

(Photo by Maria R. Keown, Aurora Sentinel)

Drying Out

City, County, State & Federal Recovery Work

FEMA Individual Assistance

- In conjunction with the OEM, FEMA opened assistance center at Aurora Central Library. Services provided:

- Eligibility claims assistance
- Loan Information for SBA
- Red Cross assistance
- Tri-County Health Department Services



Expo Park

(Photo by Maria R. Keown, Aurora Sentinel)



FEMA Individual Assistance Payout Info



Individuals & Households
FIDA_22275_mod
For Official Use Only
 Data As Of: 11/8/13

County	Damaged City	Reg Count	FVL	HA Eligible	ONA Eligible	IHP Eligible
Adams (County)	AURORA	226	\$249,264.58	\$203,879.21	\$37,532.04	\$241,411.25
Arapahoe (County)	AURORA	2,464	\$3,209,508.59	\$2,820,199.83	\$242,582.46	\$3,062,782.29
Sum:		2,690	\$3,458,773.17	\$3,024,079.04	\$280,114.50	\$3,304,193.54

FEMA Individual Assistance Provisions:

FVL = FEMA Verified Loss,
 HA = Housing Assistance (temporary housing/housing repair)
 ONA = Other Needs Assistance (personal property, transportation, medical/dental, disaster related funeral expenses, etc.)
 IHP = Individuals and Households Program



Peoria near Mexico

(Photo by Maria R. Keown, Aurora Sentinel)



The Grove, Peoria & Florida

(Photo by Maria R. Keown, Aurora Sentinel)

FEMA Public Assistance

- Cost recovery for city and Tri-County area. Process for recovery:
- Submit request for assistance to Colorado Department of Public Safety (Complete)
- Kickoff Meeting
- Completion of Work
- Reimbursement from FEMA:
 - 75% FEMA
 - 12.5% State
 - 12.5% City and Counties



Damage Assessment

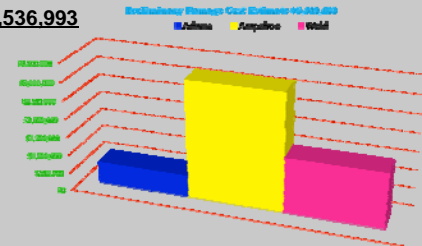
Preliminary Damage Cost Estimate for All Public Entities in Aurora

Adams County: \$605,068.10

Arapahoe County: \$3,206,386.19


Weld County: \$1,508,038.80


All Counties: \$5,536,993




Cost Breakdown (Detail)

Overtime Expenditures		\$217,499.74
Supplies and Equipment Repair/Replacement		\$306,576.45
Permanent Work		\$3,791,783.68
Other Public Organizations Damage Estimates		\$1,221,132.96
		\$5,536,993





Conclusion & Questions




Expo Park

(Photo by Mario R. Keown, Aurora Sentinel)


Cost Breakdown (Detail)

Overtime Expenditures		
	Aurora Water	\$41,889.09
	Communications	\$1,968.12
	Fire	\$17,794.82
	Internal Services	\$863.78
	IT	\$473.09
	Neighborhood Services	\$1,320.95
	Police	\$70,086.77
	PROS	\$15,736.16
	PSCOMM	\$11,413.00
	Public Works	\$55,953.96
	Grand Total	\$217,499.74



Cost Breakdown (Detail) Continued

Supplies and Equipment Repair/Replacement		
	Adams County	\$2,910.80
	Category E: Buildings and Equipment	\$2,734.00
	Category G: Parks, Recreational Facilities	\$176.80
	Arapahoe County	\$303,665.65
	Category B: Emergency Protective Measures	\$55,482.16
	Category E: Buildings and Equipment	\$105,552.97
	Category G: Parks, Recreational Facilities	\$142,630.52
	Grand Total	\$306,576.45



Cost Breakdown (Detail) Continued

Permanent Work	(Capital Projects) for City of Aurora Only	
	Adams	\$602,157.30
	Category C: Roads and Bridges (COA)	\$35,000.00
	Category D: Water Control Facilities (COA)	\$566,529.00
	Category G: Parks, Recreational Facilities	\$628.30
	Arapahoe	\$1,681,587.58
	Category C: Roads and Bridges	\$620,951.15
	Category D: Water Control Facilities	\$984,568.00
	Category E: Buildings and Equipment	\$40,235.71
	Category G: Parks, Recreational Facilities	\$35,832.72
	Weld	\$1,508,038.80
	Category D: Water Control Facilities (COA)	\$1,508,038.80
	Grand Total	\$3,791,783.68



Cost Breakdown (Detail) Continued

Other Public Organizations Damage Estimates		
	Arapahoe County	\$88,132.96
	Aurora Housing Authority	\$292,000.00
	Aurora Public Schools	\$300,000.00
	Cherry Creek School District	\$41,000.00
	Denver Water	\$500,000.00
	Grand Total	\$1,221,132.96

Preliminary Damage Cost Estimate	(City of Aurora Only)	
	Adams County	\$605,068.10
	Arapahoe County	\$1,985,253.23
	Weld County	\$1,508,038.80
	All Counties	\$4,098,360.13



Cost Breakdown (Detail) Continued

Permanent Work (Capital Projects) for All Public Entities in Aurora

Adams	\$602,157.30
Category C: Roads and Bridges (COA)	\$35,000.00
Category D: Water Control Facilities (COA)	\$566,529.00
Category G: Parks, Recreational Facilities	\$628.30
Arapahoe	\$2,902,720.54
Category C: Roads and Bridges (COA)	\$620,951.15
Category D: Water Control Facilities (COA)	\$984,568.00
Category D: Water Control Facilities (Denver Water)	\$500,000.00
Category E: Buildings and Equipment (COA)	\$40,235.71
Category E: Buildings and Equipment (APS)	\$300,000.00
Category E: Buildings and Equipment (CCSD)	\$41,000.00
Category E: Buildings and Equipment (AHA)	\$292,000.00
Category C/E/G: Roads, Buildings and Parks (Arapahoe County Government)	\$88,132.96
Category G: Parks, Recreational Facilities (COA)	\$35,832.72
Weld	\$1,508,038.80
Category D: Water Control Facilities (COA)	\$1,508,038.80
Grand Total	\$5,012,916.64

