

# **Perspectives on Facility Damage - 2001**

(Volume I, Version -a-)

An annual report published by Utility Notification Center of Colorado reviewing underground facility damages resulting from excavation activity.

For Calendar Year 2001

Utility Notification Center of Colorado  
16361 Table Mountain Parkway  
Golden, CO 80304  
(303) 232-1991  
[www.UNCC.org](http://www.UNCC.org)

This report may be referenced as the Utility Notification Center of Colorado analysis on underground facility damage.

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In early 2001, 11,092 underground facility damages were submitted into the new Utility Notification Center of Colorado (UNCC) Web-based Damage Reporting System. The Damage Reporting System was legislatively mandated in C.R.S. 9.1.5-101-106 in 2000. Sixty-five of the nearly 1,000 member organizations reported their damage incidents from 51 of the 64 counties within Colorado. With 5,022,752 billable transmissions in 2001, reported damages were limited to only 0.22% of request transmissions to member facility owners, or 2.2 facility damages per 1000 transmissions. In addition, there were only 2 injuries and no deaths resulting from the damage incidents to member facilities. This result may indicate that use of One-Call services has helped minimize the number of damaged facilities; protecting human life and maintaining vital community access to public utilities and private services. This exceptional result has also been achieved through both UNCC and member awareness programs as well as industry training for operators and excavators.

The changes to the existing One-Call legislation (passed in the spring of 2000) provided for stronger definition of industry locate and damage prevention requirements as well as higher civil penalties for violations of these regulations. The purpose of legislatively mandated effort to collect underground facility damage information is threefold: 1) to increase the utilization of the One-Call service; 2) to decrease the occurrence of damage to member facilities; and 3) to analyze trends in facility damage and assess the statewide damage prevention effort. Through this continued cooperative effort, the industry will work to prevent injury to the public, minimize damage to member facilities and maintain reliable community access to underground facilities and services. Analysis of the facility damage information collected over future years will allow UNCC and the industry to learn how to better promote damage prevention awareness and One-Call services, how to improve the educational programs for facility owners and excavators, and how to successfully promote damage prevention activity throughout the industry.

2001 is the first year to collect and analyze underground facility damage information. UNCC wishes to thank all those members who had resources available to collect and report this important information. Although not all members reported, the 11,092 damages reported by the 65 members were the majority of the damages that actually occurred in 2001. This data will provide an excellent baseline with which to measure damage prevention activity and continued progress in future years. Some inconsistencies will occur in the data until the scope and the detail of the information collected is better understood. It is expected that the relevance of the system, the quantity of the data and the quality of the information will improve as the system is accepted and utilized by more facility owners.

As stated earlier, the purpose of the facility damage data collection and analysis effort is to identify trends that allow UNCC and the industry to improve damage prevention activity through advertising, marketing, training and legislative efforts. It is not meant to identify or single out any stakeholder or stakeholder groups for their specific activity. It is meant to directly improve the accountability of all stakeholders through enhanced damage prevention activity. By closely working together and through active communication, the goal of reducing facility damage, preventing injury and loss of life, and maintaining vital community access to public utilities and private services can be attained.

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The 2001 damage data provides a number of useful insights pertaining to location requests. Interestingly, 62.2% of the reported damages actually had a locate request, while only 37.8% of the reported damages did not have a locate request. This finding points to a further need for training for facility operators, locators and excavators, especially in the areas of proper facility location and marking and more careful excavation around facilities by mechanical excavators (Backhoes and Trenchers). In addition, it suggests the need for continued industry promotion and community advertising to encourage excavators and the public to request locates. It may also suggest the need to promote and support even tougher industry legislation and higher penalties for those who needlessly violate the regulations by not requesting locates and those who need to exercise more care when excavating around marked facilities.

The composite of the damage data has shed a factual light upon what was often presumed was occurring. Mechanical excavation equipment (Backhoes-49% of total damages, Trenchers-17%) causes the majority of the damage to both shallow and deep facilities (Communications-52%, Gas-29%). Qwest Communications and Xcel Energy, two of the largest service providers in the state, had the highest number of damaged facilities (59% and 29% respectively). Front-range metro area counties had the highest number of damaged facilities at 68% of total damages (El Paso-18%, Arapahoe-11%, Jefferson-9%, Boulder-8%, Larimer, Adams and Denver-7% each).

Further analysis provides useful insight into enhancing damage prevention activity by identifying facility types, excavator groups and counties that need advanced training programs. 70% of the facilities damaged by backhoe operators and 62% of the facilities damaged by trencher operators had a locate request. 62% of the damaged communication facilities and 59% of the damaged gas facilities had a locate request. In El Paso county, with the highest damage count, only 29% of the damaged facilities did not have a locate request – suggesting county excavators should be trained in more careful excavation practices around located facilities. While in Boulder county, also high in damage count, 42% of the damaged facilities did not have a locate request – suggesting county excavators should be both encouraged to request locates and also trained in more careful excavation practices around located facilities. Further careful analysis of this data will allow UNCC and facility owners to target, direct and enhance awareness and training programs for specific stakeholder groups and geographic areas. This will provide the greatest impact to increase the use of the locate request service and to reduce facility damage.

This brief report is not meant to be an exhaustive analysis and review of the 2001 damage data. It is meant to provide a meaningful update on the status of the project of collecting the data and assessing the information. It is also meant to provide insight on how this valuable information can be used to improve damage prevention efforts in the coming years. The damage committee and UNCC staff will continue throughout the year to further analyze the information, improve the viability of the system, and utilize the insightful knowledge gained to enhance awareness, advertising and training programs. Continued cooperation and open communication will ensure that the goal of reducing facility damage, preventing injury and loss of life, and maintaining vital community access to public utilities and private services will be met.

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## Summary Data

<b>Damage Summary Data</b>		<b>For 2001</b>	
Locate Requests in 2001 (Adjusted)	760,876		
Billable Transmissions in 2001	5,022,752		
<b>Damages Reported in 2001</b>	<b>11,092</b>	<b>2.2 Damages per 1000 Facility Transmissions</b>	
Members Reporting Damage	65		
Counties with Reported Damage	51		
Total Customers Affected	527,290		
Total Injuries	2		
Total Deaths	0		
<b>Damages with a Locate Request</b>	<b>6903</b>	<b>% Damages with a Locate Request</b>	<b>62.2%</b>
<b>Damages without a Locate Request</b>	<b>4189</b>	<b>% Damages without a Locate Request</b>	<b>37.8%</b>

<b>Cause Of Damage</b>	<b>Damages</b>		<b>% Total</b>
Excavation Outside Locate Area	32	Locate Requested	0.3%
Insufficient Markings	37	Locate Requested	0.3%
Expired Locate	52	Locate Requested	0.5%
Facility Marked Inaccurately	1404	Locate Requested	12.7%
Facility Not Marked or Located	1708	Locate Requested	15.4%
<b>Facility Marked Correctly</b>	<b>2699</b>	Locate Requested	<b>24.3%</b>
<b>No Locate Request by Excavator</b>	<b>2761</b>	Locate NOT Requested	<b>24.9%</b>
<b>None of Above</b>	<b>2399</b>	Locate Request Unknown	<b>21.6%</b>
	11092		100.0%

<b>Damage Error Type</b>	<b>Damages</b>		<b>% Total</b>
Explosive	4		0.0%
Vacuum	1		0.0%
Probe	9		0.1%
Direct-Drill	30		0.3%
Drilling	96		0.9%
Boring	346		3.1%
Auger	490		4.4%
Hand Tool	568		5.1%
Grader	620		5.6%
Unknown	1617		14.6%
<b>Trencher</b>	<b>1869</b>		<b>16.8%</b>
<b>Backhoe</b>	<b>5442</b>		<b>49.1%</b>
	11092		100.0%

<b>Facility Type Damaged</b>	<b>Damages</b>		<b>% Total</b>
Hazardous Liquid	2		0.0%
Irrigation	2		0.0%
Sewer	19		0.2%
Potable Water	199		1.8%
CATV	802		7.2%
Electric	1149		10.4%
<b>Gas</b>	<b>3191</b>		<b>28.8%</b>
<b>Communications</b>	<b>5728</b>		<b>51.6%</b>
	11092		100.0%

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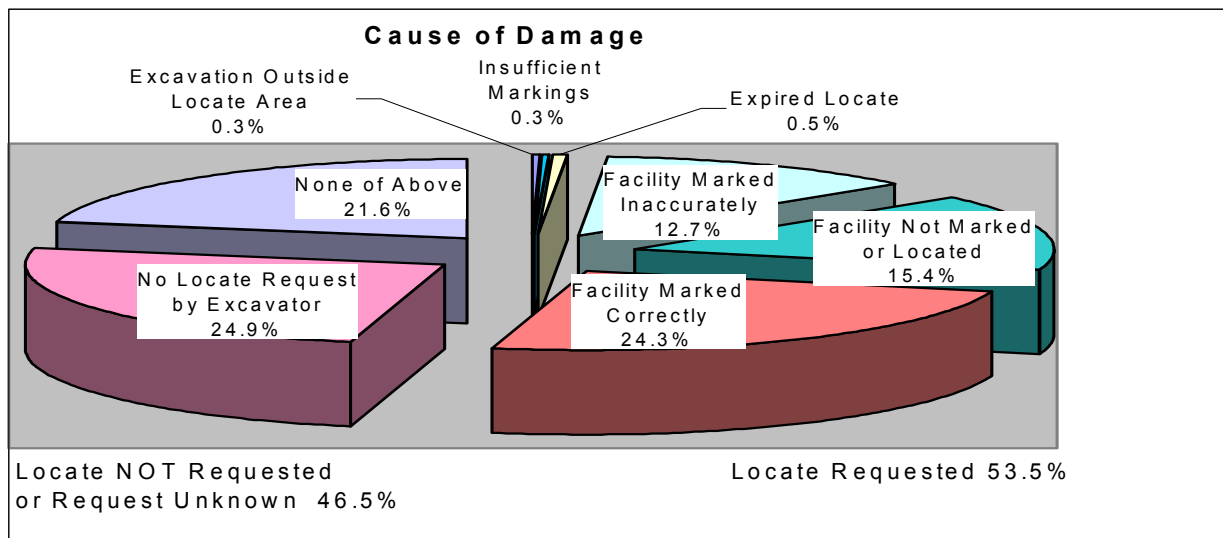
**Cause of Damage**

24.9% of the reported damages did not have a locate request.

21.6% of the damages did not have a cause indicated.

53.5% of the damages had a locate request. Of these, about 1/2 had no markings or inaccurately marked facilities and the other 1/2 had facilities marked correctly.

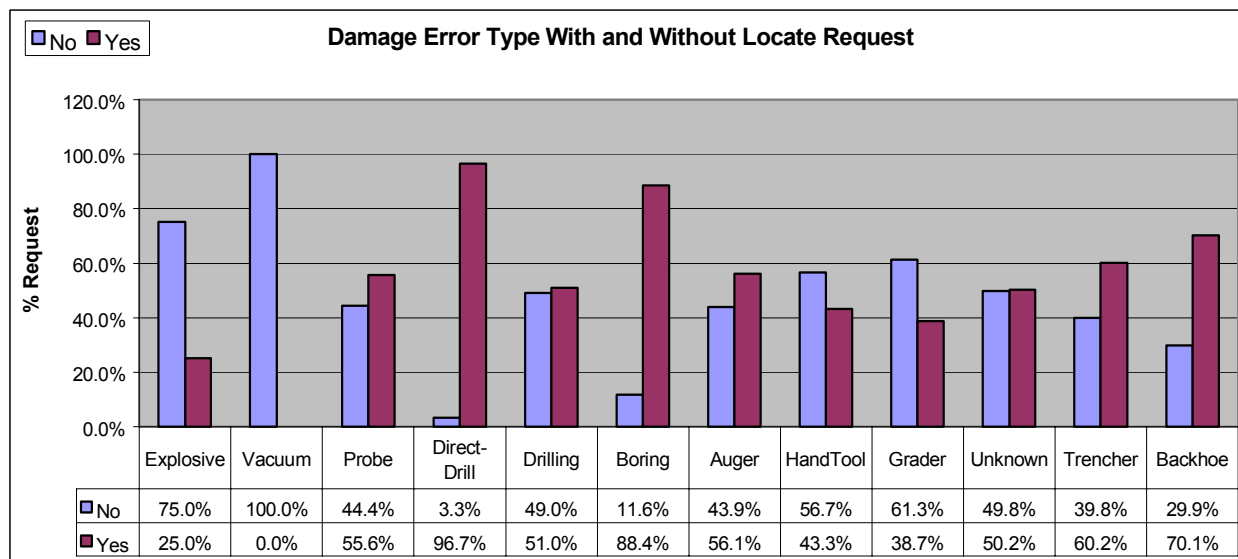
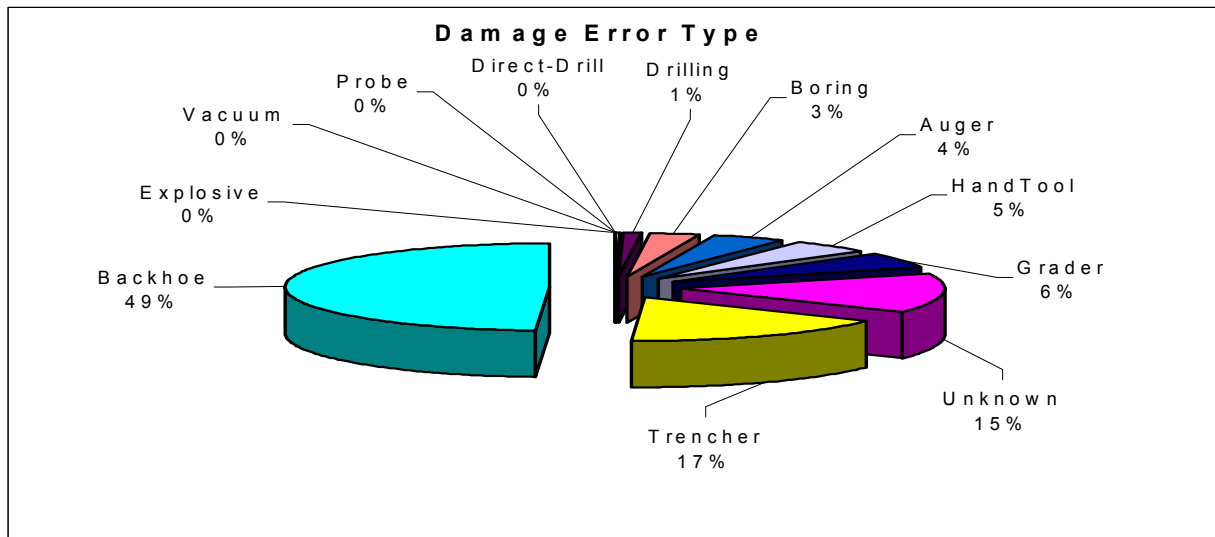
Damage Cause	Count	%Total	
Excavation Outside Locate Area	32	0.3%	Locate Requested
Insufficient Markings	37	0.3%	Locate Requested
Expired Locate	52	0.5%	Locate Requested
<b>Facility Marked Inaccurately</b>	<b>1404</b>	<b>12.7%</b>	Locate Requested
<b>Facility Not Marked or Located</b>	<b>1708</b>	<b>15.4%</b>	Locate Requested
<b>Facility Marked Correctly</b>	<b>2699</b>	<b>24.3%</b>	Locate Requested
<b>No Locate Request by Excavator</b>	<b>2761</b>	<b>24.9%</b>	Locate NOT Requested
None of Above	2399	21.6%	Locate Request Unknown
	11092	100.0%	



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**Damage Error Type**

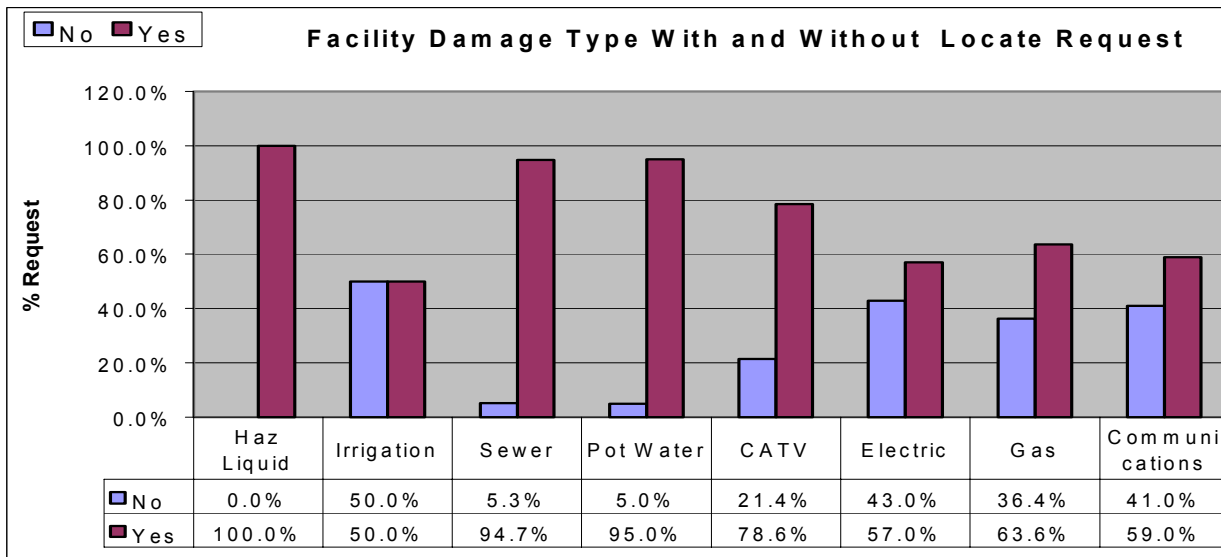
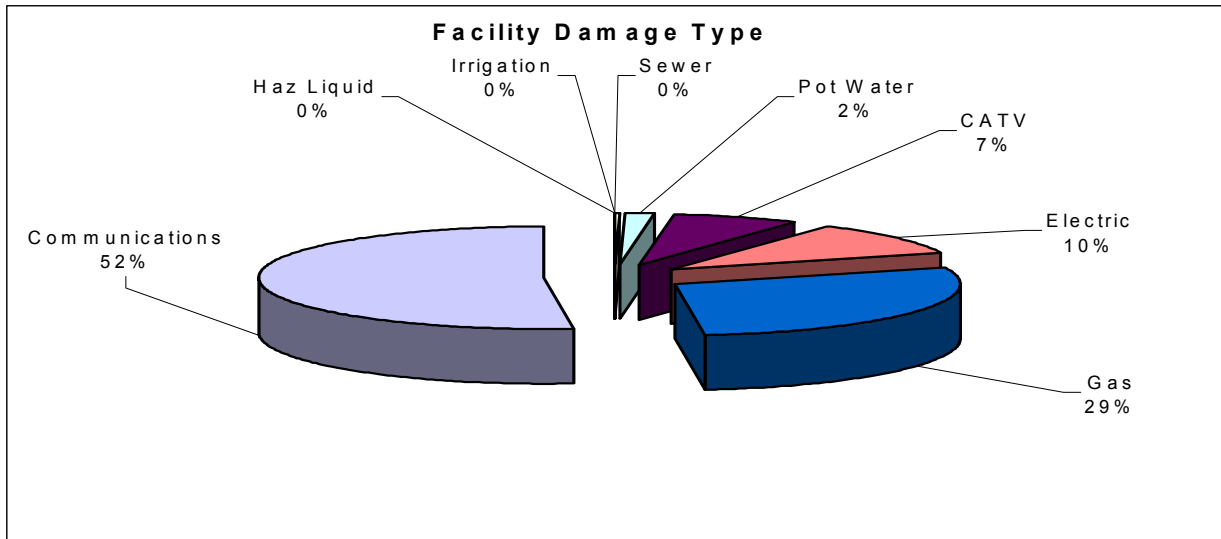
Error Type	Count	%Total	No Request	%No Request	With Request	%With Request
Explosive	4	0.0%	3	75.0%	1	25.0%
Vacuum	1	0.0%	1	100.0%	0	0.0%
Probe	9	0.1%	4	44.4%	5	55.6%
Direct-Drill	30	0.3%	1	3.3%	29	96.7%
Drilling	96	0.9%	47	49.0%	49	51.0%
Boring	346	3.1%	40	11.6%	306	88.4%
Auger	490	4.4%	215	43.9%	275	56.1%
Hand Tool	568	5.1%	322	56.7%	246	43.3%
Grader	620	5.6%	380	61.3%	240	38.7%
Unknown	1617	14.6%	806	49.8%	811	50.2%
Trencher	1869	16.8%	744	39.8%	1125	60.2%
Backhoe	5442	49.1%	1626	29.9%	3816	70.1%
	11092	100.0%	4189	37.8%	6903	62.2%



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**Facility Damage Type**

Facility Type	Count	%Total	No Request	%No Request	With Request	%With Request
Hazardous Liquid	2	0.0%	0	0.0%	2	100.0%
Irrigation	2	0.0%	1	50.0%	1	50.0%
Sewer	19	0.2%	1	5.3%	18	94.7%
Potable Water	199	1.8%	10	5.0%	189	95.0%
CATV	802	7.2%	172	21.4%	630	78.6%
Electric	1149	10.4%	494	43.0%	655	57.0%
Gas	3191	28.8%	1161	36.4%	2030	63.6%
Communications	5728	51.6%	2350	41.0%	3378	59.0%
	11092	100.0%	4189	37.8%	6903	62.2%



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**Damage by Member**

Sixty-five member organizations reported facility damages in 2001.

Expectedly, Qwest (51.1% of total) and Xcel (29.5%) reported the highest number of damages followed by Colorado Spring Utilities, Adelphia, AT&T Broadband and Greeley Gas (1-7% each).

Company	Count	% Total
Qwest	5662	51.05%
Xcel Energy	3267	29.45%
Colo Springs Utilities	739	6.66%
Adelphia	469	4.23%
AT&T Broadband	347	3.13%
Greeley Gas	154	1.39%
Kinder Morgan	105	0.95%
Denver Water	73	0.66%
Intermountain REA	44	0.40%
Ute Water Conservancy	33	0.30%
Gunnison Electric	27	0.24%
Blanca Telephone	22	0.20%
United Power	20	0.18%
Delta-Montrose Electric	10	0.09%
City Loveland	8	0.07%
East Larimer County Water	8	0.07%
UNCC	8	0.07%
City Fountain	7	0.06%
City Canon City	5	0.05%
ICG Communications	5	0.05%
Town Rangely Gas	5	0.05%
City Aspen	4	0.04%
City Greeley	4	0.04%
City Trinidad	4	0.04%
Contractor	3	0.03%
Glenwood Springs Electric	3	0.03%
Holy Cross Energy	3	0.03%
HS Gathering	3	0.03%
Sangre De Cristo Electric	3	0.03%
XO Communications	3	0.03%
Big Sandy Telecom	2	0.02%
City Durango	2	0.02%

Company	Count	% Total
Clifton Water	2	0.02%
ComFur Gas	2	0.02%
Haxtun Telephone	2	0.02%
Key Excavating	2	0.02%
Mountain Village Metro	2	0.02%
Town Estes Park	2	0.02%
Toyota	2	0.02%
Aqua Source	1	0.01%
AspenConsol	1	0.01%
Bancroft-Clover Water	1	0.01%
Centennial Water	1	0.01%
City Ft Morgan	1	0.01%
City Lakewood	1	0.01%
City Northglenn	1	0.01%
City Thornton	1	0.01%
Colorado Interstate Gas	1	0.01%
Columbine Telecom	1	0.01%
Eagle Crest Homeowners	1	0.01%
EIPaso County Telephone	1	0.01%
Escalante Golf	1	0.01%
Evergreen Meter District	1	0.01%
Forest Lakes Metro District	1	0.01%
Forte	1	0.01%
Grand Junction Drainage	1	0.01%
Green Mnt Water	1	0.01%
High Plains Water	1	0.01%
Kerr Mcgee	1	0.01%
Napp Landscape	1	0.01%
Nucla Telephone	1	0.01%
Red Cedar Gathering	1	0.01%
Snowmass Lodging	1	0.01%
St Charles Mesa Water	1	0.01%
Town Milliken	1	0.01%
<b>Total</b>	<b>11092</b>	<b>100.0%</b>

Green >1.0% (111+ Damages)

Yellow 0.10% to 1.0% (11 – 111 Damages)



# UNCC Damage Reporting Data - 2001

## Damage by County

Members reported facility damages in 51 counties in 2001.

El Paso (18.3% of total), Arapahoe (10.7%) and Jefferson (9.4%) counties reported the highest number of damages followed by Boulder, Larimer, Adams, and Denver counties (about 7% each).

County	Count	%Total	No Request	%No Request
El Paso	2035	18.3%	584	28.7%
Arapahoe	1190	10.7%	465	39.1%
Jefferson	1045	9.4%	403	38.6%
Boulder	866	7.8%	367	42.4%
Larimer	827	7.5%	332	40.1%
Adams	796	7.2%	307	38.6%
Denver	772	7.0%	250	32.4%
Weld	521	4.7%	198	38.0%
Mesa	443	4.0%	204	46.0%
Douglas	332	3.0%	93	28.0%
Pueblo	287	2.6%	148	51.6%
LaPlata	213	1.9%	110	51.6%
Teller	180	1.6%	73	40.6%
Grand	128	1.2%	69	53.9%
Delta	125	1.1%	32	25.6%
Elbert	114	1.0%	73	64.0%
Garfield	109	1.0%	38	34.9%
Montezuma	125	1.1%	62	49.6%
Moffat	124	1.1%	50	40.3%
Summit	94	0.8%	31	33.0%
Gunnison	93	0.8%	28	30.1%
Fremont	83	0.7%	25	30.1%
SanMiguel	53	0.5%	12	22.6%
Gilpin	48	0.4%	21	43.8%
Chaffee	43	0.4%	11	25.6%

County	Count	%Total	No Request	%No Request
Logan	41	0.4%	29	70.7%
Clear Creek	40	0.4%	19	47.5%
LasAnimas	39	0.4%	12	30.8%
Alamosa	37	0.3%	25	67.6%
Morgan	36	0.3%	22	61.1%
Eagle	34	0.3%	12	35.3%
Montrose	33	0.3%	3	9.1%
Ouray	33	0.3%	19	57.6%
RioGrand	24	0.2%	13	54.2%
Costilla	21	0.2%	0	0.0%
Park	21	0.2%	4	19.0%
RioBlanco	20	0.2%	13	65.0%
Lake	14	0.1%	9	64.3%
Pitkin	11	0.1%	3	27.3%
Lincoln	11	0.1%	8	72.7%
Washington	7	0.1%	3	42.9%
Routt	3	0.0%	0	0.0%
Sedgwick	4	0.0%	1	25.0%
Doleras	4	0.0%	2	50.0%
Huerfano	4	0.0%	2	50.0%
Prowers	3	0.0%	2	66.7%
Custer	2	0.0%	0	0.0%
SanJuan	1	0.0%	0	0.0%
Archuleta	1	0.0%	0	0.0%
Baca	1	0.0%	1	100.0%
Phillips	1	0.0%	1	100.0%

11092 100.0% 4189

Green >7.0% (770+ Damages)

Yellow 1.0% to 7.0% (100 – 770 Damages)

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