Petroleum Pipeline Safety in Contra Costa County
Pipelines 101 in Contra Costa County
300 North Commercial Street, Suite B
Bellingham, WA 98225
360-543-5686
carl@pstrust.org
Website – www.pstrust.org
Facebook – www.facebook.com/pages/Pipeline-Safety-Trust/273169844517
Listserv – http://tech.groups.yahoo.com/group/safepipelines/
What happen in Bellingham

- Pipeline was damaged by 3rd party
- Damage known but not fixed
- Valve installed wrong but not fixed
- Valve malfunctioned multiple times
- SCADA failure
- Operator Error
- Pipeline burst and exploded killing 3 youngsters and an entire salmon stream
Guys,
I'm fishing. Will be back before dark. Homework is done.

Liam
The Pipeline Safety Trust
Who we are and where we came from?

“… there’s going to be a Trust that’s going to be funded as part of today’s sentencing. With $4,000,000 … they’ve nowhere near the lobbying potential of the oil industry. It’s not even David and Goliath. It’s more like Bambi and Godzilla. You’ve heard people today that are going to spend their lives trying to make this right, and they should be listened to. No industry polices itself very well… you need outside people, and these are going to be the people so pay attention to them.”

The Honorable Barbara Rothstein
United States District Judge
At Olympic Pipe Line Co Sentencing
Path to Greater Pipeline Safety

Regulators

Pipeline Operators

The Public & Local Government
The things the Pipeline Safety Trust does to try to increase safety

- Improve pipeline safety regulations
- Increase transparency and access to pipeline information
- Provide a “public interest” voice to pipeline safety processes and events
- Partner with groups trying to move pipeline safety forward.
- Provide technical assistance to impacted communities
Pipeline Systems

Natural Gas Pipelines
- Gathering lines
- Transmission lines
- Distribution lines

Hazardous Liquid Pipelines
- Transmission lines

INTERNational vs. INTRAnational pipelines
Hazardous Liquid Pipeline System
Hazardous Liquid Pipelines Carry

• Crude oil
• Refined petroleum products such as gasoline, diesel, jet fuel
• Highly Volatile Liquids such as propane, butane, ethylene, condensates
• Carbon dioxide
• Anhydrous Ammonia
National and California Pipeline System

The Current U.S. Pipeline System
- 192,414 miles of Hazardous Liquid Pipelines
- 319,254 miles of Gas Transmission and Gathering pipelines
- 2,165,195 miles of Natural Gas Distribution mains and service pipelines

The Current California Pipeline System
- 7,401 miles of Hazardous Liquid pipelines
- 11,861 miles of Gas Transmission and Regulated Gathering pipelines
- 200,262 miles of Natural Gas Distribution mains and service pipelines
### Breakdown of Commodities Shipped in California Transmission Pipelines

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Mileage</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>11,647</td>
<td>61%</td>
</tr>
<tr>
<td>Crude Oil</td>
<td>3,934</td>
<td>21%</td>
</tr>
<tr>
<td>Refined Petroleum Products</td>
<td>3,281</td>
<td>17%</td>
</tr>
<tr>
<td>Natural Gas Liquids HVL</td>
<td>101</td>
<td>1%</td>
</tr>
<tr>
<td>Other*</td>
<td>40</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>19,003</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Other* consists of pipelines transporting biofuels (15 miles), hydrogen gas (16 miles), landfill gas (3 miles), and other gas (6 miles).
Where are the major pipelines in Contra Costa County?

National Pipeline Mapping System
https://www.npms.phmsa.dot.gov/PublicViewer/
Incident Trends – U.S.

Onshore Significant Incidents - Entire U.S.

- Hazardous Liquid
- Gas Transmission
- Gas Distribution
Incident Trends - California

Onshore Significant Incidents - California

- Gas Distribution
- Gas Transmission
- Hazardous Liquid
# Hazardous Liquid Significant Incidents In Contra Costa County

<table>
<thead>
<tr>
<th>DATE</th>
<th>PIPILELINE OPERATOR</th>
<th>CITY</th>
<th>DEATHS</th>
<th>INJURIES</th>
<th>PROP. DAMAGE</th>
<th>NET GALLONS LOST</th>
<th>CAUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8/02</td>
<td>SFPP, LP</td>
<td>CONCORD</td>
<td>0</td>
<td>0</td>
<td>$235,560</td>
<td>168</td>
<td>OTHER</td>
</tr>
<tr>
<td>3/31/02</td>
<td>SFPP, LP</td>
<td>RICHMOND</td>
<td>0</td>
<td>0</td>
<td>$296,141</td>
<td>-</td>
<td>MATERIAL FAILURE OF PIPE/WELD</td>
</tr>
<tr>
<td>9/7/02</td>
<td>SFPP, LP</td>
<td>RICHMOND</td>
<td>0</td>
<td>0</td>
<td>$337,883</td>
<td>-</td>
<td>MATERIAL FAILURE OF PIPE/WELD</td>
</tr>
<tr>
<td>4/1/03</td>
<td>SFPP, LP</td>
<td>CONCORD</td>
<td>0</td>
<td>0</td>
<td>$204,555</td>
<td>1,848</td>
<td>MATERIAL FAILURE OF PIPE/WELD</td>
</tr>
<tr>
<td>4/14/03</td>
<td>SFPP, LP</td>
<td>CONCORD</td>
<td>0</td>
<td>0</td>
<td>$1,752,121</td>
<td>10,080</td>
<td>CORROSION</td>
</tr>
<tr>
<td>11/7/04</td>
<td>SFPP LP</td>
<td>MARTINEZ</td>
<td>0</td>
<td>0</td>
<td>$170,918</td>
<td>4,032</td>
<td>EXCAVATION DAMAGE</td>
</tr>
<tr>
<td>11/9/04</td>
<td>SFPP LP</td>
<td>WALNUT CREEK</td>
<td>5</td>
<td>3</td>
<td>$902,256</td>
<td>23,688</td>
<td>EXCAVATION DAMAGE</td>
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<tr>
<td>4/30/06</td>
<td>SFPP L.P.</td>
<td>CONCORD</td>
<td>0</td>
<td>0</td>
<td>$575,069</td>
<td>-</td>
<td>MATERIAL FAILURE OF PIPE/WELD</td>
</tr>
<tr>
<td>9/8/07</td>
<td>PACIFIC ATLANTIC TERMINALS LLC</td>
<td>MARTINEZ</td>
<td>0</td>
<td>0</td>
<td>$613,076</td>
<td>1,890</td>
<td>INCORRECT OPERATION</td>
</tr>
<tr>
<td>5/23/08</td>
<td>SFPP, LP</td>
<td>RICHMOND</td>
<td>0</td>
<td>0</td>
<td>$125,673</td>
<td>126</td>
<td>CORROSION</td>
</tr>
<tr>
<td>8/23/11</td>
<td>SFPP, LP</td>
<td>BRENTWOOD</td>
<td>0</td>
<td>0</td>
<td>$431,960</td>
<td>588</td>
<td>EQUIPMENT FAILURE</td>
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<tr>
<td>8/27/11</td>
<td>CONOCOPHILLIPS</td>
<td>BYRON</td>
<td>0</td>
<td>0</td>
<td>$1,343,333</td>
<td>2,352</td>
<td>EXCAVATION DAMAGE</td>
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<tr>
<td>11/7/11</td>
<td>CONOCOPHILLIPS</td>
<td>CONCORD</td>
<td>0</td>
<td>0</td>
<td>$1,937,932</td>
<td>1,890</td>
<td>CORROSION</td>
</tr>
<tr>
<td>7/3/12</td>
<td>SHELL PIPELINE CO.</td>
<td>MARTINEZ</td>
<td>0</td>
<td>0</td>
<td>$182,390</td>
<td>0</td>
<td>EQUIPMENT FAILURE</td>
</tr>
<tr>
<td>8/8/13</td>
<td>SFPP, LP</td>
<td>CONCORD</td>
<td>0</td>
<td>0</td>
<td>$435,608</td>
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<td>MATERIAL FAILURE OF PIPE/WELD</td>
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<tr>
<td>12/9/14</td>
<td>SFPP, LP</td>
<td>CONCORD</td>
<td>0</td>
<td>0</td>
<td>$150,501</td>
<td>0</td>
<td>EQUIPMENT FAILURE</td>
</tr>
<tr>
<td>1/12/15</td>
<td>SFPP, LP</td>
<td>RICHMOND</td>
<td>0</td>
<td>0</td>
<td>$550,497</td>
<td>0</td>
<td>EQUIPMENT FAILURE</td>
</tr>
</tbody>
</table>

| 2002-2015 YTD TOTAL | 5 | 3 | $10,245,473 | 46,662 |

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**2002-2015 YTD TOTAL**: 5 DEATHS, 3 INJURIES, $10,245,473 DAMAGE, 46,662 GALLONS LOST
What are the causes of hazardous liquid pipeline incidents nationally?

1,283 Incidents; 2005-2014
Source: DOT-PHMSA data as of 5/25/2015
What are the causes of hazardous liquid pipeline incidents in California?

87 Incidents; 2005-2014

Source: DOT-PHMSA data as of 5/25/2015
What’s the risk?

- Very Low Probability
- Potentially Huge Consequences
How To Think About Risk?
Risk = Probability X Consequence

Over the past 10 years the probability for a hazardous liquid pipeline incident nationally is 1 significant incident per year per 1451 miles of hazardous liquid pipelines. So with 482 miles of HL pipeline, Contra Costa County could statistically expect a significant incident about once every 3 years for hazardous liquid pipelines. 1/823 miles in CA

Does that probability make you feel safe?
Consequences

How About Now?
Where Do The Regulations Come From?

Main Sources of Pipeline Regulations

• U.S. Congress – the Statutes
• U.S. Department of Transportation, Office of Pipeline Safety (PHMSA) – the safety regulations
• The States – Can pass stronger rules for intrastate pipelines
• Local Government – Can use their planning, zoning and permitting authority for land uses near pipelines
What Do The Regulations Cover?

**Code of Federal Regulations - Title 49**

- **Part 190** - Program operations, enforcement, rulemaking procedures
- **Part 191** - Annual reports, incident reports, and safety-related condition reports
- **Part 192** - Minimum federal safety standards for transportation of *natural and other gas by pipeline*
- **Part 193** - Federal safety standards - *liquefied natural gas facilities*
- **Part 194** - Response plans for *onshore oil pipelines*
- **Part 195** - Minimum federal safety standards for transportation of *hazardous liquids* by pipeline
- **Part 198** - Grants to aid state pipeline safety programs
- **Part 199** - Drug and alcohol testing
Main Things To Remember About The Regulations

- Rules often have multiple layers to prevent a single threat
- Many parts of the regulations are based on risk assessment and management
- Regulations are more stringent in higher consequence areas
Who Regulates Pipeline Safety in CA?

The federal Office of Pipeline Safety regulates, inspects and enforces **interstate** hazardous liquid and natural gas pipelines in California.

The Office of the State Fire Marshal, Pipeline Safety Division, regulates, inspects and enforces the rules for **intra**state hazardous liquid pipelines in California.

The CA Public Utilities Commission regulates, inspects and enforces the rules for **intra**state natural gas pipelines.
State rules that are more stringent than federal rules on intrastate HL pipelines

- Better information sharing, incident reporting and planning outreach to fire departments,
- Required pressure testing requirements
- Higher risk category and leak testing requirements
- Better protection of pipeline easements from encroachment
- Comprehensive database and mapping system

http://www.napsr.org/Pages/Compendium.aspx
Prescriptive vs. Performance Based Examples

Prescriptive – 70 MPH speed

Performance based – Drive safely
Land Use Planning Near Pipelines
Multiple layers of bad planning
Pipelines and Informed Planning Alliance Report is Now Available

130 people representing diverse stakeholders came up with 46 recommended practices that local governments should consider adopting to increase pipeline safety.

The PIPA Report and more information about planning near pipelines can be found at: http://www.pstrust.org/planningnearpipes.htm
Consider Adopting Consultation Zones and Planning Zones
What Can The Public Do?

Know what’s below.

811
Know what’s below.
Call before you dig.
What Else Can The Public Do?

Push for inclusion and engage your local, state and federal officials

Negotiate the maze

Ensure there is a 3rd leg
Call for regional Pipeline Safety Trusts
Where to get more information?

- Pipeline Safety Trust - http://pstrust.org/ 360-543-5686
- PHMSA Community Assistance & Technical Services staff http://primis.phmsa.dot.gov/comm/CATS.htm?nocache=4439
- Office of the State Fire Marshal – Pipeline Safety Division http://osfm.fire.ca.gov/pipeline/pipeline.php
Detailed Guides with Best Practices for Local Governments

Hazard Mitigation Planning: Practices for Land Use Planning and Development near Pipelines
2015
FEMA

Building Safe Communities: Pipeline Risk and its Application to Local Development Decisions
Office of Pipeline Safety
October, 2010
Thanks for listening and for your interest in pipeline safety.

Carl Weimer, Executive Director
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carl@pstrust.org