Pipeline Damage Prevention Programs

A proactive approach to reduce methane emissions

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Rick Kottemann

Supt. Environmental Engineering Services

Laclede Gas

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Background Information

- Largest LDC in Missouri, serving primarily the St. Louis metro area
  - 632,000 customers
  - 16,000 miles of mains & service lines
- Year 2000 third-party damages to Laclede underground facilities were averaging 4-5 times each workday
  - 20% to mains, 80% to service lines
  - Dig-in issues:
    - Safety & reliability
    - Customer service disruptions / inconvenience
    - Repair cost / crew time
    - Gas loss

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History of the Damage Prevention Department

- In 2001, Laclede voluntarily created a new department within Operations to specifically address third-party dig-in issues
  - Consists of:
    - Department Manager
    - 3 District Damage Coordinators
  - Department coordinates closely with:
    - Construction & Maintenance (C & M) Department
    - Engineering Department
    - Claims Department
- Goals of this new approach:
  - More proactively manage risk of damage from third-party excavators
  - Provide for more uniform / consistent data gathering
  - Improve communications between excavators and the company

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Damage Prevention Department Responsibilities

- **Investigate**
  - Interview witnesses / participants to the damage
  - Gather and document accurate, relevant damage data
  - Identify root cause(s) of damages
  - Expedite the resolution of responsibility for damages / charges
  - Follow-up / track status of billable damages
  - Appear as witness for Claims Department in litigated cases
- **Communicate**
  - Minimize contractor damages through outreach and education
    - Focus on excavators who chronically hit facilities
    - Participate at excavator safety meetings
  - Network with organizations having a common interest in underground utility safety and damage prevention
  - Raise public awareness about underground utility damage
    - Promote damage prevention / safety awareness messages

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Program Benefits / Lessons Learned

- **Excavators:**
  - Assess responsibility and resolve billable damages promptly
  - Appreciate having a designated company point-of-contact person
  - Faster Laclede response means less down time for them
  - Appreciate our willingness to readily accept responsibility for damages outside the control of the excavator (non-billable)
- **Laclede:**
  - Substantially improved damage investigation procedures
  - Greatly accelerated payment collection system
  - Improved relationship with excavators
- **Regulatory / Governmental:**
  - Improvements to Missouri One Call System Legislation
  - “Call Before You Dig” message being widely disseminated
  - More aggressive enforcement (Missouri Attorney General letters)

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Results

- Pipeline Damage Prevention and Laclede Gas Co. are strongly linked in the minds of Missouri's excavators and state pipeline safety regulators
- Proactive damage prevention awareness efforts have fostered a spirit of cooperation with excavators and have yielded striking positive trends
- Since inception of the program:
  - Annual number of facility "Locates" has increased 35%
  - 33% reduction in dig-in damages
  - "No call" damages reduced from 39% to 22%

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Results

- **Internal company impacts:**
  - **Less time spent repairing dig-in damages**
  - **Lowering damages annually - now part of corporate goal setting**
  - **Billing, Payments & Collections**
    - **90% reduction in time to process billable damages**
    - **64% reduction in time to receive payment for billable damages**
  - **Learn from damages / continuously improve operational procedures to be a better facility owner (and excavator)**

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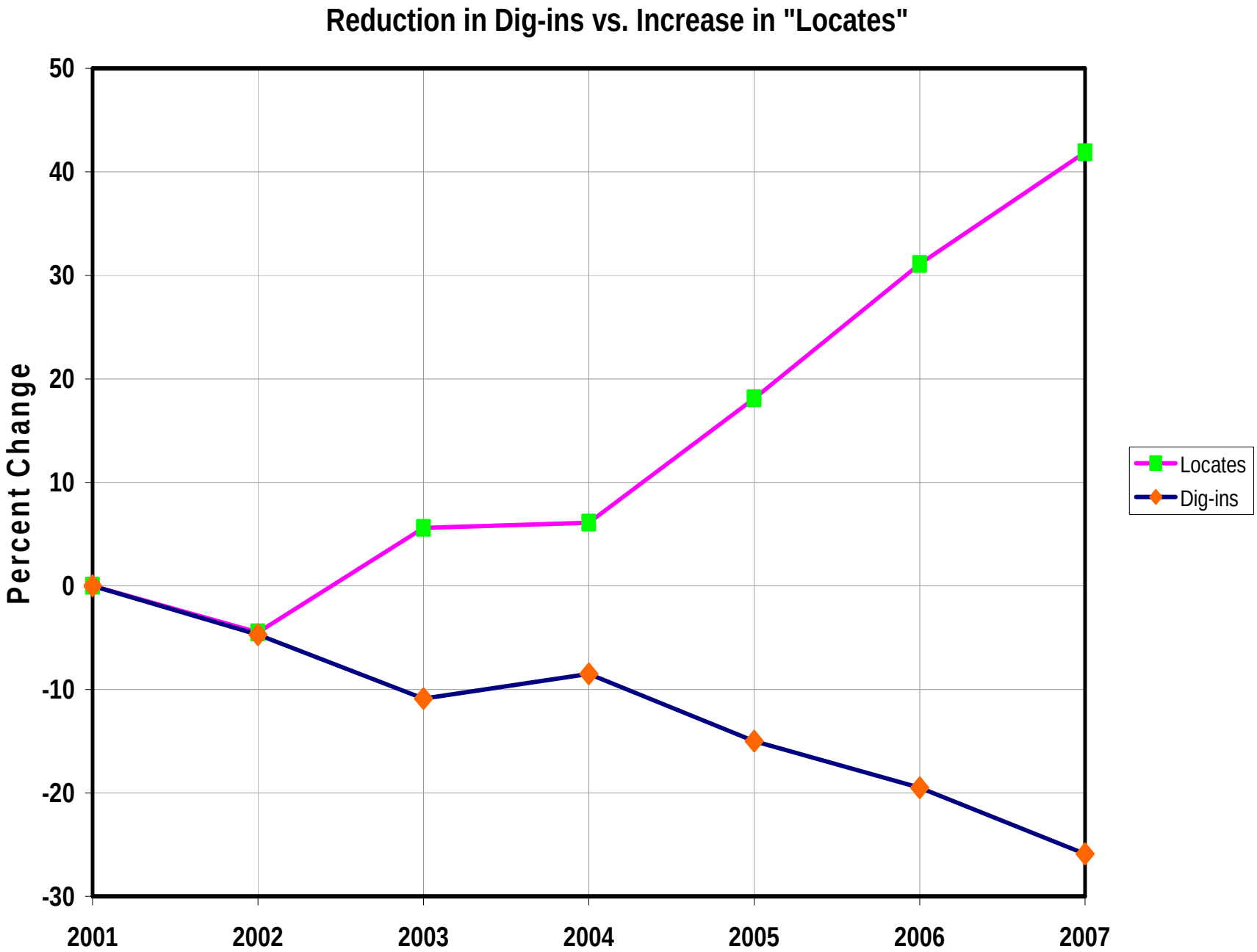
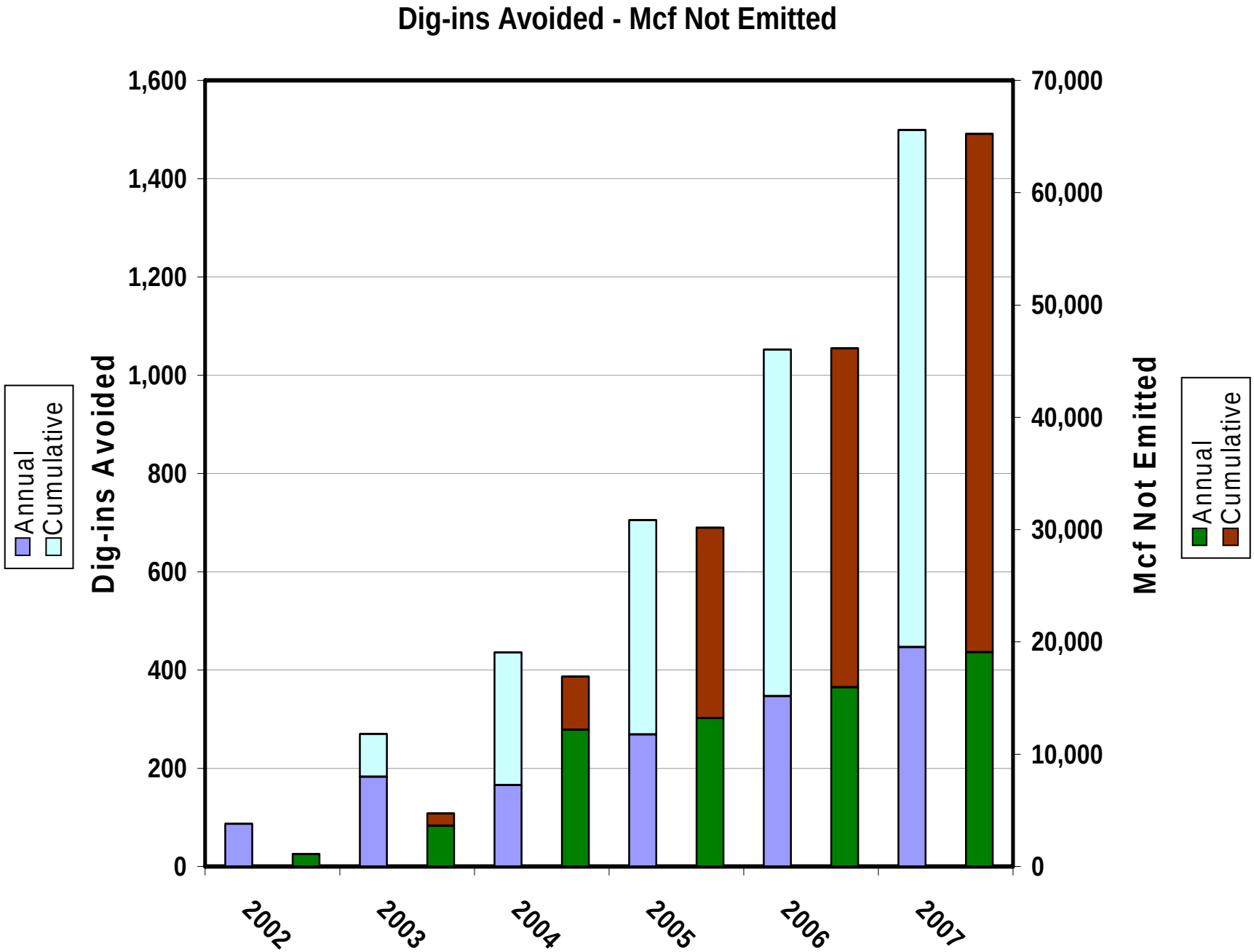
Methane Emission Reductions

- Quantify mcf / dig-in (Calendar Year data)
  - **Analyzed approximately 7,000 actual dig-ins from 2002-07**
  - **Grouped by pipe diameter, material and operating pressure**
  - **Average duration of blowing gas, by group**
  - **Varied size of rupture from 1/10 dia. to full-open**
  - **Mains – Average 193 mcf / dig-in**
  - **Service lines – Average 12 mcf / dig-in**
- **Emissions avoided based on actual number of dig-ins annually vs. projected damage rate in absence of the Damage Prevention Program**
- **Total 65,246 mcf not emitted for period 2002 through 2007**


Reduction in Dig-ins vs. Increase in "Locates"
Percent Change
50
40
30
20
10
0
-10
-20
-30
2001
2002
2003
2004
2005
2006
2007
Locates
Dig-ins


Dig-ins Avoided - Mcf Not Emitted
Dig-ins Avoided
1,600
1,400
1,200
1,000
800
600
400
200
0
Mcf Not Emitted
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Annual
Cumulative
Annual
Cumulative
2002
2003
2004
2005
2006
2007

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Conclusion

- **Laclede's approach has been to:**
  - **Communicate and cooperate with excavators**
    - **Be fair, consistent and even-handed**
  - **Network with others interested in underground damage prevention**
  - **Work with state and local regulatory bodies to protect underground facilities and promote safety on a voluntary basis**
  - **Pursue legislative support and/or enforcement changes when necessary**
  - **Learn from damage events to make internal operational corrections / improvements**
  - **Reduce methane emissions through reduced dig-ins**