

King County International Airport



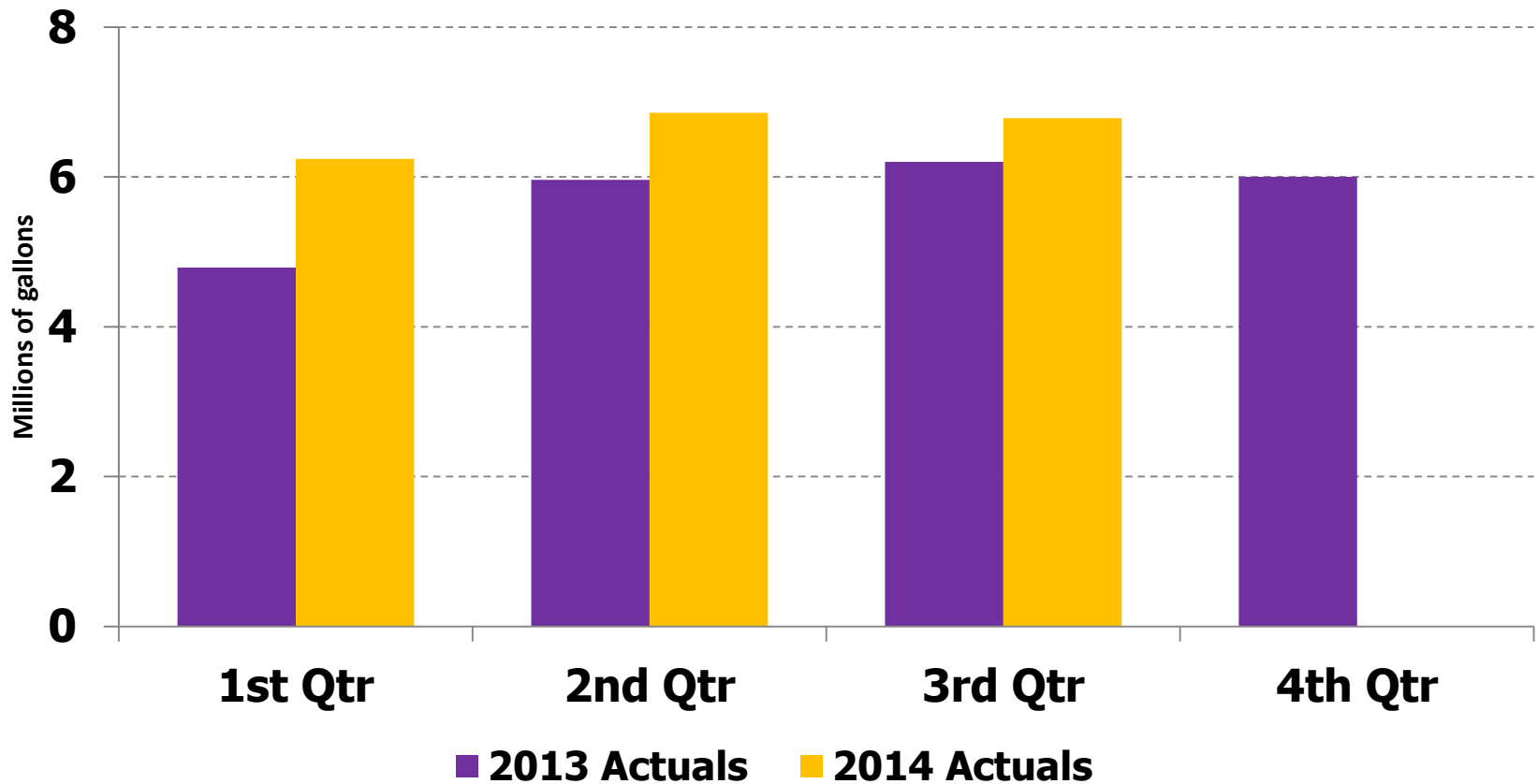
FUEL SPILLS



Regulations that govern fuel spills

- EPA
- KCIA Spill Policy
- NFPA 407
- International Fire Code
- King County Title 15 and 17
- FAA Part 139
- Remember these are the minimum standards. The AHJ and Airport Management has the authority to exceed these standards.

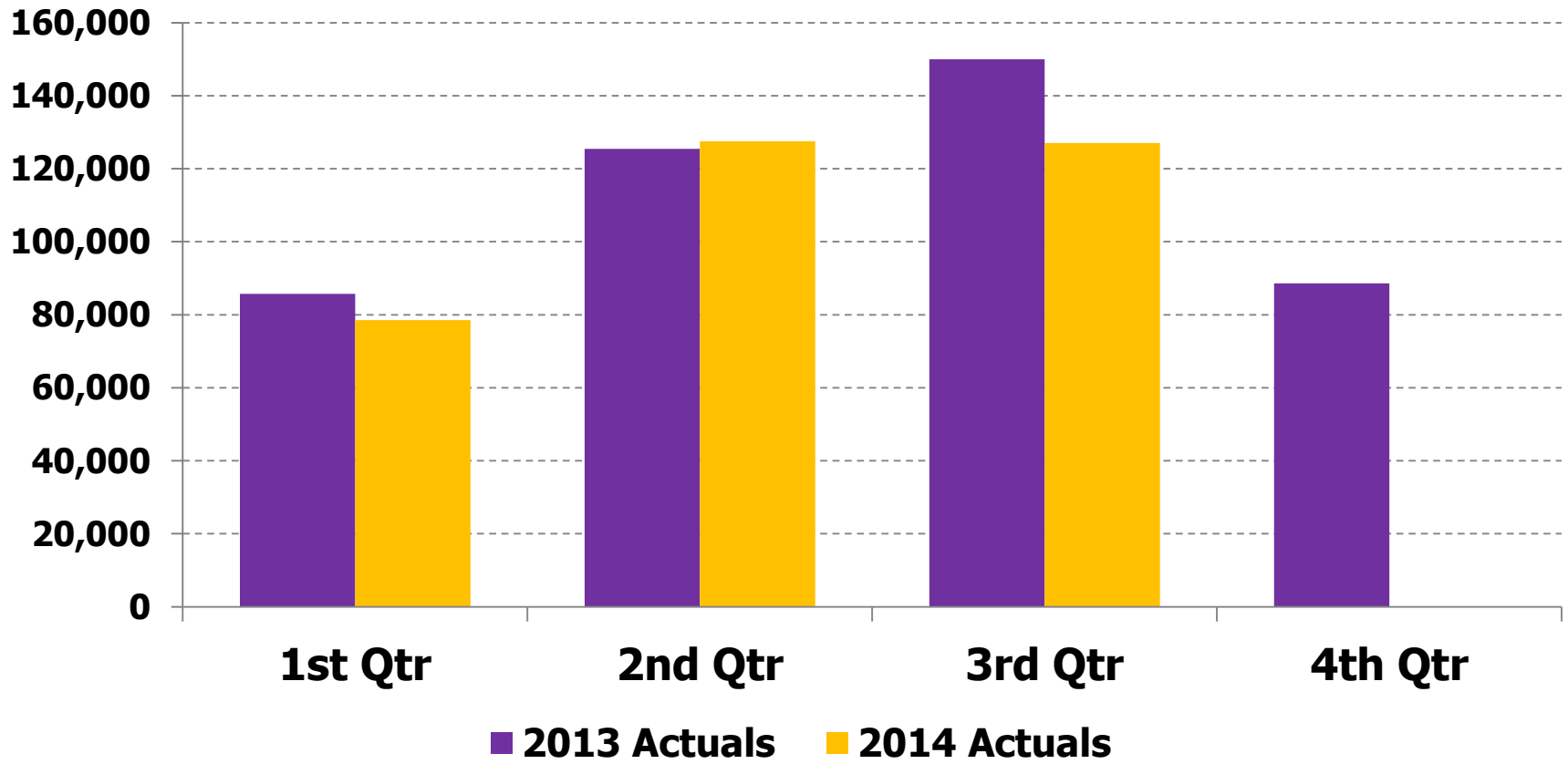
Airport Jet A fuel Volume 2014 vs. 2013



Increase in Jet A fuel volume 2014 vs. 2013

Year-to Date Jet-A Volume (in gallons)				
	2013 Actuals	2014 Actuals	Increase/ (Decrease)	% Variance
1st Qtr	4,789,936	6,239,151	1,449,215	30%
2nd Qtr	5,961,343	6,853,727	892,384	15%
3rd Qtr	6,201,421	6,783,065	581,644	9%
4th Qtr	5,998,976	-	-	0%
	22,951,676	19,875,943	2,923,243	

Airport Avgas fuel Volume- 2014 vs. 2013



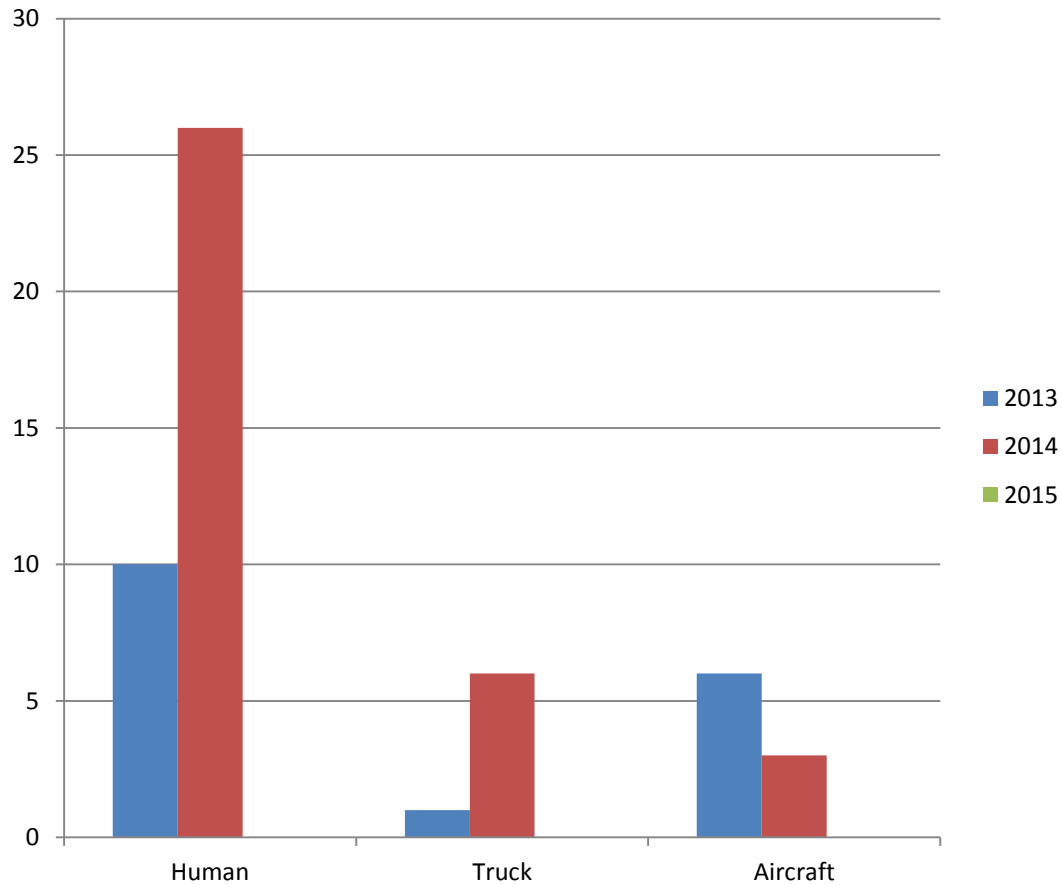
Decrease in Avgas Volume

Year-to Date AvGas Volume (in gallons)				
	2013 Actuals	2014 Actuals	Increase/ (Decrease)	% Variance
1st Qtr	85,744	78,546	(7,198)	-8%
2nd Qtr	125,424	127,539	2,115	2%
3rd Qtr	150,016	127,048	(22,968)	-15%
4th Qtr	88,577	-	-	0%
	449,761	333,133	(28,051)	

REPORT #	REASON	GALLONS	AIRCRAFT
10/17/2014 (115)	PIC defeating over flow valve	30-40 gals.	DC-9
10/16/2014 (114)	Fueler over fill	1/2 gal.	CARAVAN
09/25/2014 (107)	Fueler over fill	1/2 gal.	N666JK
09/21/2014 (104)	Mechanical, defective bottom loader hose	5 gals.	FUEL TRUCK
09/18/2014 (102)	PIC defeating over fill safety valve	50 gals.	DC 9
09/15/2014 (100)	PIC activated smoke oil switch	3 gals.	EXPERIMENTAL
09/14/2014 (98)	Pressure increase due to temp change	5 gals.	CESSNA 560
09/14/2014 (97)	PIC requested to top off fuel tanks	2 gals.	RCAF
09/08/2014 (93)	PIC, fueling left, vent right wing vent.	1/2 gal.	CITATION X
09/08/2014 (92)	Fueler over fill	1/2 gal.	CARAVAN
08/25/2014 (89)	Fueler over fill, defective aircraft	1/2 gal.	F18
08/22/2014 (88)	Fueler over fill and vent failed to close	12 gals.	UNK
08/03/2014 (78)	PIC stated plane was over filled the night before.	1/2 gals.	PIPER
08/01/2014 (77)	Fueler over fill on a hot day	7 gals.	F18
07/31/2014 (75)	Mechanical, transfer switch	15 gals.	P47
07/31/2014 (74)	Mechanical, over flow valve	20 gals.	FUEL TRUCK
07/25/2014 (71)	Improper defueling of jet	1/2 gal.	LEAR
07/23/2014 (69)	Mechanical, over flow valve	40 gals.	FUEL TRUCK
06/29/2014 (60)	Fueler over fill, wing tip not level, fuel expansion	2 gals.	CITATION
06/15/2014 (59)	Mechanical, defective over flow switch on fuel truck	10 gal.	FUEL TRUCK
06/10/2014 (56)	PIC error, transfer switch	10-15 gal.	LEAR
06/06/2014 (55)	PIC or over fill by Fueler, Aircraft was about to depart.	1 gal.	HAWKER
06/05/2014 (54)	PIC transfer switch left on.	30 gal.	BEECH
06/05/2014 (52)	Fueler over fill	1 gal.	CESSNA
06/03/2014 (51)	Mechanical, defective over flow switch on fuel truck	10 gal.	FUEL TRUCK
06/02/2014 (49)	Mechanical, defective over flow switch on fuel truck	1 gal.	FUEL TRUCK
05/27/2014 (45)	PIC or fueler, spill under aircraft after departure	1/2 gal.	FALCON
05/21/2014 (44)	PIC error transfer switch left on.	2-3 gal.	AERO COMMAND
05/19/2014 (41)	Possible pressure variance, fuel Im balance	5-10 gal.	GULF STREAM
05/04/2014 (36)	PIC bled air line causing fuel in vent line	1 Gal	FALCON
04/26/2014 (33)	PIC or Fueler, fueling, started to vent	1 gal.	MAULE
04/23/2014 (31)	Plane landed started to vent fuel	1 gal	HAWKER
03/20/2014 (23)	PIC, fueling right side, venting left.	5 gal	LEAR
02/25/2014 (13)	Mechanical leak, K-LOADER	1 qt.	K-LOADER
02/07/2014 (11)	Possibly PIC, requesting too much fuel.	2 gal.	CESSNA
01/14/2014 (5)	Mechanic working on plane, starts to vent	5 gal.	CIRRUS

REPORT	REASON	GALLONS	AIRCRAFT
10/07/2013 (80)	PIC or Fueler, fueling plane starts to vent.	5 gal.	CESSNA
09/18/2013 (71)	Mechanical/PIC, switched fuel tanks started to vent from tail.	5 gal.	GULF STREAM
09/17/2013 (70)	Possible Fueler ERROR.	1 gal.	CHALLENGER
08/22/2014 (62)	PIC transferring fuel from tanks	1/2 gal.	LEARJET
07/27/2013 (53)	Gas cap not secured.	UNK	PIPER
07/18/2013 (50)	Mechanical, check valve failure.	5 gals.	KING AIR
07/06/2013 (45)	Over pressurization of fuel.	UNK	F-18
06/26/2013 (40)	Mechanical, right wing float malfunction.	1 gal.	HAWKER
06/05/2013 (35)	Fueler, PIC or vent malfunction.	2-3 gal.	UNK
05/25/2013 (33)	Mechanical, defective fill piping manifold.	5 gal.	FUEL TRUCK
04/17/2013 (21)	Mechanical, malfunction with Vent.	5-7 gal.	BOMBARDIER
04/04/2013 (18)	PIC, fill Switch left in the on position.	10 gal.	HAWKER
04/04/2013 (17)	Fueler, topped off fuel.	1 gal.	HAWKER
04/03/2013 (16)	Fueler, over fill.	1 gal.	CESSNA
02/16/2013 (5)	Over fill or warm weather caused fuel to vent.	2-3 gal.	LEAR
02/03/2014 (8)	PIC transferring fuel from on wing tank to another.	2 gal.	CESSNA
01/20/2013 (3)	Mechanical/PIC, shutoff valve failed.	10 gal.	BOMBARDIER

Causes of the fuel spills



How do we prevent fuel spills?

- OJT training, how long is the training?
- The training shall be conducted by the current certified fuel supervisor.
- Continued training and supervision of the training by the a current certified fuel supervisor.
- Proper communication with the pilot. “Top it off”. Instead, the fuel personnel should ask “how much fuel do you think you need” and then stop fueling at 90% of the amount requested. The fuel person shall then assess the fueling operations.

How to prevent fuel spills?

- Has a fuel pre-check been conducted on the aircraft
- Fuel personnel shall be trained in the safe operations of all fuel trucks by the current certified fuel supervisor; Jet-A and AVGAS
- Fuel personnel shall be trained in fueling different types of aircraft by the current certified fuel supervisor

How to prevent fuel spills

- Explain the task
- Demonstrate the task
- Have the student perform the task
- Test the student to gauge the quality of instruction

Dr. Shultz's organizational learning and the Marine Corps in Iraq

- ***The Learning Process***
- Many definitions of organizational learning can be found in business and management texts. But for our purposes it is Richard Downie's that is best suited for assessing the Marine campaign in Anbar. An organization demonstrates an aptitude to learn, he proposes, when it "uses new knowledge or understanding gained from experience to adjust institutional norms, doctrine, and procedures in ways designed to minimize gaps in performance and maximize future successes." This description captures the essence of what it means to be a learning organization.

The cost of a fuel spill

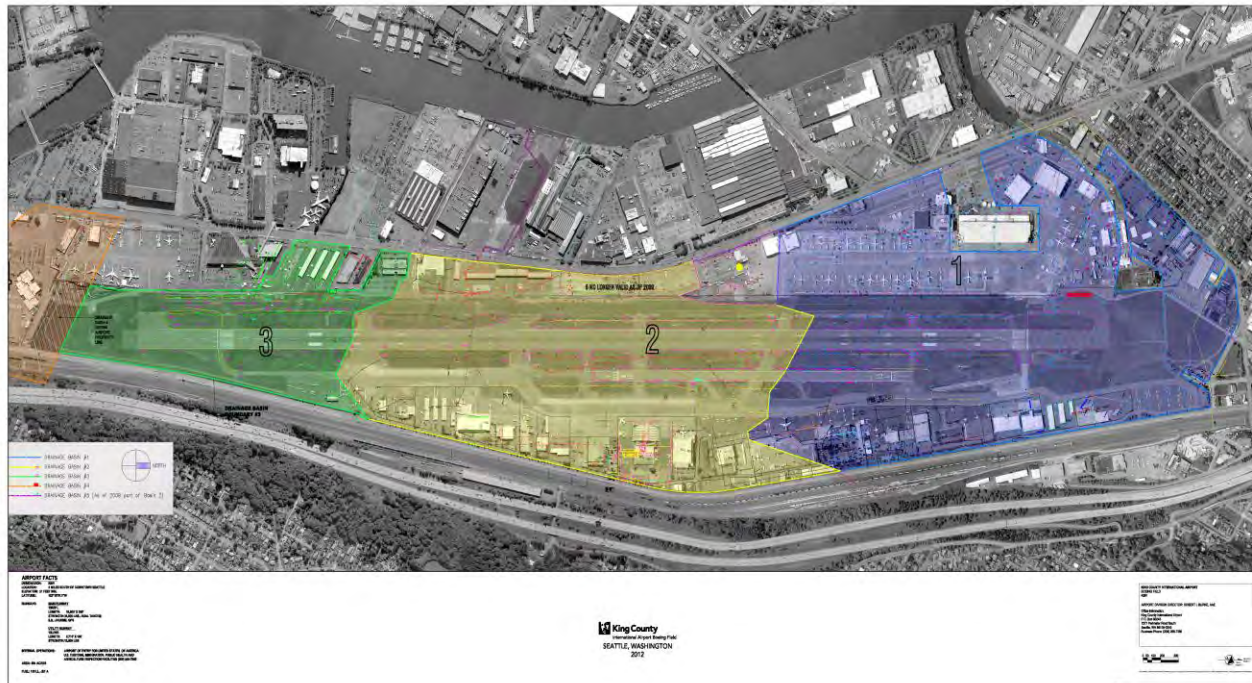
- The financial cost can be staggering and cause life safety issues, property damage and have an environmental impact.
- The cost of a fuel spill is hard to quantify but, the cost can be between \$3,000 and 10,000 dollars.
- If the spill reaches the Duwamish River the cost could possibly exceed 100,000 dollars.

Large fuel spill



Storm water drain system

- Residual fuel from small and large spills may eventually reach the Duwamish River.



Everyone is involved and has an vested interest in preventing fuel spills

- It is the right thing to do
- It is mandated by the regulations and the law
- It is the best practice
- It is a life safety concern
- It is good for the environment and the surrounding communities

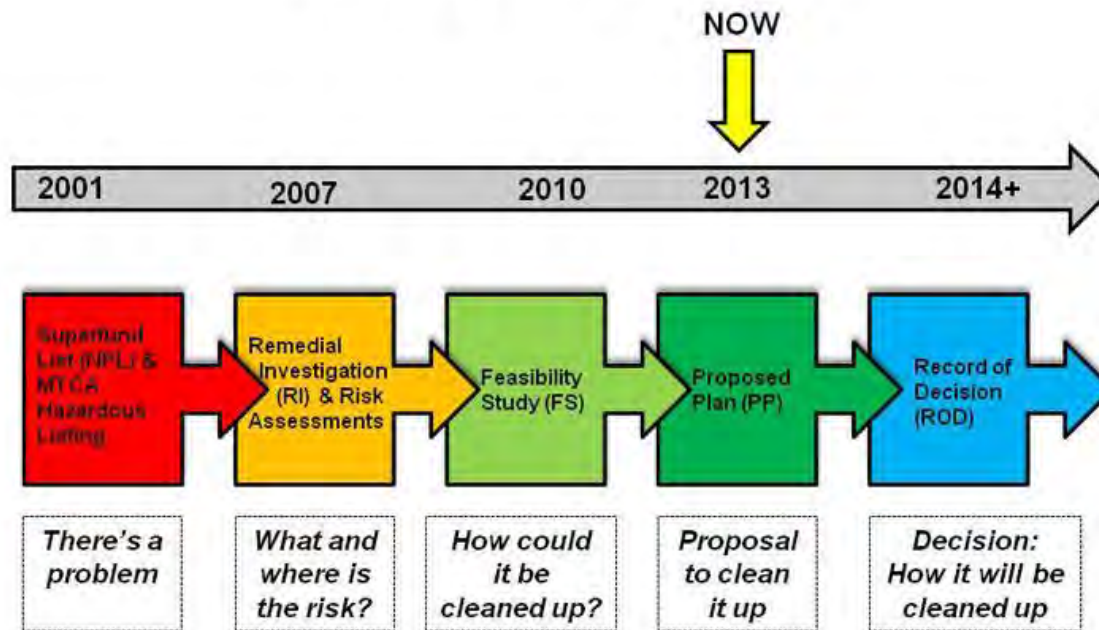
Everyone is involved

- *The stated plan goals of protecting the river environment, fish and wildlife, and human health are appropriate, so it would seem inappropriate to choose a proposed plan that, from the outset, does not provide certainty in reaching its stated goals.”*

Larry Phillips and Sally Bagshaw [King County and City of Seattle councilmembers, respectively; members of the Regional Water Quality Committee]

EPA is involved and is monitoring the current causes of pollution

Key Milestones



What do we need to do? We need to eliminate fuel spills

Do not eat any crab or resident fish from the Duwamish River

Limit consumption of Puget Sound/Duwamish Chinook to one meal per week

Do not **swim** near a sewer/stormwater outfall within 3 days of rain



We need to do it for the next
generation

