

The Pipeline Industry Had an Idea . . .

Learning from PPTS 1999-2005

Why Should You Care?

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Your CEO Cares

Your States Care

PHMSA Cares

Presented to

The Industry Cares

The Data Mining Team's PPTS Workshop

Your IMP Manager Cares

Your Cities Care

Allegro Energy Consulting

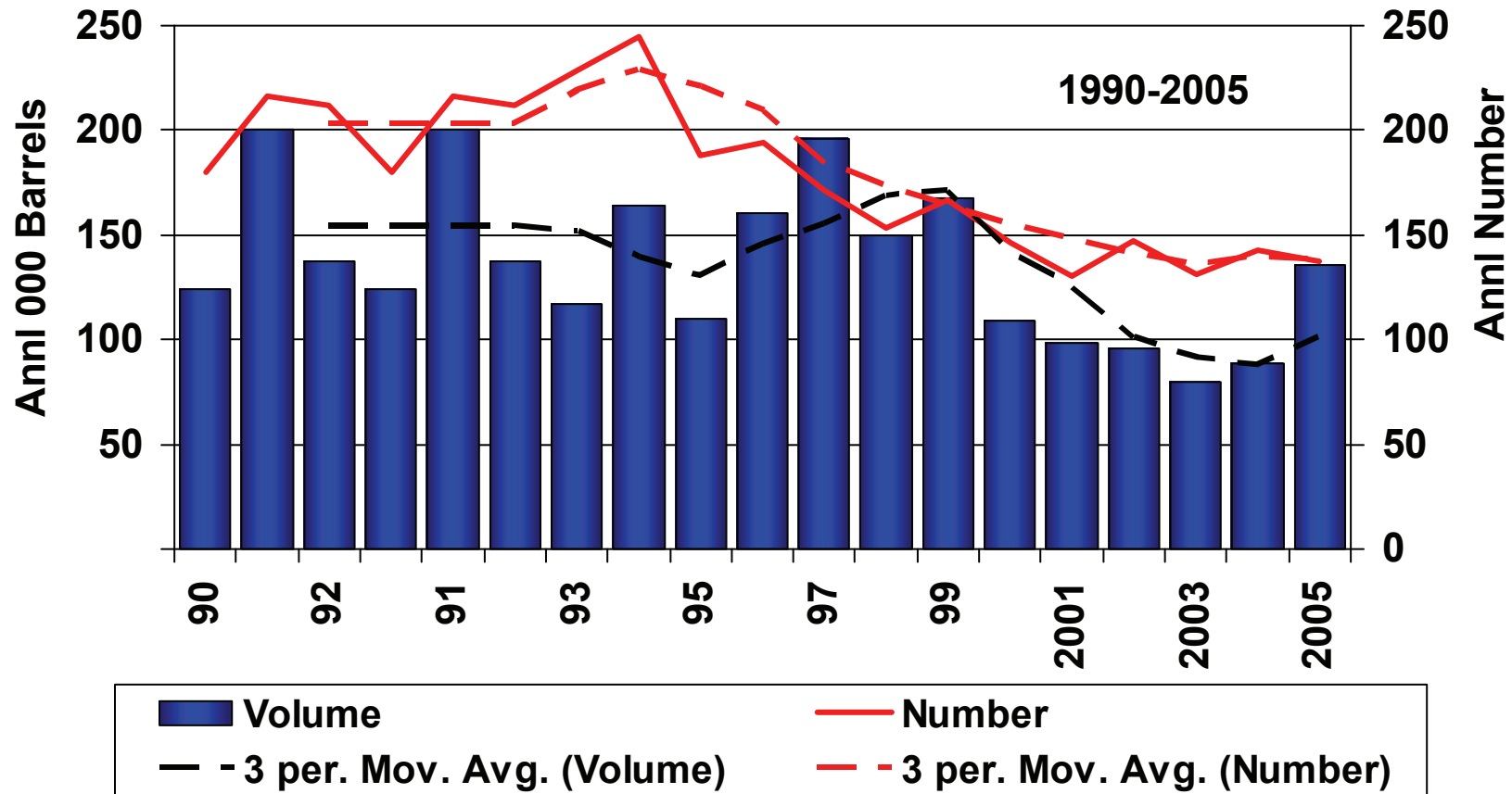
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- ✱ **Why the Pipeline Performance Tracking System**
- ✱ **What have we learned?**
- ✱ **How do we learn from it?**
- ✱ **The basics of the data**
- ✱ **Some new lessons – and surprises – from the data**
- ✱ **Some requests (begging?)**

The Oil Pipeline Spill Record: What the Public Sees

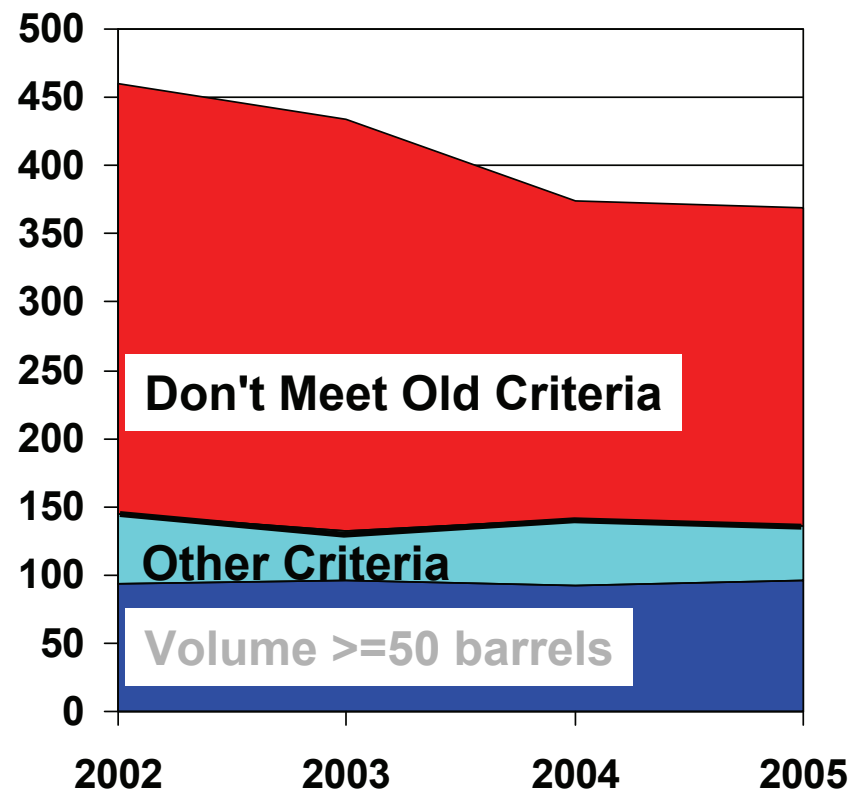


Source: PHMSA Form F 7000-1, from http://ops.dot.gov/stats/lq_sum.htm.
Results for 2002 - 2005 reflect incidents reportable under criteria in place prior to February 2002, i.e., 50 bbls liquid, 5 bbls HVL, death, injury, fire, explosion, \$50K damages.

FAQ: Why Don't DOT Release Data Show the Same Decline as PPTS

- ✱ "Pipeline Statistics" page
- ✱ Only those releases that meet the pre-2002 criteria: ≥ 50 barrels, e.g.
- ✱ Larger spills haven't declined sharply in PPTS either.
- ✱ Like PPTS, DOT shows a decline in the smaller spills.
- ✱ Some differences in asset coverage, maintenance exclusion

Number of Incidents, 2002-2005

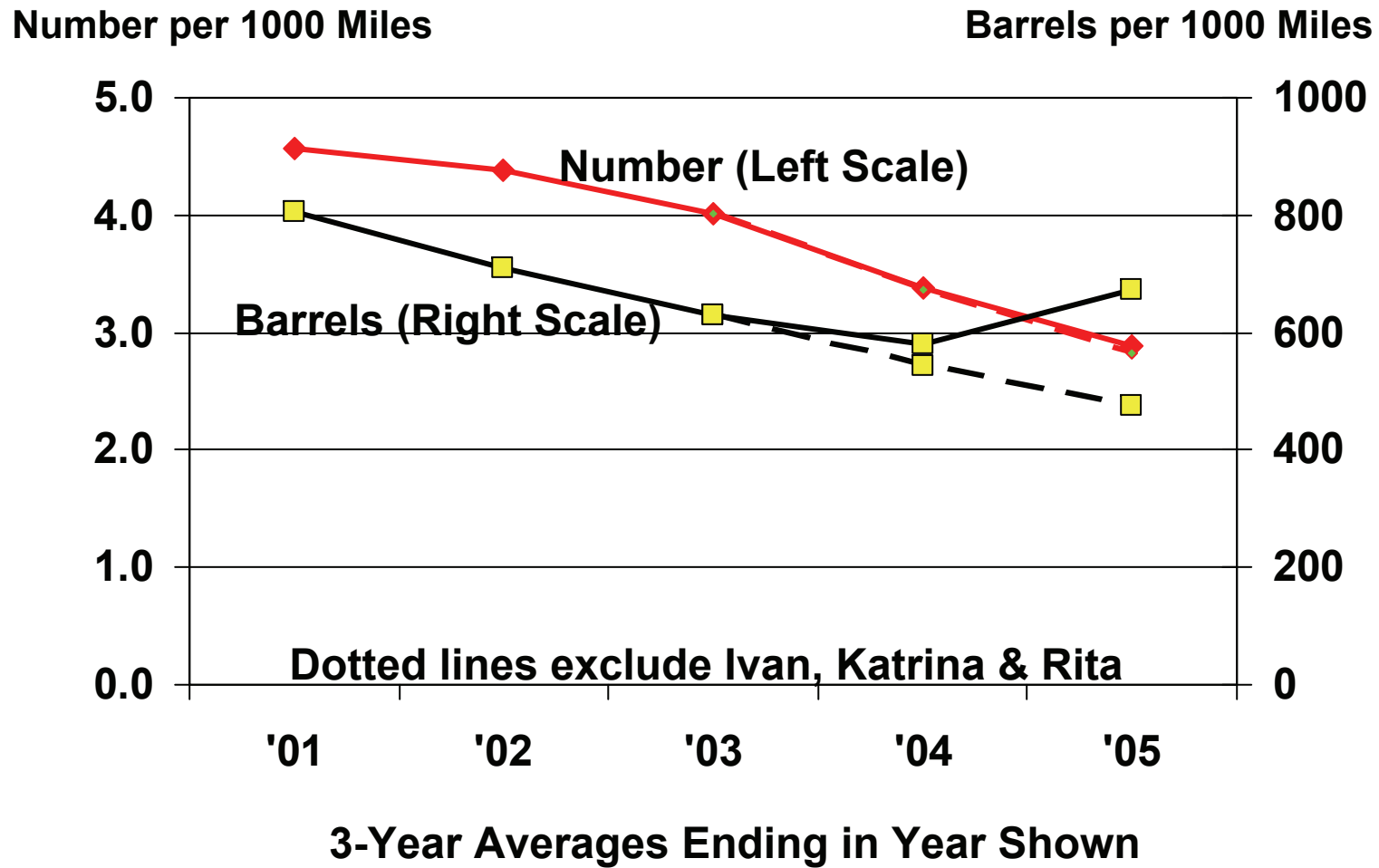


What is the Pipeline Performance Tracking System?

- ✱ **“PPTS”**: voluntary; open to all liquids pipeline operators
- ✱ **No membership req’d, no fee imposed**
- ✱ **Industry-run and maintained**
- ✱ **Collecting info since 1999**
- ✱ **Records spills of 5 gallons or more on land, all spills to water (compare old OPS @ 50 barrels)**
- ✱ **In 2005, PPTS participants operated about 85% of OPS miles and total barrel-miles**

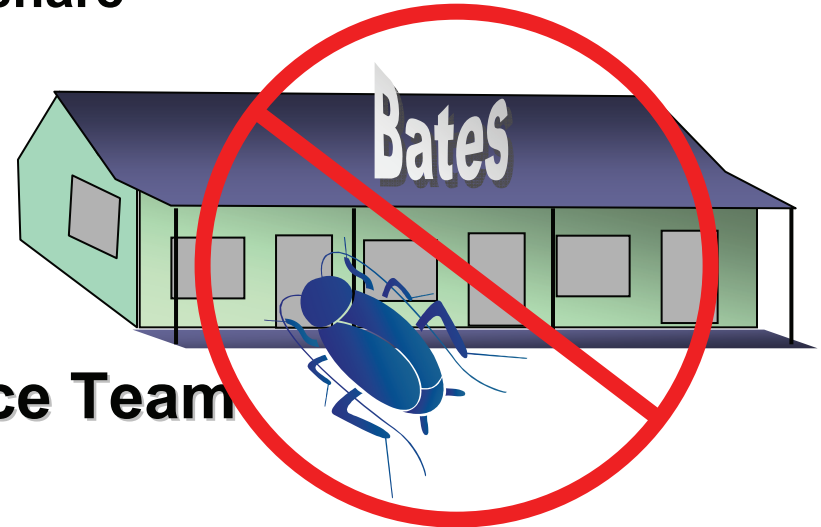
1. Measure 2. Learn 3. Manage 4. Improve

The PPTS Record Per Mile, 1999-2005



Data Mining Highlights

- ✱ **Operator Advisories (www.api.org/ppts)**
 - ➔ Causes/locations with a large share
 - ➔ Consequences
 - ➔ New perspective via PPTS
 - ➔ Guidelines for reporting
- ✱ **Reports and Fact Sheets**
- ✱ **Also, Performance Excellence Team**

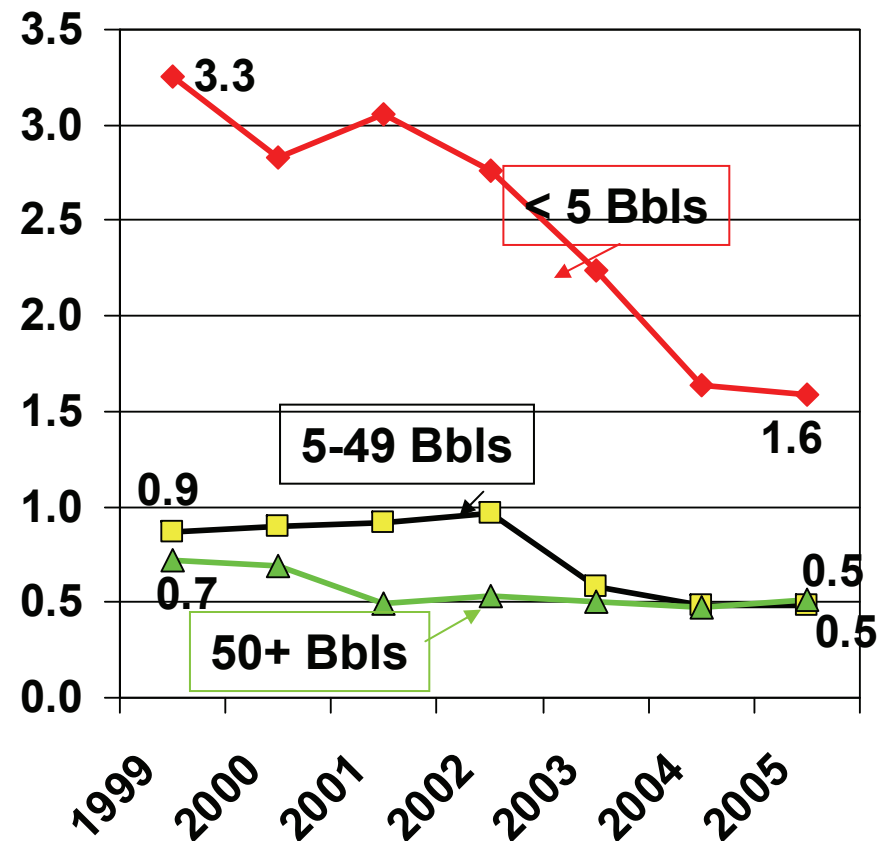


The data doesn't go in and not come out!

Number of Releases by Spill Size

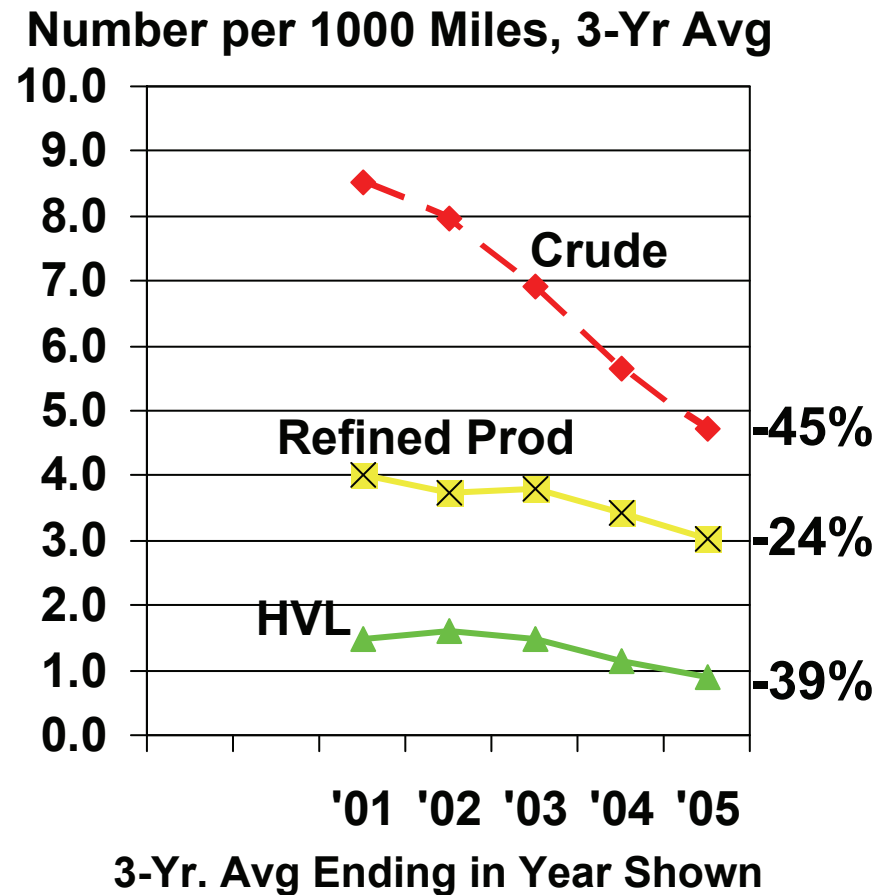
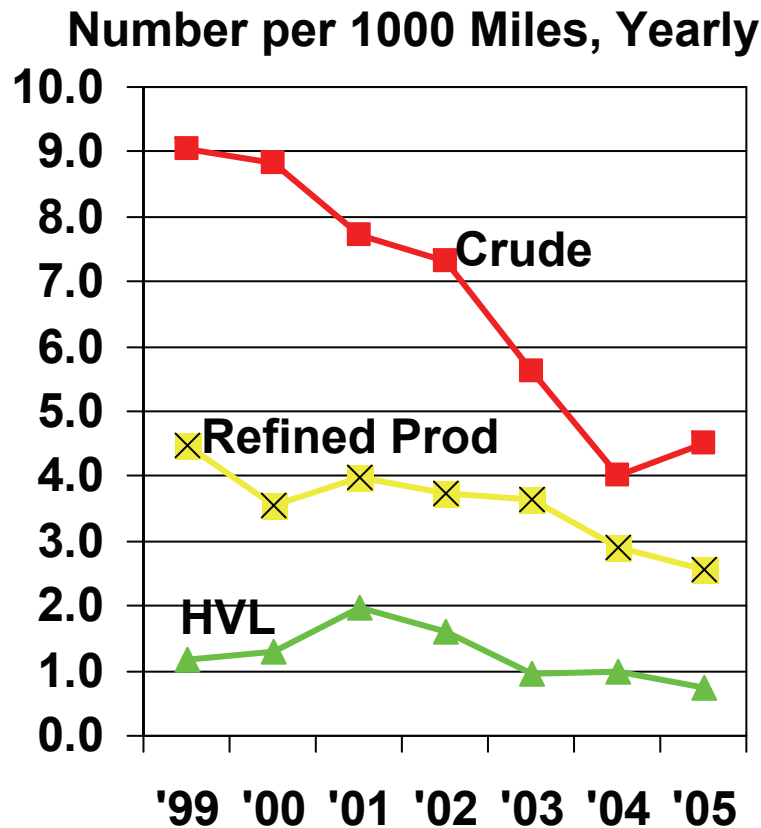
- ✱ 4.8 per 1000 miles in 1999, 2.6 per 1000 miles in 2005, a 47% decline
- ✱ 2/3 are less than 5 barrels (but share dropping)
- ✱ 15% are 50 barrels or larger (old OPS threshold)
- ✱ Number of releases of 50 barrels or more has remained flat since 2001, while small spills declined. Spills of 5-49 barrels have also flattened.

Number per 1000 Miles, 1999-2005



Excludes incidents on unregulated gathering systems; excludes releases from hurricanes Ivan, Katrina and Rita

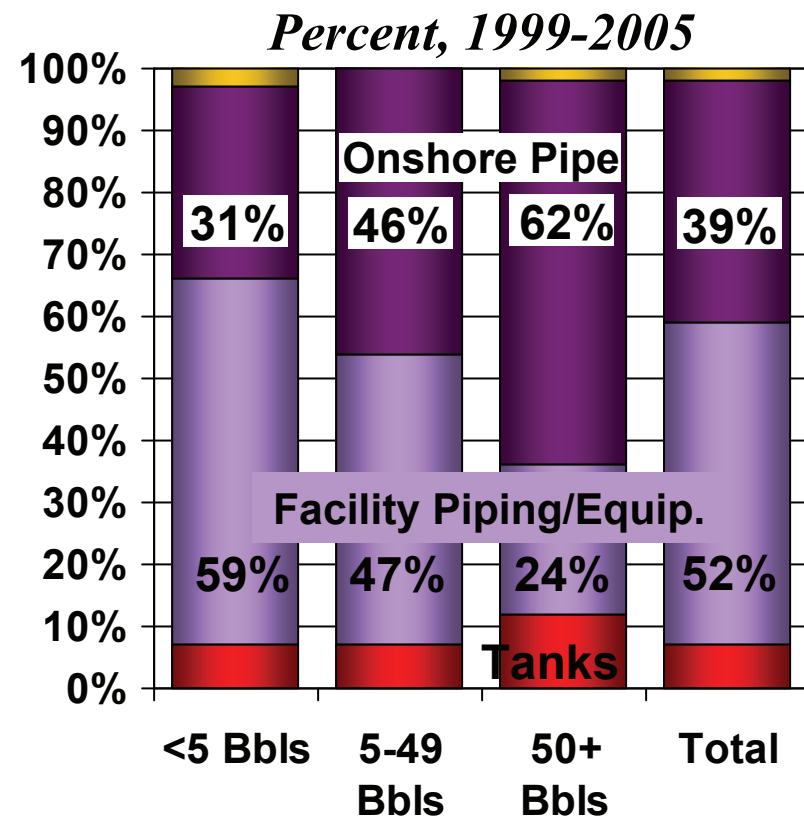
Releases by Commodity; Number of Incidents per 1000 Miles



Excludes incidents on unregulated gathering systems;
excludes releases from hurricanes Ivan, Katrina and Rita

It's About Risk: System Location, Number of Releases by Spill Size

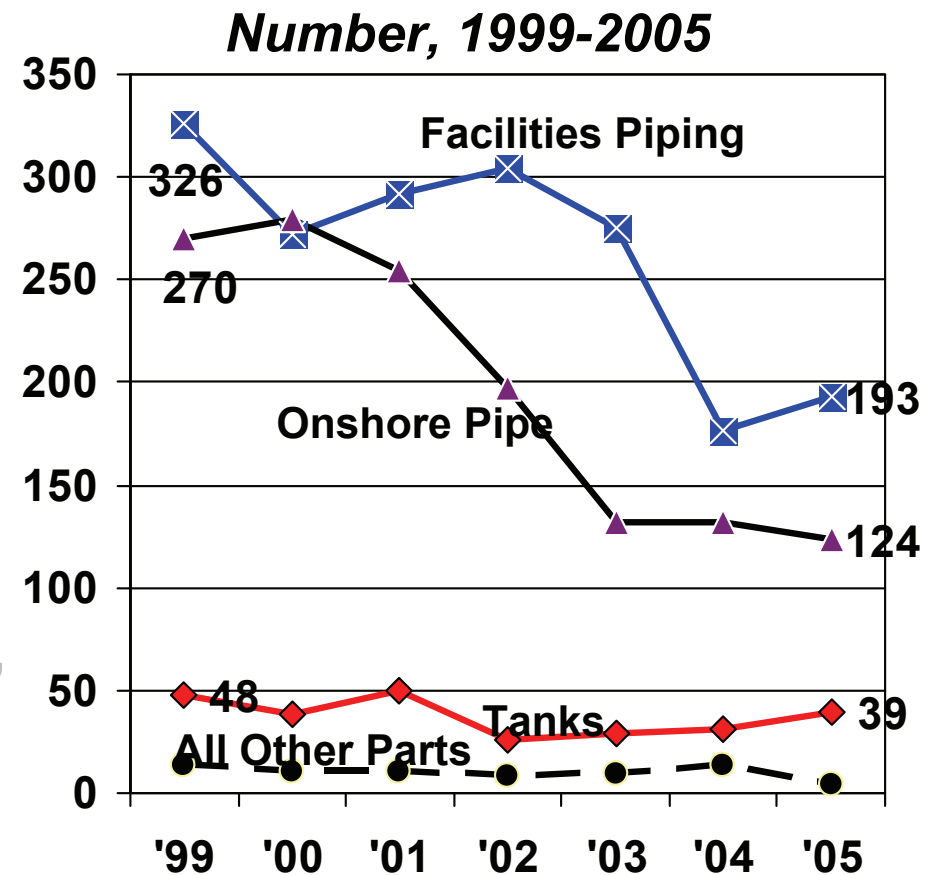
- * **508 per year; 2/3 less than 5 barrels; 15% are 50 barrels or larger**
- * **Location: Facilities piping & equipment: 52%; Onshore pipe: 39%**
- * **Location by size: Facilities piping & equipment: 24% of 50+ bbls; Onshore pipe: 62% of 50+ bbls**



Excludes incidents on unregulated gathering systems;
excludes releases from hurricanes Ivan, Katrina and Rita

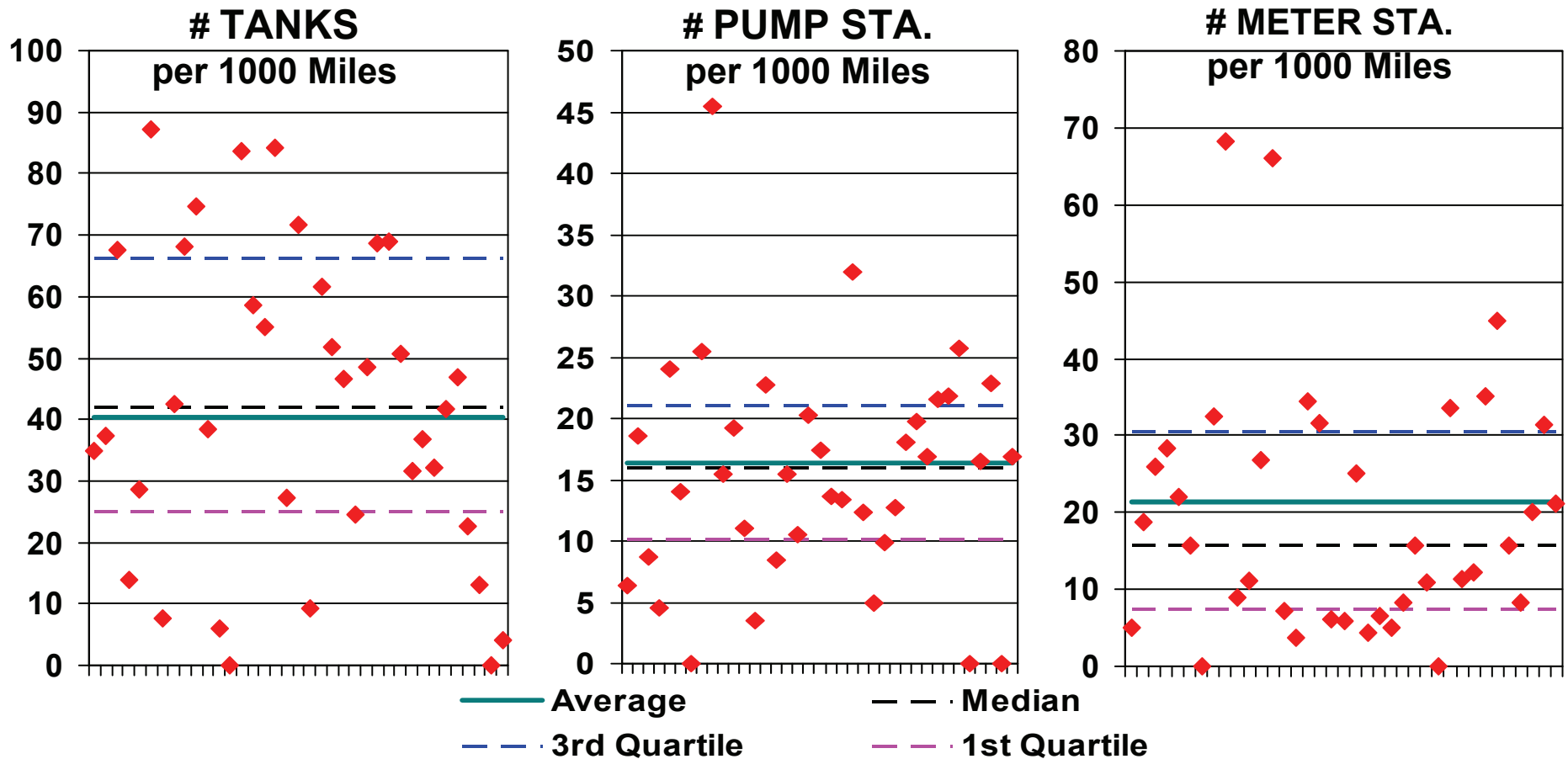
Focus on Risk, #2: System Part, By Year

- ✱ Releases from facilities piping account for 52%; from onshore pipe, 39%; from tanks and offshore pipe [and cavern], 9%.
- ✱ Thru 2003, onshore pipe releases had fallen, and facilities releases were ~flat.
- ✱ Since then, facilities down, and onshore pipe ~flat.



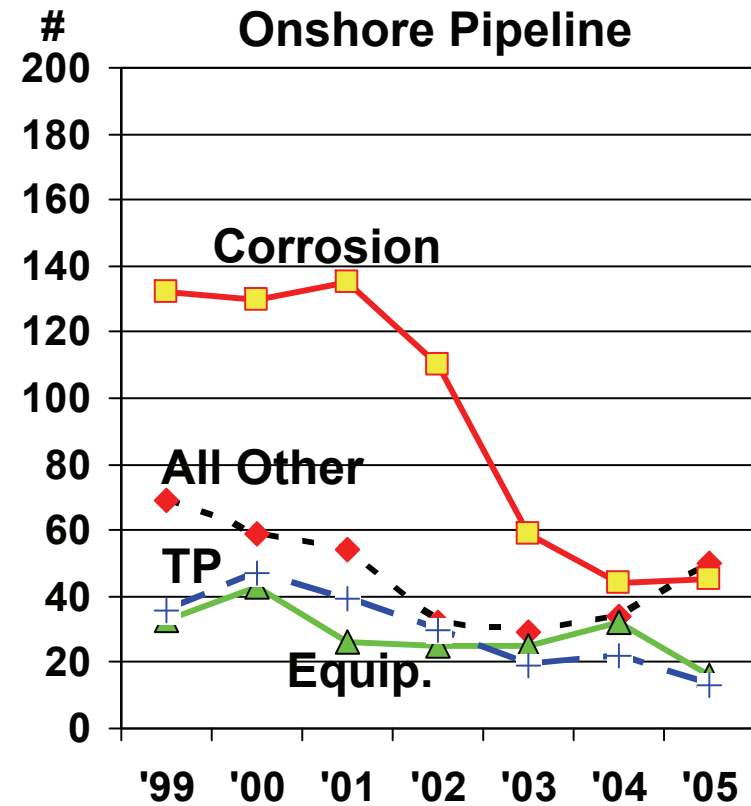
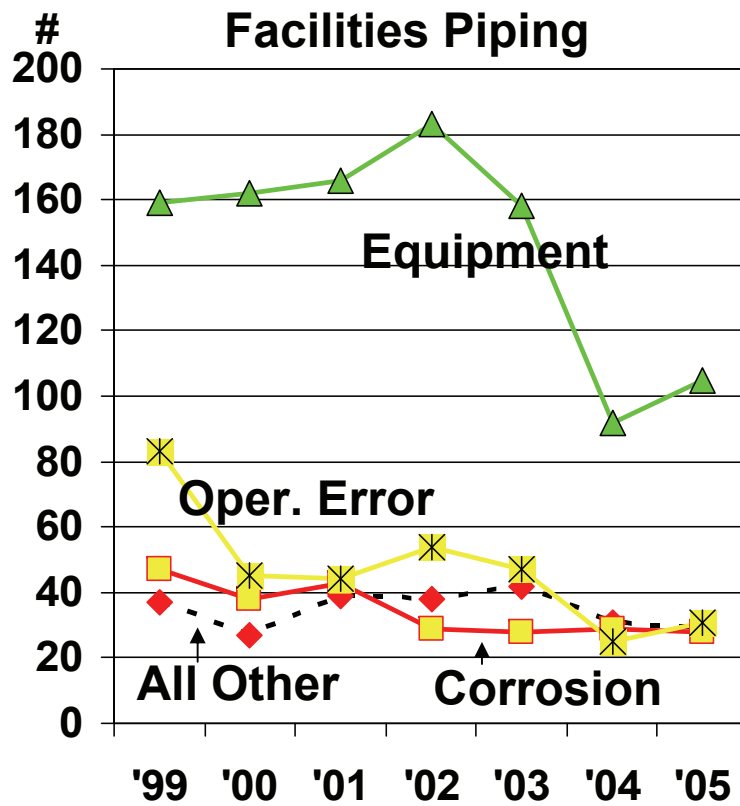
Excludes incidents on unregulated gathering systems;
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PPTS Facilities Indicators, 2004: Almost Everybody's Got 'Em!



Each red diamond is one operator's value. Plots (but not industry values) exclude one operator.

Facilities and Onshore Pipe, by Cause, Year-by-Year



Assessing Consequences: Deaths and Injuries

	Cause	Incidents (#, '99-'05)	Empl.	Contr. (# People)	Other	Total
Fatalities	Third Party Damage	4	0	0	10	10
	Operator Error	2	0	2	0	2
	Other	1	1	0	0	1
	Total	7	1	2	10	13
Injuries	Third Party Damage	7	0	0	16	16
	Operator Error (incl. excavation)	5	4	6	0	10
	Pipe mat'l/seam	2	1	0	2	3
	Corrosion	1	0	0	1	1
	Equipment Malfunction	1	0	0	1	1
	"Other failure" in a Tank	1	1	0	0	1
	Other Cause	1	0	1	0	1
	Total	18	6	7	20	33

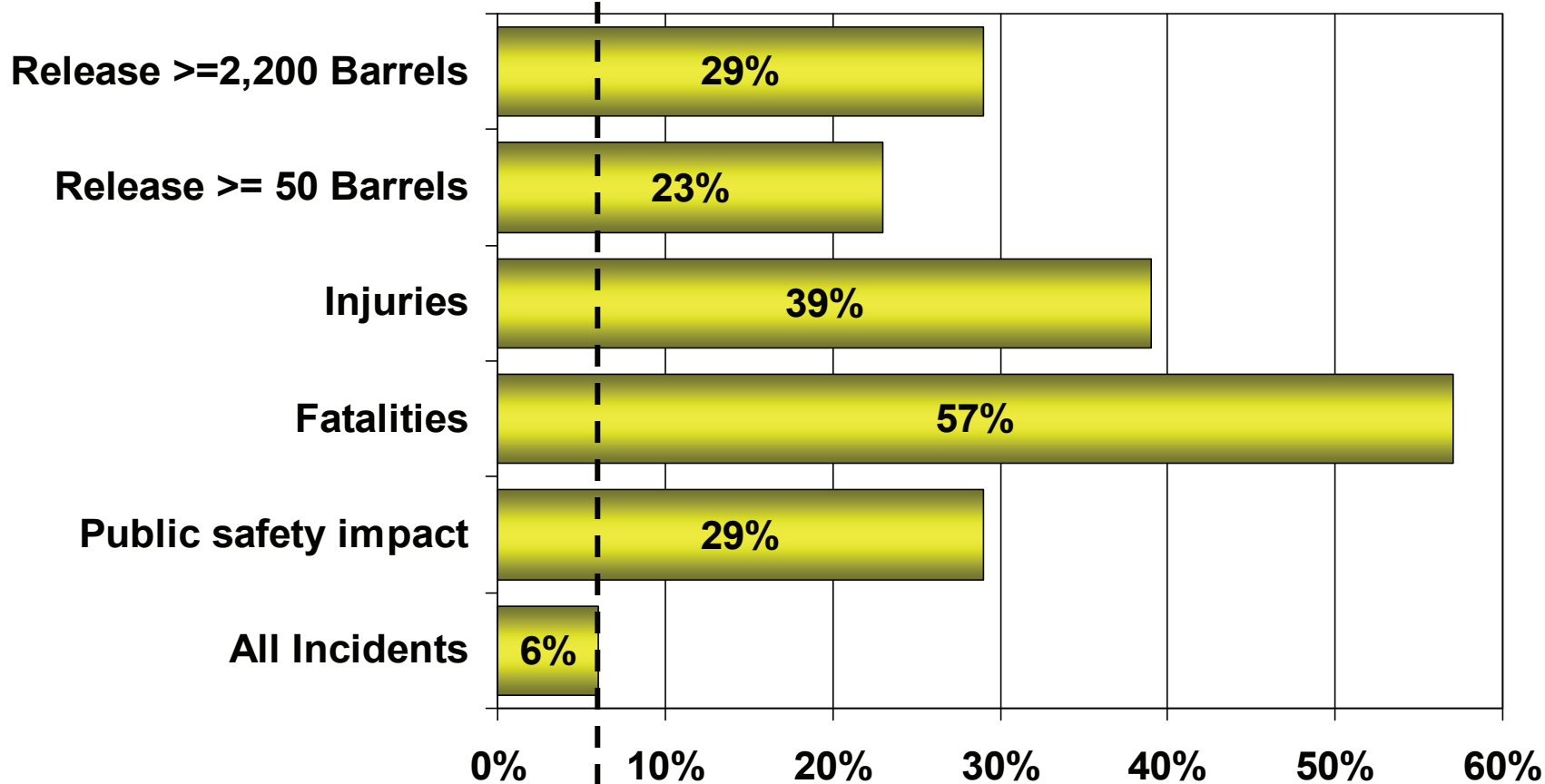
Where Are People Getting Hurt or Killed? Deaths and Injuries by System Part

Cause	Incidents (#, '99-'05)	Empl.	Contr. (# People)	Other	Total
Fatalities					
Facilities Piping	1	1	0	0	1
Onshore Pipeline	6	0	2	10	12
Grand Total	7	1	2	10	13
Injuries					
Aboveground Storage Tank	1	1	0	0	1
Cavern/belowground	1	1	0	0	1
Facilities Piping	3	2	6	0	8
Onshore Pipeline	13	2	1	20	23
Grand Total	18	6	7	20	33

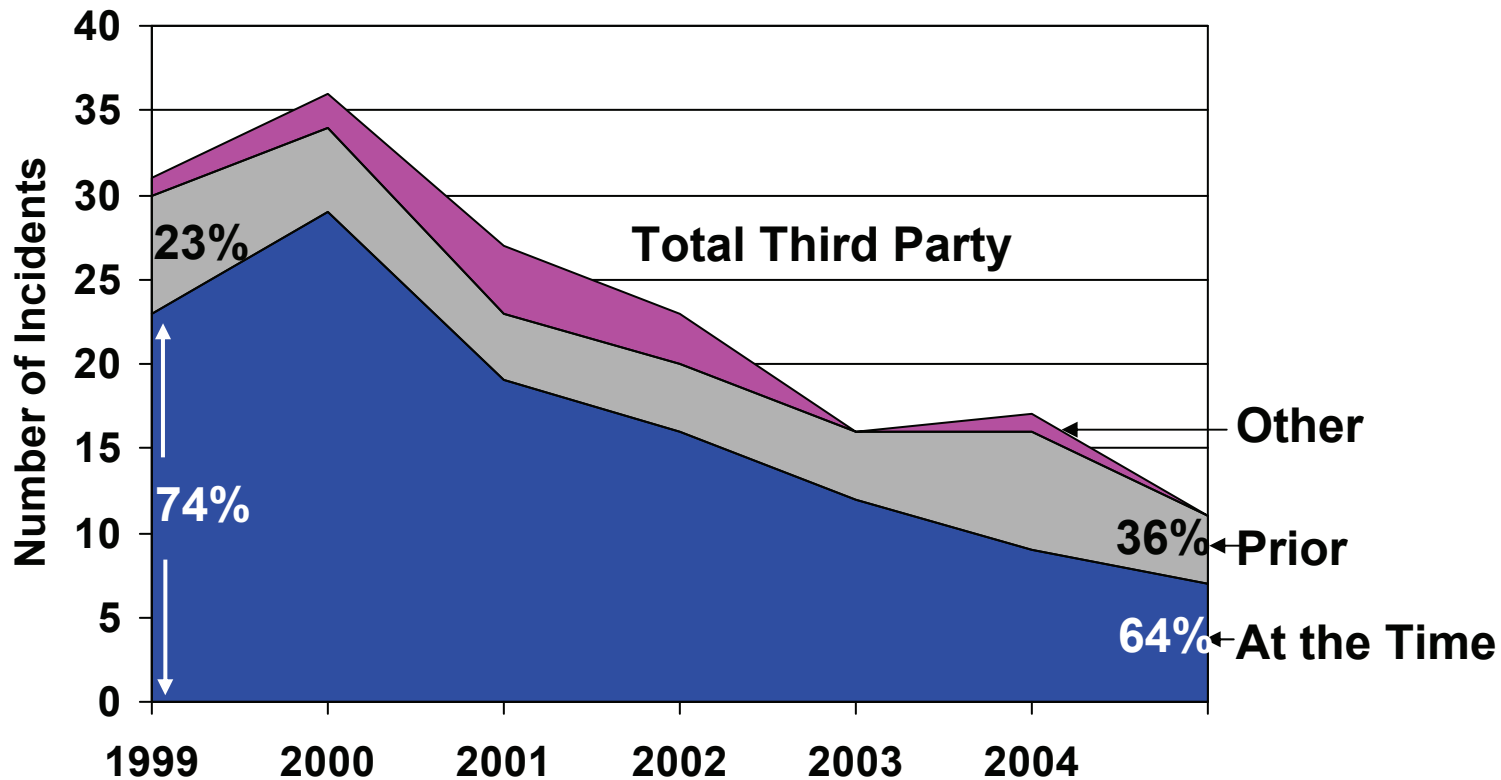
Why Focus on Third Party Damage? Disproportionate share of consequences

Total incidents, '99-'05: 3,581; Total from Third Party Damage: 230

Third Party Damage Share of Incidents Involving:

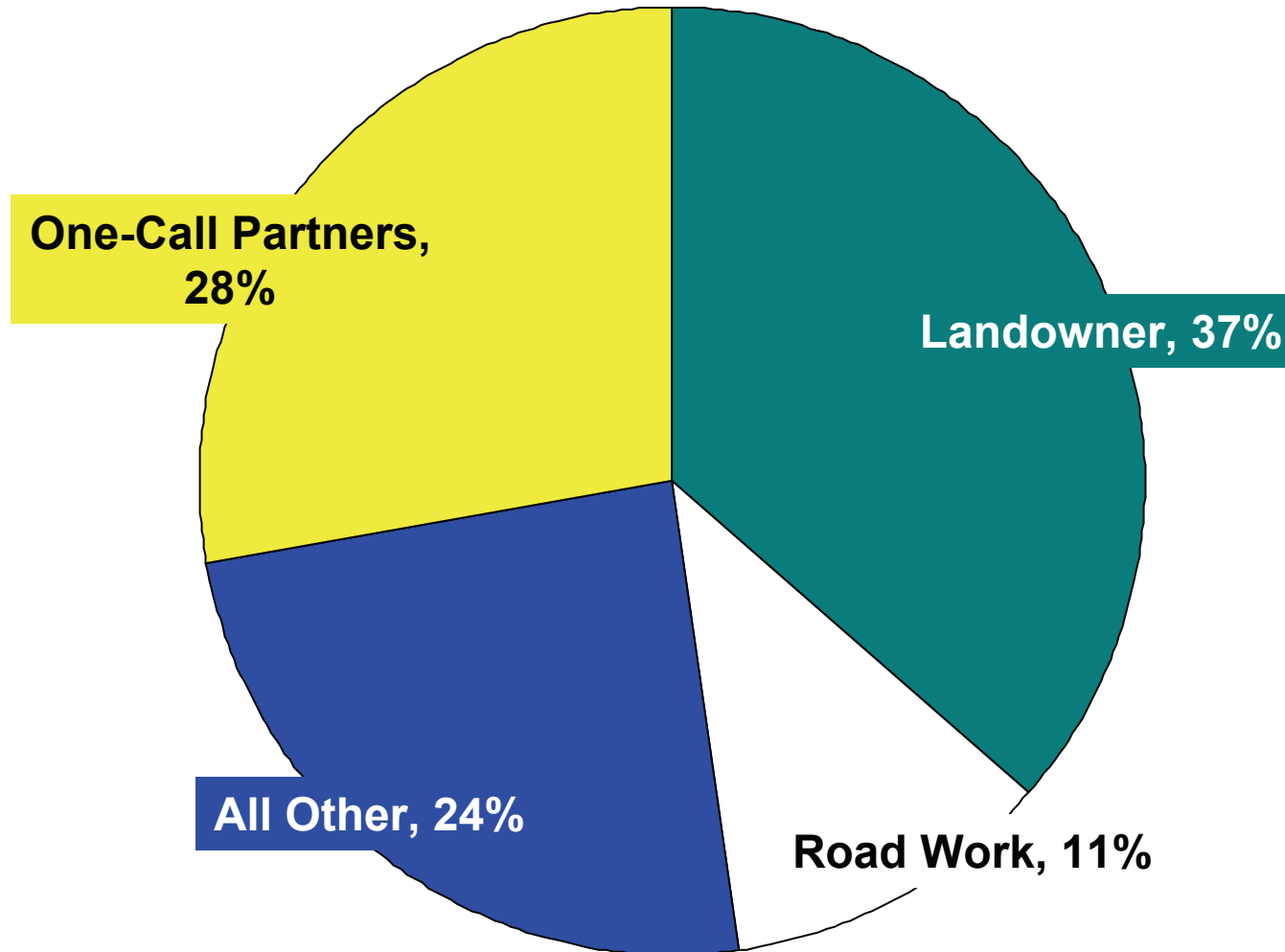


***By 2005, Just 5 Incidents* Caused
by Third Party Damage "at the Time"***



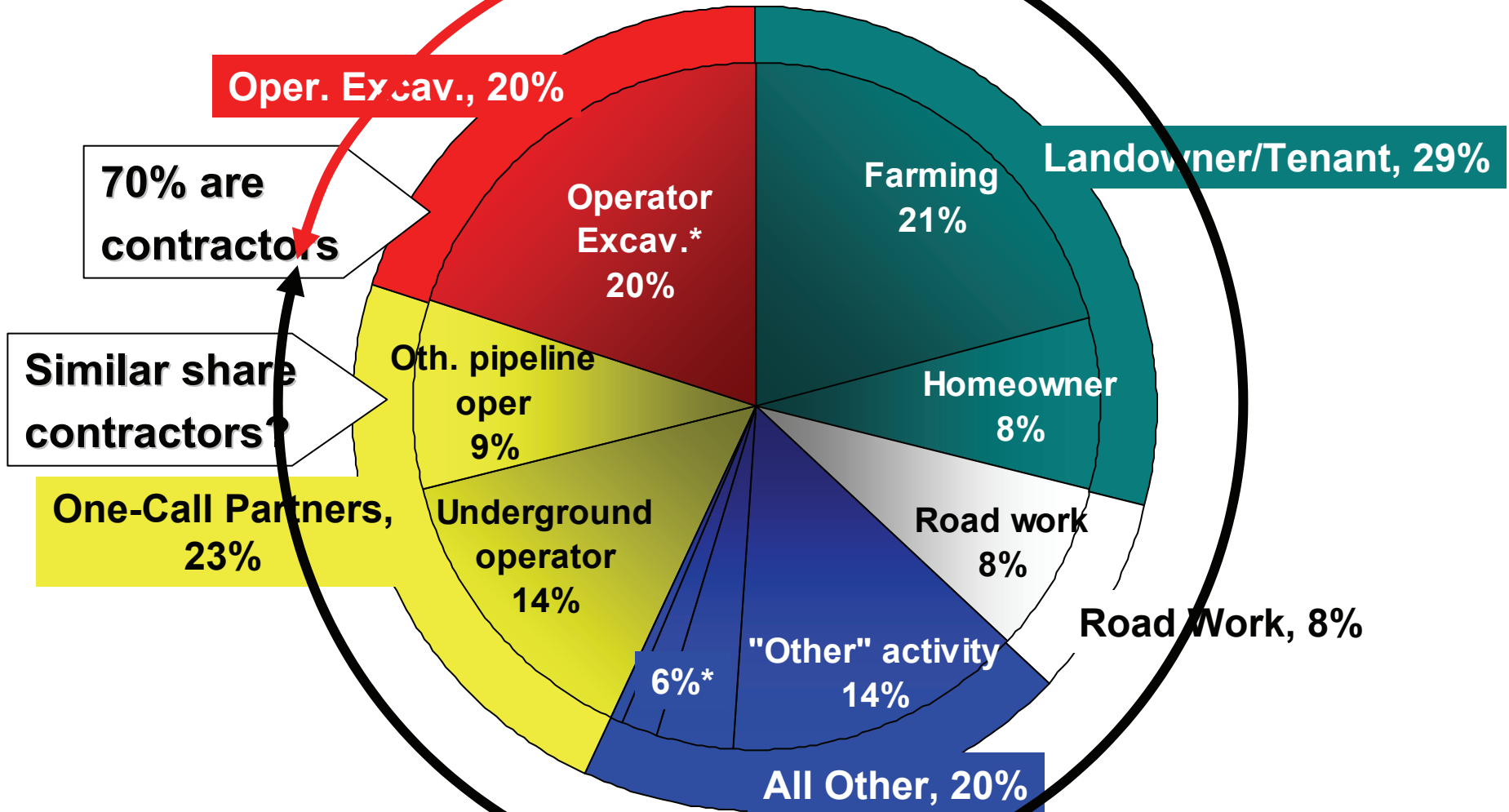
* Includes onshore pipeline incidents ≥ 5 barrels or D/I/F/E

Who Does the Damage?



*PPTS classifies operator excavation as Operator Error, not Third Party Damage.
Also included in "All Other" is res/comm dev. (4%), waterway activity (2%) and rail (1%)

*A Closer Look at
Who Does the Damage: We Do.*



*PPTS classifies operator excavation as Operator Error, not Third Party Damage. Also included in "All Other" is res/comm dev. (4%), waterway activity (2%) and rail (1%)

Focus on Operators and Contractors

☀ **Operator Error and Incorrect Operation**

- Includes 1st & 2nd Party Excavation (and there's a lot!)
- Includes tank overfill caused by operator (not equip.)
- Includes traditional operator error
 - ✓ Valves
 - ✓ Vehicles
 - ✓ Pipe/Equipment overpressured
 - ✓ Other human error

Where Did Incident Occur?

**PPTS Operator/Contractor Incidents >5 Barrels, 1999-2005
(Number of Incidents)**

Type of Operator/Contractor Failure	Contract employee	Direct employee	I don't know	Grand Total
Aboveground Storage Tank	2	6	1	9
Cavern or other belowground		1		1
Facilities Piping	14	65	10	89
Offshore Pipeline	1			1
Onshore Pipeline	23	15	3	41
Total Number	40	87	14	141
Total %	28%	62%	10%	100%

What Went Wrong?

**PPTS Operator/Contractor Incidents >5 Barrels, 1999-2005
(Number of Incidents)**

Type of Operator/Contractor Failure	Contract employee	Direct employee	I don't know	Grand Total
Excavation or physical damage by operator/ contractor	20	6	3	29
Motor vehicle	1	4	1	6
Other human error	15	33	3	51
Pipeline equipment over-pressured	2	3	1	6
Tank over-filled		3		3
Valve in wrong position	2	38	6	46
Total Number	40	87	14	141
Total %	28%	62%	10%	100%

"I Don't Know"

- ✱ **Examples: pipe type; year installed; year manufactured; year cathodic protection installed; depth of cover; use of one-call**
- ✱ **Each "I don't know" keeps DMT from seeing whole picture**
- ✱ **Each "I don't know" means we miss a lesson for safety**
- ✱ **Please explore with colleagues where you might get info now entered as "I don't know"**

- ✱ **Industry's performance rests on PPTS**
- ✱ **Where to put \$**
 - ✓ Maintenance
 - ✓ IMP
 - ✓ R&D
- ✱ **Where to put regulatory/advocacy effort**
- ✱ **New approaches to keeping people and communities safe**

- ✱ **PPTS rests on you!**



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