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# **Damage Investigations**

## **. . . a utility's perspective**

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**2011 Damage Prevention & Excavation Safety Summit**  
**Boone County Fairgrounds, Columbia, MO**  
**November 9, 2011**



# Damage Investigations ... a utility's perspective

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## ✓ Discussion Topics

- Why utilities need to conduct damage investigations
- What a good damage data collection form should include
  - Collecting the data
- What to do with the data collected
- Post-damage follow-up work
- Measuring effectiveness
- Excavator's point-of-view

# Damage Investigations . . . a utility's perspective



- ✓ **Why utilities need to conduct damage investigations**
  - **To document the damage details**
    - To determine what happened—document the facts
  
  - **To gather repair cost data**
    - Quantify labor, equipment, material costs
      - To establish cost of the damage
      - To pursue/defend collection activity if determined to be billable
  
  - **To meet regulatory agency and program requirements**
    - MoPSC, PHMSA, etc.
    - D.I.M.P. (distribution integrity management program)
      - Identify problem areas
      - Enable utilities to address known issues on their system

# Damage Investigations ... a utility's perspective

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- ✓ **What a good damage data collection form should include**
  - **Be able to determine what happened**
    - Establish the basic facts
      - Who, what, when, where, why and how
      - Allow room to enter unique damage info
    - Collect complete, accurate and consistent data
  - **Be able to document what it took to make the repair**
    - Repair crew data and time it took to repair
      - Labor
      - Equipment
      - Materials

# Damage Investigations . . . a utility's perspective

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- ✓ **What a good damage data collection form should include (cont.)**
  - **Be able to analyze facts to identify problem areas**
    - Use checkboxes or standard options
      - (allows for consistent data gathering)
    - Use root causes to help direct utilities to problem areas
  - **Sample data collection forms**
    - CGA D.I.R.T. field data form
    - Laclede third-party damage data collection form F-647

# Damage Investigations . . . a utility's perspective



## ✓ Common Ground Alliance D.I.R.T. Field Form (www.cga-dirt.com)

### Damage Information Reporting Tool (DIRT) - Field Form

Rev: 1/16/2009  
 \*\* indicates a Required Field

**Part A – Who is Submitting This Information**

Who is providing the information?  Electric  Engineer/Design  Equipment Manufacturer  
 Excavator  Insurance  Liquid Pipeline  Locator  Natural Gas  
 One-Call Center  Private Water  Public Works  Railroad  
 Road Builders  State Regulator  Telecommunications  Unknown/Other

Name of the person providing the information: \_\_\_\_\_

**Part B - Date and Location of Event**

\*Date of Event: \_\_\_\_\_ (MM/DD/YYYY)  
 \*Country \_\_\_\_\_ \*State \_\_\_\_\_ \*County \_\_\_\_\_ City \_\_\_\_\_  
 Street address \_\_\_\_\_ Nearest Intersection \_\_\_\_\_  
 \*Right of Way where event occurred \_\_\_\_\_  
 Public:  City Street  State Highway  County Road  Interstate Highway  Public-Other  
 Private:  Private Business  Private Land Owner  Private Easement  
 Pipeline  Power /Transmission Line  Dedicated Public Utility Easement  
 Federal Land  Railroad  Data not collected  Unknown/Other

**Part C – Affected Facility Information**

\*What type of facility operation was affected?  
 Cable Television  Electric  Natural Gas  Liquid Pipeline  Sewer (Sanitary Sewer)  
 Steam  Telecommunications  Water  Unknown/Other

\*What type of facility was affected?  
 Distribution  Gathering  Service/Drop  Transmission  Unknown/Other

Was the facility part of a joint trench?  
 Unknown  Yes  No

Was the facility owner a member of One-Call Center?  
 Unknown  Yes  No

**Part D – Excavation Information**

\*Type of Excavator  
 Contractor  County  Developer  Farmer  Municipality  Occupant  
 Railroad  State  Utility  Data not collected  Unknown/Other

\*Type of Excavation Equipment  
 Auger  Backhoe/Trackhoe  Boring  Drilling  Directional Drilling  
 Explosives  Farm Equipment  Grader/Scraper  Hand Tools  Milling Equipment  
 Probing Device  Trencher  Vacuum Equipment  Data Not Collected  Unknown/Other

\*Type of Work Performed  
 Agriculture  Cable Television  Curb/Sidewalk  Bldg. Construction  Bldg. Demolition  
 Drainage  Driveway  Electric  Engineering/Survey  Fencing  
 Grading  Irrigation  Landscaping  Liquid Pipeline  Milling  
 Natural Gas  Pole  Public Transit Auth.  Railroad Maint.  Road Work  
 Sewer (san/storm)  Site Development  Steam  Storm Drain/Culvert  Street Light  
 Telecommunication  Traffic Signal  Traffic Sign  Water  Waterway Improvement  
 Data Not Collected  Unknown/Other

**Part E – Notification**

\*Was the One-Call Center notified?  
 Yes (If Yes, Part F is required)  No (If No, Skip Part F)  
 If Yes, which One-Call Center? \_\_\_\_\_  
 If Yes, please provide the ticket number \_\_\_\_\_

**Part F - Locating and Marking**

\*Type of Locator  
 Utility Owner  Contract Locator  Data Not Collected  Unknown/Other

\*Were facility marks visible in the area of excavation?  
 Yes  No  Data Not Collected  Unknown/Other

\*Were facilities marked correctly?  
 Yes  No  Data Not Collected  Unknown/Other

**Part G – Excavator Downtime**

Did Excavator incur down time?  
 Yes  No  
 If yes, how much time?  
 Unknown  Less than 1 hour  1 hour  2 hours  3 or more hours Exact Value \_\_\_\_\_

Estimated cost of down time?  
 Unknown  \$0  \$1 to 500  \$501 to 1,000  \$1,001 to 2,500  \$2,501 to 5,000  
 \$5,001 to 25,000  \$25,001 to 50,000  \$50,001 and over Exact Value \_\_\_\_\_

**Part H – Description of Damage**

\*Was there damage to a facility?  
 Yes  No (i.e. near miss)

\*Did the damage cause an interruption in service?  
 Yes  No  Data Not Collected  Unknown/Other

If yes, duration of interruption  
 Unknown  Less than 1 hour  1 to 2 hrs  2 to 4 hrs  4 to 8 hrs  8 to 12 hrs  12 to 24 hrs  
 1 to 2 days  2 to 3 days  3 or more days  Data Not Collected Exact Value \_\_\_\_\_

Approximately how many customers were affected?  
 Unknown  0  1  2 to 10  11 to 50  51 or more Exact Value \_\_\_\_\_

Estimated cost of damage / repair/restoration  
 Unknown  \$0  \$1 to 500  \$501 to 1,000  \$1,001 to 2,500  \$2,501 to 5,000  
 \$5,001 to 25,000  \$25,001 to 50,000  \$50,001 and over Exact Value \_\_\_\_\_

Number of people injured  
 Unknown  0  1  2 to 9  10 to 19  20 to 49  50 to 99  
 100 or more Exact Value \_\_\_\_\_

Number of fatalities  
 Unknown  0  1  2 to 9  10 to 19  20 to 49  50 to 99  
 100 or more Exact Value \_\_\_\_\_

**Part I – Description of the Root Cause** \*Please choose one

<input type="checkbox"/> One-Call Notification Practices Not Sufficient <input type="checkbox"/> No notification made to the One-Call Center <input type="checkbox"/> Notification to one-call center made, but not sufficient <input type="checkbox"/> Wrong information provided to One Call Center	<input type="checkbox"/> Locating Practices Not Sufficient <input type="checkbox"/> Facility could not be found or located <input type="checkbox"/> Facility marking or location not sufficient <input type="checkbox"/> Facility was not located or marked <input type="checkbox"/> Incomplete facility records/images
<input type="checkbox"/> Excavation Practices Not Sufficient <input type="checkbox"/> Failure to maintain marks <input type="checkbox"/> Failure to support exposed facilities <input type="checkbox"/> Failure to use hand tools where required <input type="checkbox"/> Failure to test-hole (pot-hole) <input type="checkbox"/> Improper backfilling practices <input type="checkbox"/> Failure to maintain clearance <input type="checkbox"/> Other insufficient excavation practices	<input type="checkbox"/> Miscellaneous Root Causes <input type="checkbox"/> Abandoned facility <input type="checkbox"/> Deteriorated facility <input type="checkbox"/> Previous damage <input type="checkbox"/> Data Not Collected <input type="checkbox"/> Other

**Part J – Additional Comments**

\_\_\_\_\_

Visit DIRT at [www.cga-dirt.com](http://www.cga-dirt.com)



# Damage Investigations . . . a utility's perspective



## ✓ What a good damage data collection form should include (cont.)

### — Digital Camera

- Convenient and easy to share photos
- Take many photos
- Take “funnel” approach (wide/general to close-up) in documenting damage scene and damaged facilities
- Establish landmarks or points of reference
- Include photos of measurements
- Date/time stamp each photo taken

### — Sketch of damage area

- Repair crew will likely do it, but if unusual situation, you may want to draw a sketch for the file
- Will help you to remember later

# Damage Investigations ... a utility's perspective



## ✓ Collecting data — Laclede's F- 647 sample data (top half, page 1)



### REPORT OF DAMAGE TO LACLEDE GAS COMPANY PROPERTY

F-647 Rev. 5/2010 (pg 1 of 2)

REPORT NO.	INVOICE NO.	Work Order No.	Leak Control No.	Charge:	Non Dig-In:	Bill USIC:
		52068	1009124	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/>	<input type="checkbox"/>

Address of Damage: 1001 ENRIGHT AVE Town: ST LOUIS Grid: 135-23 District: CENTRAL

Date of Damage: 1-2-11 Time: 1150 Excavator Digup No. 110021234 Time Made Gas Safe: 1250

Damaging Party: BILL'S PLUMBING CO Damaged by:  Homeowner  Municipality  Contractor  Unknown

Address: 2000 ST CHARLES ROCK RD, ST ANN, MO 63074 Phone No. (314) 429-6700

Name of Damaging Party Personnel Contacted at Scene: B. SMITH

SAID on Scene?  Yes  No If Yes, Number of Buildings Checked/Relit: 1 SAID Labor on Back?  Yes  No

Damage to:  Main  Service  Meter Set Only Material: STL Size (Inches): 2 System:  LP  MP  IP  SF  TF  CF  PR

Laclede Facility Joint-Trenched with AT&T?  Yes  No Laclede Facility Joint-Trenched with Another Utility?  Yes  No

Property of Another Utility Damaged During this Incident?  Yes  No Name of Utility: \_\_\_\_\_

Laclede Repairs Permanent?  Yes  No C&M Emergency Locate No. (Prior to Making Repairs): 110021237

Excess Flow Valve (EFV) Found Installed?  Yes  No EFV Tripped?  Yes  No

Did Excavator Notify MO One Call Systems (MOCS) for a Locate?  Yes  No Was the Locate Request Marked?  Yes  No

MCOCS LOCATE REQUEST TICKET CONFIRMATION NO.	REQUESTED DATE	PERFORMED DATE	PERFORMED TIME	LOCATOR	METHOD OF LOCATE
<u>110020367</u>	<u>1-2-11</u>	<u>0800</u>	<u>1-2-11</u>	<u>0930</u>	<u>USIC</u>
					<u>TONED</u>

Were Markings Within 24 Inches of Damaged Facilities?  Yes  No Depth in Inches When Damaged: 30

Photos Taken?  Yes  No Camera No. C-599 Damaging Party Hand Dig Around Locates?  Yes  No

# Damage Investigations ... a utility's perspective



## ✓ Collecting data — Laclede's F- 647 sample data (bottom half, page 1)

TYPE OF WORK BEING PERFORMED WHEN FACILITY WAS DAMAGED (check appropriate box)					
<input type="checkbox"/> Pavement Replacement	<input type="checkbox"/> Road Work	<input type="checkbox"/> Electric/Power	<input type="checkbox"/> Telephone	<input type="checkbox"/> Fence	<input type="checkbox"/> Grading/Site Development
<input type="checkbox"/> Curb/Gutter	<input checked="" type="checkbox"/> Water	<input type="checkbox"/> Street Light	<input type="checkbox"/> Fiber Optic	<input type="checkbox"/> Home Yard Work	<input type="checkbox"/> Building Demolition
<input type="checkbox"/> Driveway/Sidewalk	<input type="checkbox"/> Sewer	<input type="checkbox"/> Pole Placement	<input type="checkbox"/> Cable TV	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Building Construction
<input type="checkbox"/> R.O.W. Maintenance	<input type="checkbox"/> Storm/Culvert	<input type="checkbox"/> Signs	<input type="checkbox"/> Vehicle	<input type="checkbox"/> Landscape/Retaining Wall	<input type="checkbox"/> Other (describe below)

DAMAGE MEDIA (check appropriate box)			
<input checked="" type="checkbox"/> Digging Equip	<input type="checkbox"/> Cutting Equip	<input type="checkbox"/> Vertical Boring	<input type="checkbox"/> Settlement
<input type="checkbox"/> Grading Equip	<input type="checkbox"/> Hand Equip	<input type="checkbox"/> Horizontal Boring	<input type="checkbox"/> Cave In
<input type="checkbox"/> Plowing Equip	<input type="checkbox"/> Vacuum Equip	<input type="checkbox"/> Stake/Form Pin	<input type="checkbox"/> Backfill
			<input type="checkbox"/> Erosion
			<input type="checkbox"/> Moving Vehicle
			<input type="checkbox"/> Other (describe below)

ROOT CAUSE DESCRIPTION (check appropriate box)			
<input type="checkbox"/> No Locate Request	<input type="checkbox"/> USIC Failed to Mark	<input type="checkbox"/> Laclede Failed to Mark	<input type="checkbox"/> Improper Installation
<input type="checkbox"/> Insufficient Locate Time	<input type="checkbox"/> USIC Mislocated	<input type="checkbox"/> Laclede Mislocated	<input type="checkbox"/> Depth Issues
<input type="checkbox"/> No 'no response' Call	<input type="checkbox"/> Incomplete USIC Locate	<input type="checkbox"/> Incomplete Laclede Locate	<input type="checkbox"/> Civic Improvement
<input checked="" type="checkbox"/> Inadequate Excavation Practices	<input type="checkbox"/> Inadequate Shoring	<input type="checkbox"/> Unknown	<input type="checkbox"/> Compromise Settlement
<input type="checkbox"/> No Pot-Hole/Hand Dig	<input type="checkbox"/> Excavation Outside Locate Area	<input type="checkbox"/> Incomplete/Inaccurate Records	<input type="checkbox"/> Miscommunication
<input type="checkbox"/> Stale Marks/Expired Locate	<input type="checkbox"/> Marks Altered by Construction	<input type="checkbox"/> Missing/Broken Trace Wire	<input type="checkbox"/> Unavoidable
<input type="checkbox"/> Wrong Locate Info Provided	<input type="checkbox"/> Other (describe below)	<input type="checkbox"/> Unlocatable Facility	<input type="checkbox"/> Homeowner

Remarks CONTRACTOR HIT MAIN WITH BACKHOE WHILE DOING AN EMERGENCY REPAIR ON A WATER SERVICE. WE REPAIRED THE MAIN WITH A 2 INCH CLAMP. ADDITIONAL PHOTOS BY D. ASH - CAMERA 5478.

[ ITEMS SHOWN IN BLUE COMPLETED BY LEAK TRUCK FOREMEN ]

[ ITEMS SHOWN IN RED COMPLETED BY C&M SUPERVISORS AND DAMAGE COORDINATORS ]

Supervisor on Scene? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Supervisor Initials: <b>DY</b>	Name of Damage Coordinator (DC) on Scene: <b>D. ASH</b>	Date/Time DC on Scene: <b>1-2-11 / 1230</b>
Prepared By: <b>F. MAY</b>	Approved By: <b>K. BROWN, S. BLUMM, D. ASH</b>		Date Approved: <b>1-3-11</b>

ATTACH COPY OF SKETCH FROM F-736

# Damage Investigations ... a utility's perspective



- ✓ Collecting data — Laclede's F- 647 sample data (top half, page 2)



F-647 Rev. 5/2010 (pg 2 of 2)

## C&M LABOR

Employee I.D.#	Time Received	Time Arrived	Time Completed	Hours		Cost/Hour	Total
				Regular	Overtime		
6898	1150	1250	1630	4.2	0.5	\$	\$
6544	1150	1250	1630	4.2	0.5		
<b>TOTAL C&amp;M LABOR CHARGES</b>							\$

## SAID LABOR

Employee I.D.#	Time Received	Time Arrived	Time Completed	Hours		Cost/Hour	Total
				Regular	Overtime		
8320	1150	1200	1550	4.0		\$	\$
<b>TOTAL SAID LABOR CHARGES</b>							\$

# Damage Investigations ... a utility's perspective



- ✓ Collecting data — Laclede's F- 647 sample data (bottom half, page 2)

## C&M / SAID VEHICLE & MECHANICAL EQUIPMENT

Vehicle No.	Hours	Rate/Hour	Total
4186	4.7	\$	\$
2133	4.0		
TOTAL VEHICLE & MECHANICAL EQUIPMENT CHARGES			\$

## MATERIALS

Material Description	Stock No.	Quantity	Cost/Unit	Total
2 INCH SS CLAMP	57231	1	\$	\$
TOTAL MATERIAL CHARGES				\$

TOTAL CHARGES FROM ABOVE			\$
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# Damage Investigations . . . a utility's perspective



- ✓ **What to do with the data collected**
  - **Store data in a central location (database)**
    - Include space for digital photos
      - Place photos of single event together in same folder
      - Standardize damage folder naming convention
      - (date of damage-damage location-district-person-etc.)
    - Allow for access to multiple users
  - **Use database as an archival resource**
    - Review past damages for trends
      - Prepare reports/statistics
    - Analyze data to determine what is wrong
      - Develop a strategy to fix problems found on your system
    - Create metrics to monitor/determine if you are making progress

# Damage Investigations ... a utility's perspective



- ✓ What to do with the data collected — Laclede's damage database

*Laclede Gas Facility Damage System*  
Claims Main Menu

Enter / Edit	Tickets / Invoices	Reports / Searches
Enter Claims Information	New Tickets from C.M.	Accounts Receivable
Edit Ticket	View/Print Damage Ticket	Claims Monthly Summary
Edit Range of Tickets	View/Print Invoice	Average Billing Days
Edit Contractor	Outstanding Invoice List	Damage Payments
Power Search Edit	Detailed Pending List	Dig-In Damage
Enter Post Damage Notes	Pending Invoice Tracker	Non Dig In Damage
		View/Print Post Damage Notes
Quit Application		

# Damage Investigations . . . a utility's perspective

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## ✓ Post damage follow-up work

### — Claims related activities

- Contact responsible party to discuss/resolve damage
- Respond to questions
- Document follow-up discussions/contacts
- Monitor billings, payments, arrangements

### — Damage data management

- Keep track of data
  - Maintain completion, accuracy and consistency
- Respond to questions from internal departments
  - Provide damage specific info
  - Provide detailed summaries/reviews

# Damage Investigations ... a utility's perspective



✓ Post damage follow-up work — sample query output available from database

	A	B	C	D	E	F	G	H	I
1	Date of Damage	Charge	House#	Street	Town	District	Work Performed	Root Cause	Contractor Name
2	6/1/2010	No	3650	EILEEN ANN DR	MEHLVILLE	S	Pavement Replacement	Civic Improvement	CITY MUNICIPAL SERVICES
3	6/1/2010	No	12843	PENNRIDGE DR	BRIDGETON	N	Pavement Replacement	Depth Issues	MARK CONSTRUCTION
4	6/1/2010	Yes		POINT DR & MANCHESTER RD	DES PERES	S	Signs	No Locate Request	MEDIA INC
5	6/2/2010	No	1501	WILD GOOSE RUN	ST CHARLES	STC	Pavement Replacement	Unavoidable	WESTERN CONCRETE CONST
6	6/2/2010	Yes	725	N MILL ST	FESTUS	Mn	Curb/Gutter	Stale Marks/Expired Locate	GOOD CONSTRUCTION INC
7	6/3/2010	No	1401	REDWOOD FOREST DR	MANCHESTER	S	Pavement Replacement	Depth Issues	MORE PAVING CO
8	6/3/2010	No	8341	SEVILLE AVE	UNIVERSITY CITY	N	Water	Other	CITIZENS WATER CO
9	6/4/2010	No	1938	TORERO LN	FLORISSANT	N	Pavement Replacement	Depth Issues	PAVEMENT SEALERS INC
10	6/5/2010	No	2307	MAXVILLE LN	ARNOLD	Mw	Home Yard Work	Homeowner	LOU GOTTS
11	6/5/2010	Yes	6444	FLAGSTONE CT	IMPERIAL	Mw	Fiber Optic	Incomplete USIC Locate	PAVEMENT RESTORERS
12	6/7/2010	No	11715	SAPPINGTON BARRACKS	SUNSET HILLS	S	Water	Incomplete/Inaccurate Records	CITIZENS WATER CO
13	6/7/2010	No	8013	MATHILDA AVE	AFFTON	S	Sewer	Unavoidable	HAPPY DAYS CONTRACTING
14	6/8/2010	Yes	1210	VANDEVENTER AVE	ST LOUIS	C	Fiber Optic	Other	UTILITY SERVICES
15	6/8/2010	Yes	9237	WALDORF DR	BELLE	N	Curb/Gutter	Stale Marks/Expired Locate	SANTA CONSTRUCTION INC
16	6/8/2010	Yes	2247	SPENCER AVE	OVERLAND	N	Sewer	USIC Mislocated	BILLS PLUMBING
17	6/9/2010	No	3	NOB HILL DR	SPANISH LAKE	N	Other	Compromise Settlement	PRODUCTION PIPELINE
18	6/9/2010	No	15830	KERSTON RIDGE CT	CHESTERFIELD	S	Fiber Optic	Unavoidable	BIG MANAGEMENT INC
19	6/9/2010	Yes	1227	BUCKNER AVE	PAGEDALE	N	Curb/Gutter	Inadequate Excavation Practices	WE EXCAVATE
20	6/9/2010	Yes	714	EDNA AVE	KIRKWOOD	S	Storm/Culvert	Inadequate Excavation Practices	LAKE TRENCHING
21	6/9/2010	Yes	151	IMPERIAL CROWN WAY	WILDWOOD	S	Cable TV	Incomplete USIC Locate	BEST CABLE CONSTRUCTION
22	6/9/2010	Yes	9201	CORAL DR	AFFTON	S	Curb/Gutter	No Pot-Hole/Hand Dig	MORE PAVING CO
23	6/10/2010	No	842	GARONNE DR	MANCHESTER	S	Pavement Replacement	Depth Issues	HAPPY DAYS CONTRACTING
24	6/10/2010	No	1	WYDOWN TERRACE	CLAYTON	S	Irrigation	Incomplete/Inaccurate Records	GROUNDWATER IRRIGATION
25	6/10/2010	No	9424	EDMUND DR	ST JOHN	N	Sewer	Incomplete/Inaccurate Records	BH BOBCAT SERVICE
26	6/10/2010	Yes	3900	GALLO DR	ST CHARLES COUNTY	STC	Pavement Replacement	Incomplete USIC Locate	SOUTHSIDE THRENCING
27	6/10/2010	Yes	2524	GREENBRIAR RIDGE	DES PERES	S	Building Construction	No Locate Request	VALUE CONTRACTING
28	6/10/2010	Yes	219	EISENHOWER DR	ST PETERS	STC	Telephone	No Locate Request	BILL SMITH
29	6/10/2010	Yes	9375	PINE AVE	BRENTWOOD	S	Sewer	No Pot-Hole/Hand Dig	XYZ UTILITY
30	6/10/2010	Yes	401	HEATHERBROOK LN	KIRKWOOD	S	Water	USIC Mislocated	MUNICIPAL WATER
31	6/11/2010	Yes	2101	HAAS AVE	MARYLAND HEIGHTS	N	Sewer	Inadequate Excavation Practices	MARK CONSTRUCTION
32	6/14/2010	Yes	10103	STONELL DR	LAKESHIRE	S	Sewer	Inadequate Shoring	ABC CONTRACTING INC
33	6/14/2010	Yes	11465	ESSEX AVE	MARYLAND HEIGHTS	N	Sewer	Marks Altered by Construction	MARK CONSTRUCTION
34	6/14/2010	Yes	9112	VASEL AVE	AFFTON	S	Pavement Replacement	No Pot-Hole/Hand Dig	MORE PAVING CO
35	6/15/2010	No	1501	WILD GOOSE RUN	ST PETERS	N	Pavement Replacement	Depth Issues	HAPPY DAYS CONTRACTING

# Damage Investigations ... a utility's perspective



## ✓ Measuring effectiveness

### — Items to track / measure

- Number of dig-in damages
  - 54% reduction since FY01
- Damage rate (dig-ins/1,000 locates)
  - 61% reduction since FY01
- Percent 'no-call' dig-ins
- Average number of days to complete damage investigations
- Average number of days to invoice a billable damage
- Average number of days to collect on a billable damage

# Damage Investigations ... a utility's perspective



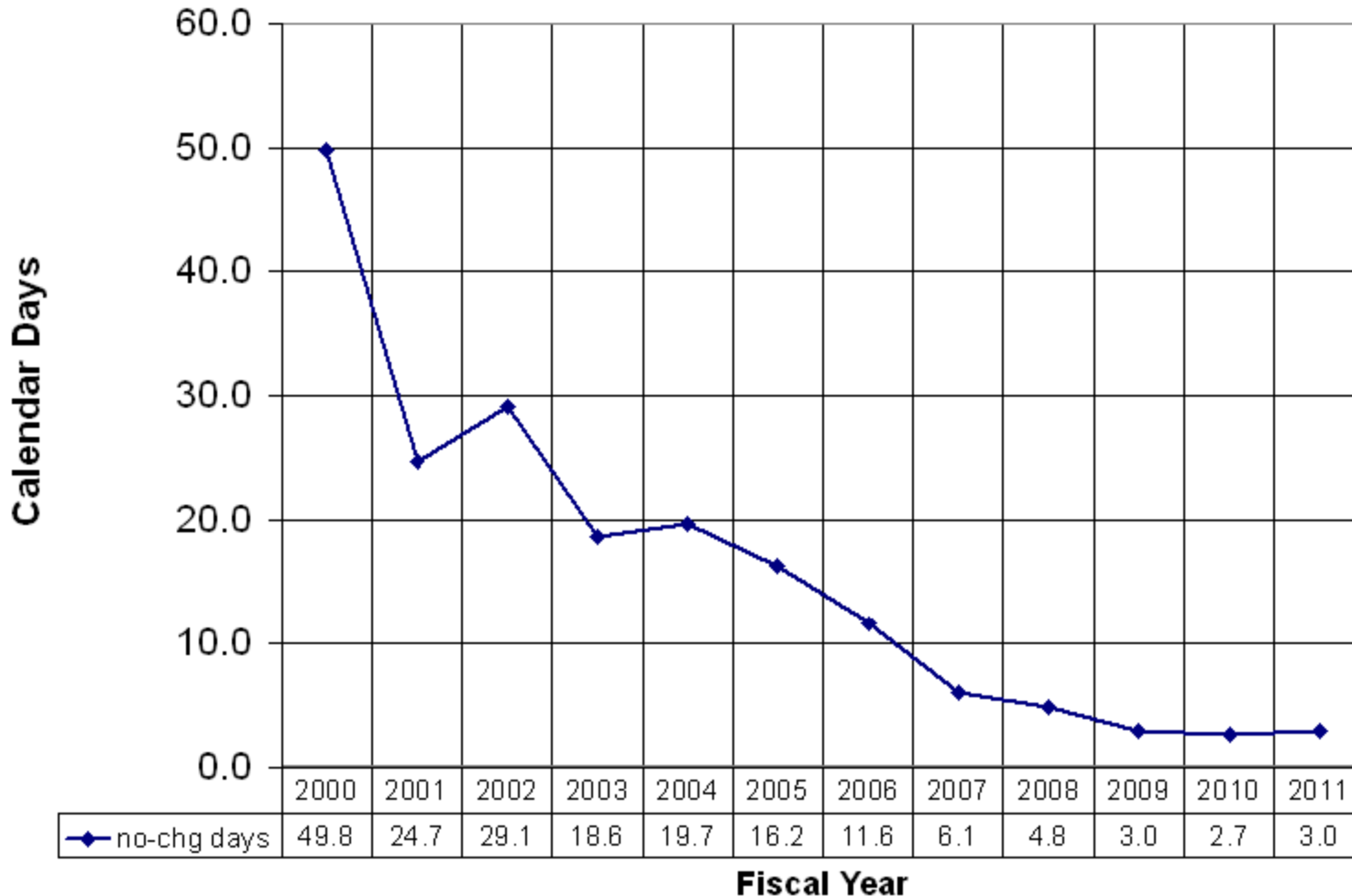
✓ % 'no call' damages to total dig-in damages — 58% improvement



# Damage Investigations ... a utility's perspective



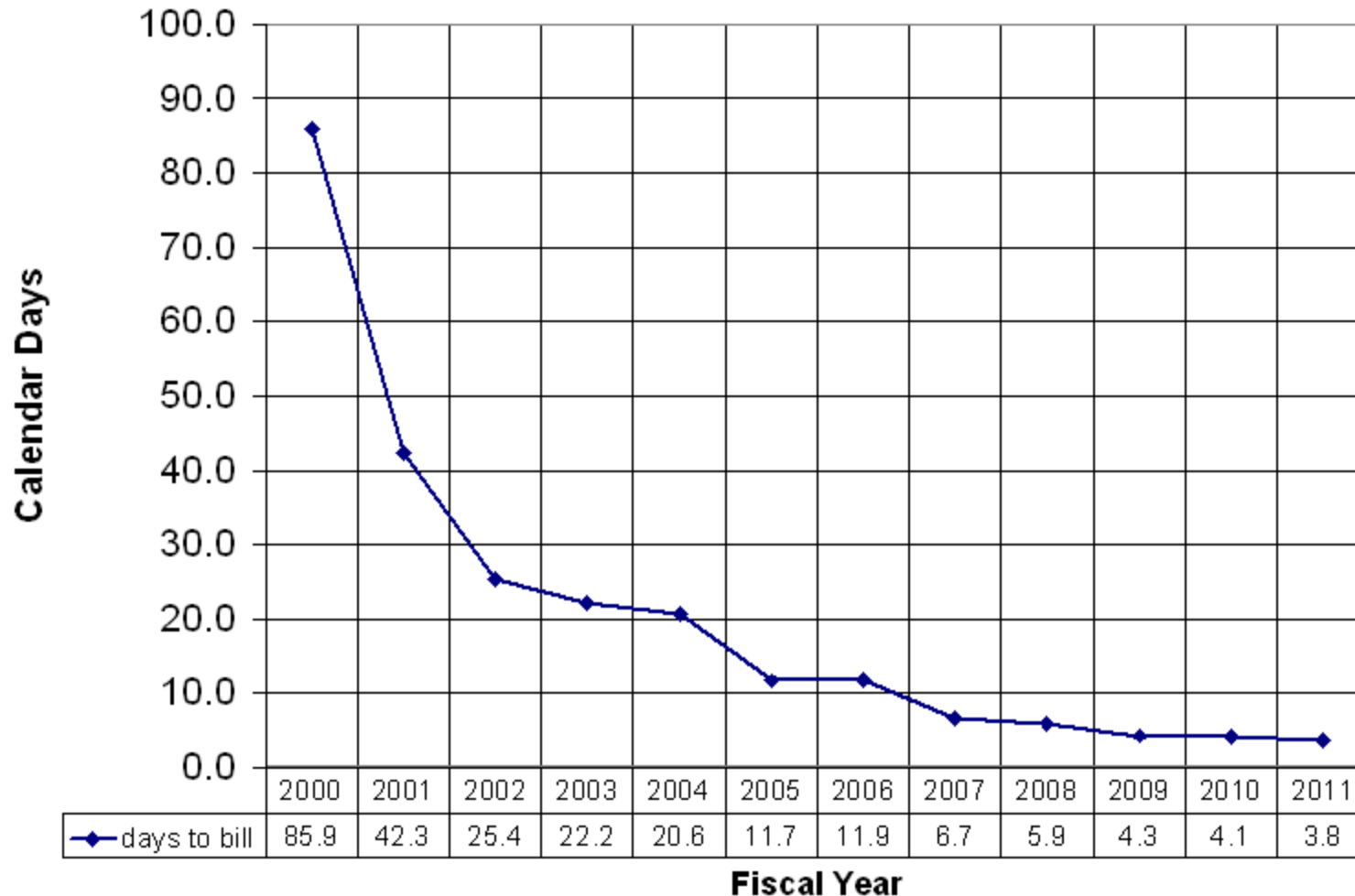
- ✓ Average # of days to complete damage investigation — 94% improvement



# Damage Investigations ... a utility's perspective



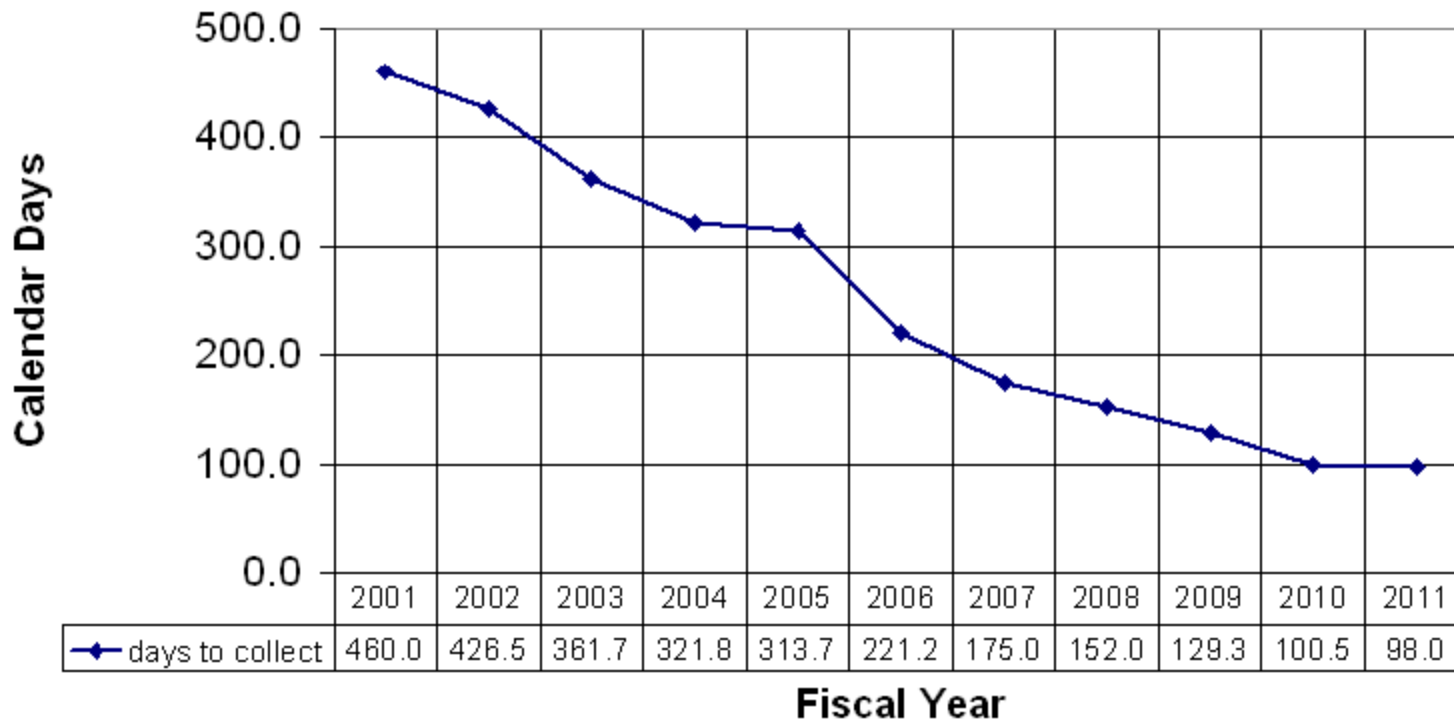
- ✓ Average # of days to invoice a billable damage — 96% improvement



# Damage Investigations ... a utility's perspective



- ✓ Average # of days to collect on a billable damage — 79% improvement



# Damage Investigations . . . a utility's perspective



## ✓ Excavator's point-of-view

- **Laclede is one of the larger excavators in the St Louis area**
  - We call in about 1,400 locate tickets each month
    - New main and service installation work
    - Relocation projects
    - Maintenance and leak repair
  - We understand excavator issues/frustration
    - Timing to get work done
    - Encountering underground facilities of others regularly
    - Dealing with claims/cost issues
  
- **Due to overall success of third-party investigation program**
  - New initiative in FY09 to investigative C&M excavation damages
    - Damage data collection form F-632A updated/revised

# Damage Investigations ... a utility's perspective



## ✓ Excavator's point-of-view — Laclede's damage data collection form F - 632A

### LACLEDE GAS COMPANY REPORT OF PROPERTY DAMAGE

F-632A Rev 9/2009  
(page 1 of 2)

Damage No:	Work Order No:	Laclede to be Billed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	Utility Damaged? <input type="checkbox"/> Yes <input type="checkbox"/> No	Information Only <input type="checkbox"/> Yes <input type="checkbox"/> No
Damage Address:		Town:		
Damage Date/Time:		Grid:		
Name of Foreman on Scene:		District:		
Name of Supervisor Notified:		Notified Date/Time:		
Name of Damage Coordinator Notified:		Notified Date/Time:		
Property Damaged: <input type="checkbox"/> Electric <input type="checkbox"/> Telecommunications <input type="checkbox"/> Water <input type="checkbox"/> Natural Gas <input type="checkbox"/> Steam <input type="checkbox"/> Other (describe)				
<input type="checkbox"/> Traffic/Lighting <input type="checkbox"/> Cable TV <input type="checkbox"/> Sewer <input type="checkbox"/> Liquids Line <input type="checkbox"/> Unknown				
Type of Facility: <input type="checkbox"/> Transmission <input type="checkbox"/> Main/Distribution <input type="checkbox"/> Service/Drop <input type="checkbox"/> Unknown <input type="checkbox"/> Private				
<input type="checkbox"/> 0-25 Pair <input type="checkbox"/> 25-100 Pair <input type="checkbox"/> 101-500 Pair <input type="checkbox"/> 501+ Pair <input type="checkbox"/> Other (describe below)				
Utility Name:	Name of Utility Rep on Scene:		Phone No:	
Was MO One Call Systems (MOCS) Notified of the Dig-Up Damage? <input type="checkbox"/> Yes <input type="checkbox"/> No				
MOCS Dig-Up No:				
Did Laclede Contact MOCS for a Locate Request for this Work? <input type="checkbox"/> Yes <input type="checkbox"/> No				
MOCS Locate Request No:	Requested: Date / Time	Work Started: Date / Time		
Was This Request Marked? <input type="checkbox"/> Yes <input type="checkbox"/> No	Was a 'no response' Call Made? <input type="checkbox"/> Yes <input type="checkbox"/> No	MOCS 'no response' No:		
Were the Marks Within 24 Inches of the Damaged Facility? <input type="checkbox"/> Yes <input type="checkbox"/> No		Depth in Inches Where Damaged:		
Photos Taken? <input type="checkbox"/> Yes <input type="checkbox"/> No	Camera No:	Did Laclede Hand Dig Around Locates? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Name of Responding Utility Locator on Scene:			Arrival Date/Time:	
Locator Remark(s):				
<b>TYPE OF WORK</b>				
<input type="checkbox"/> Responding to Dig-Up <input type="checkbox"/> Leak Repair <input type="checkbox"/> Main Installation <input type="checkbox"/> Service Installation <input type="checkbox"/> Pavement Restoration <input type="checkbox"/> General Maintenance <input type="checkbox"/> Curb Box Repair <input type="checkbox"/> Main Insertion <input type="checkbox"/> Service Insertion <input type="checkbox"/> Replacement/Relocation <input type="checkbox"/> Bar-Hole/Leak Survey <input type="checkbox"/> CPI/Anode Work <input type="checkbox"/> Main Abandonment <input type="checkbox"/> Service Abandonment <input type="checkbox"/> Other (describe below)				
<b>TYPE OF MATERIAL</b>				
<input type="checkbox"/> Cast Iron <input type="checkbox"/> Copper <input type="checkbox"/> Plastic <input type="checkbox"/> Steel <input type="checkbox"/> Other (describe below)				
<b>DAMAGE MEDIA</b>				
<input type="checkbox"/> Digging Equipment <input type="checkbox"/> Hand Equipment <input type="checkbox"/> Vertical Boring <input type="checkbox"/> Settlement/Cave In <input type="checkbox"/> Stake/Form Pin <input type="checkbox"/> Grading Equipment <input type="checkbox"/> Cutting Equipment <input type="checkbox"/> Horizontal Boring <input type="checkbox"/> Backfilling <input type="checkbox"/> Probe Rod/Bar Hole <input type="checkbox"/> Vacuum Equipment <input type="checkbox"/> Ploving Equipment <input type="checkbox"/> Marker Post <input type="checkbox"/> Erosion <input type="checkbox"/> Other (describe below)				
<b>ROOT CAUSE</b>				
<input type="checkbox"/> No Locate Request <input type="checkbox"/> Inadequate Shoring <input type="checkbox"/> Failed to Mark <input type="checkbox"/> Abandoned Facility <input type="checkbox"/> Insufficient Locate Time <input type="checkbox"/> Excavation Outside Locate Area <input type="checkbox"/> Facility Mislocated <input type="checkbox"/> Deteriorated Facility <input type="checkbox"/> No 'no response' Call <input type="checkbox"/> Marks Altered by Construction <input type="checkbox"/> Incomplete Locate <input type="checkbox"/> Bad Installation <input type="checkbox"/> Inadequate Excavation Practices <input type="checkbox"/> Stale Marks/Expired Locate <input type="checkbox"/> Miscommunication <input type="checkbox"/> Depth Issues <input type="checkbox"/> No Pot-Hole/Hand Dig <input type="checkbox"/> Wrong Locate Info Provided <input type="checkbox"/> Compromise Settlement <input type="checkbox"/> Unavoidable <input type="checkbox"/> Other (describe below) <input type="checkbox"/> Previous Damage by Other				
COMMENTS:				

### LACLEDE GAS COMPANY REPORT OF PROPERTY DAMAGE

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(page 2 of 2)

Name of Occupant:	Phone No:	<input type="checkbox"/> Tenant <input type="checkbox"/> Owner
Name of Owner:	Owner's Address:	
Hours Required to Correct:	Repaired By:	
Material:		
PERSONS INJURED: (If more than two, list in COMMENTS)		
Name of Injured Person		Age
Sex		Injuries
Hospital		Taken to: Home
1 _____		<input type="checkbox"/> <input type="checkbox"/>
2 _____		<input type="checkbox"/> <input type="checkbox"/>
Any Witnesses? <input type="checkbox"/> Yes <input type="checkbox"/> No (If Yes, list name, address and phone number in COMMENTS)		
Condition of Property Before Replacement or Repairs Started:		
Sidewalk Cracked <input type="checkbox"/> Yes <input type="checkbox"/> No		Window Glass Broken <input type="checkbox"/> Yes <input type="checkbox"/> No
Water Service Leaking <input type="checkbox"/> Yes <input type="checkbox"/> No		Parked or Nearby Vehicles Damaged <input type="checkbox"/> Yes <input type="checkbox"/> No
Foundation Cracked <input type="checkbox"/> Yes <input type="checkbox"/> No		Other:
Occupant Advised of Damage and Above Conditions: <input type="checkbox"/> Yes <input type="checkbox"/> No	Owner Advised of Damage and Above Conditions: <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>PLEASE PROVIDE A SKETCH OF THE DAMAGE SCENE IN THE SPACE BELOW:</b>		
Report Initiated By:	Reviewed by Foreman/Date:	
Name of Damage Coordinator on Scene:	Reviewed by Dist Supt/Date:	

# Damage Investigations ... a utility's perspective



## ✓ Excavator's point-of-view — Laclede's F - 632A sample data

### LACLEDE GAS COMPANY REPORT OF PROPERTY DAMAGE

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Damage No:	Work Order No: 52062	Laclede to be Billed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown	Utility Damaged? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Information Only <input type="checkbox"/> Yes <input type="checkbox"/> No
Damage Address: 123 WATSON RD		Town: WEBSTER GROVES		
Damage Date/Time: 1-12-11 / 1405		Grid: 144-66		
Name of Foreman on Scene: V. PERALEZ		District: SOUTH		
Name of Supervisor Notified: T. HILL		Notified Date/Time: 1-12-11 / 1412		
Name of Damage Coordinator Notified: B. MURRAY		Notified Date/Time: 1-12-11 / 1450		
Property Damaged: <input type="checkbox"/> Electric <input checked="" type="checkbox"/> Telecommunications <input type="checkbox"/> Water <input type="checkbox"/> Natural Gas <input type="checkbox"/> Steam <input type="checkbox"/> Other (describe)				
Type of Facility: <input type="checkbox"/> Transmission <input type="checkbox"/> Main/Distribution <input checked="" type="checkbox"/> Service/Drop <input type="checkbox"/> Unknown <input type="checkbox"/> Private				
Utility Name: ACME TELECOM				
Name of Utility Rep on Scene: K. JONES				
Phone No: (314) 555-0100				
Was MO One Call Systems (MOCS) Notified of the Dig-Up Damage? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
MOCS Dig-Up No: 110120314				
Did Laclede Contact MOCS for a Locate Request for this Work? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
MOCS Locate Request No: 110071234				
Requested Date / Time: 1-7-11 / 0915				
Work Started Date / Time: 1-12-11 / 1245				
Was This Request Marked? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Was a 'no response' Call Made? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
MOCS 'no response' No: 9				
Were the Marks Within 24 Inches of the Damaged Facility? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Depth in Inches Where Damaged: 9				
Photos Taken? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Camera No: S-1143				
Did Laclede Hand Dig Around Locates? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Name of Responding Utility Locator on Scene: T. JAMES				
Arrival Date/Time: 1-12-11				
Locator Remark(s): PHONE DROP HARD TO TONE				
<p><b>TYPE OF WORK</b></p> <input type="checkbox"/> Responding to Dig-Up <input checked="" type="checkbox"/> Leak Repair <input type="checkbox"/> Main Installation <input type="checkbox"/> Service Installation <input type="checkbox"/> Pavement Restoration <input type="checkbox"/> General Maintenance <input type="checkbox"/> Curb Box Repair <input type="checkbox"/> Main Insertion <input type="checkbox"/> Service Insertion <input type="checkbox"/> Replacement/Relocation <input type="checkbox"/> Bar-Hole/Leak Survey <input type="checkbox"/> CPI/Aside Work <input type="checkbox"/> Main Abandonment <input type="checkbox"/> Service Abandonment <input type="checkbox"/> Other (describe below)				
<p><b>TYPE OF MATERIAL</b></p> <input type="checkbox"/> Cast Iron <input checked="" type="checkbox"/> Copper <input type="checkbox"/> Plastic <input type="checkbox"/> Steel <input type="checkbox"/> Other (describe below)				
<p><b>DAMAGE MEDIA</b></p> <input type="checkbox"/> Digging Equipment <input checked="" type="checkbox"/> Hand Equipment <input type="checkbox"/> Vertical Boring <input type="checkbox"/> Settlement/Cave In <input type="checkbox"/> Stake/Form Pin <input type="checkbox"/> Grading Equipment <input type="checkbox"/> Cutting Equipment <input type="checkbox"/> Horizontal Boring <input type="checkbox"/> Backfilling <input type="checkbox"/> Probe Rod/Bar Hole <input type="checkbox"/> Other (describe below) <input type="checkbox"/> Vacuum Equipment <input type="checkbox"/> Piling Equipment <input type="checkbox"/> Marker Post <input type="checkbox"/> Erosion <input type="checkbox"/> Other (describe below)				
<p><b>ROOT CAUSE</b></p> <input type="checkbox"/> No Locate Request <input type="checkbox"/> Inadequate Shoring <input type="checkbox"/> Failed to Mark <input type="checkbox"/> Abandoned Facility <input type="checkbox"/> Insufficient Locate Time <input type="checkbox"/> Excavation Outside Locate Area <input checked="" type="checkbox"/> Facility Mislocated <input type="checkbox"/> Deteriorated Facility <input type="checkbox"/> No 'no response' Call <input type="checkbox"/> Marks Altered by Construction <input type="checkbox"/> Incomplete Locate <input type="checkbox"/> Bad Installation <input type="checkbox"/> Inadequate Excavation Practices <input type="checkbox"/> Stake Marks/Expired Locates <input type="checkbox"/> Miscommunication <input type="checkbox"/> Depth Issues <input type="checkbox"/> No Pot-Hole/Hand Dig <input type="checkbox"/> Wrong Locate Info Provided <input type="checkbox"/> Compromise Settlement <input type="checkbox"/> Unavoidable <input type="checkbox"/> Other (describe below) <input type="checkbox"/> Previous Damage by Other				
<p>COMMENTS: WHILE EXCAVATING NEAR RISER WE DAMAGED THE PHONE DROP TO THE ABOVE ADDRESS. THE PHONE LINE WAS MARKED SEVEN FEET FROM RISER, NOWHERE NEAR OUR EXCAVATION. THE PHONE LINE WAS DAMAGED WITH A SHOVEL. ADDITIONAL PHOTOS BY MURRAY - CAMERA 5760. SEE SKETCH ON BACK.</p>				

### LACLEDE GAS COMPANY REPORT OF PROPERTY DAMAGE

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Name of Occupant:	Phone No:	<input type="checkbox"/> Tenant <input type="checkbox"/> Owner																		
Name of Owner:	Owner's Address:																			
Hours Required to Correct:	Repaired By:																			
Material:																				
PERSONS INJURED: (if more than two, list in COMMENTS)																				
<table border="1"> <thead> <tr> <th>Name of Injured Person</th> <th>Age</th> <th>Sex</th> <th>Injuries</th> <th>Hospital</th> <th>Home</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>			Name of Injured Person	Age	Sex	Injuries	Hospital	Home	1				<input type="checkbox"/>	<input type="checkbox"/>	2				<input type="checkbox"/>	<input type="checkbox"/>
Name of Injured Person	Age	Sex	Injuries	Hospital	Home															
1				<input type="checkbox"/>	<input type="checkbox"/>															
2				<input type="checkbox"/>	<input type="checkbox"/>															
Any Witnesses? <input type="checkbox"/> Yes <input type="checkbox"/> No (If Yes, list name, address and phone number in COMMENTS)																				
Condition of Property Before Replacement or Repairs Started:																				
<table border="1"> <tr> <td>Sidewalk Cracked</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>Window Glass Broken</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Water Service Leaking</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>Parked or Nearby Vehicles Damaged</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> </tr> <tr> <td>Foundation Cracked</td> <td><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td>Other:</td> <td></td> </tr> </table>			Sidewalk Cracked	<input type="checkbox"/> Yes <input type="checkbox"/> No	Window Glass Broken	<input type="checkbox"/> Yes <input type="checkbox"/> No	Water Service Leaking	<input type="checkbox"/> Yes <input type="checkbox"/> No	Parked or Nearby Vehicles Damaged	<input type="checkbox"/> Yes <input type="checkbox"/> No	Foundation Cracked	<input type="checkbox"/> Yes <input type="checkbox"/> No	Other:							
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Occupant Advised of Damage and Above Conditions: <input type="checkbox"/> Yes <input type="checkbox"/> No																				
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PLEASE PROVIDE A SKETCH OF THE DAMAGE SCENE IN THE SPACE BELOW:																				
Report Initiated By: V. PERALEZ	Reviewed by Foreman/Date: T. HILL / 1-13-11																			
Name of Damage Coordinator on Scene: B. MURRAY	Reviewed by Dist Supt/Date: W. SOMERS / 1-14-11																			

# Damage Investigations ... a utility's perspective



## ✓ Questions

## ✓ Contact Information

— Bo Matisziw

Superintendent, Damage Prevention

- Laclede Gas Company
- 3950 Forest Park Avenue
- St. Louis, MO 63108
- (314) 658-5552 Office
- (314) 575-5353 Cell
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