Department of Environmental Conservation

Senate Resources Overview

Commissioner Larry Hartig

January 22, 2014

DEC's Mission

Protect human health and the environment.

Divisions

- Administration
- Air Quality
- Environmental Health
- Spill Prevention and Response
- Water

Division of Air Quality

Components:

- Director's Office
- Air Quality

Director: Alice Edwards

Challenges:

- Fairbanks Air Quality
- Changing Federal Rules

Air Permits Program

- Ensure that air emissions from industrial operations in the state do not create unhealthy air
  - Authorize construction of new and modified facilities (Construction Permits and minor permits)
  - Establish compliance monitoring for existing facilities (Title V Operating Permits)
  - Conduct compliance assurance inspections and follow up on permit deviations
- Maintain an on-going process for improving consistency and timeliness of permitting
- Respond to general AQ complaints and concerns

On-going Permit Streamlining and Process Improvement

- Goal – Improve consistency and timeliness of permitting
  - Maintain high quality, legally defensible permits
  - Improve predictability by standardizing processes and permit requirements
- Quality Management System
  - Enhance consistency
  - Reduce disruptions from staff turnover
  - Guidance documents for streamlined training
- Operating Permits
  - Meetings with stakeholders to discuss issues and solutions
  - Standard permit conditions to improve efficiency
  - Standard templates and checklists for permit review and issuance
  - Consolidated reference to Federal Regulations to reduce length of permits
  - Use of contractor support for permit renewals
- Construction Permits
  - Improved application forms
  - Pre-application assistance and project scheduling
  - Use of contractor assistance to handle workload fluctuations
- Develop Partnerships
  - Providing expertise to federal activities related to North Slope and offshore development
  - Coordinating stakeholder workgroup with DNR on alternatives for drill rig permitting

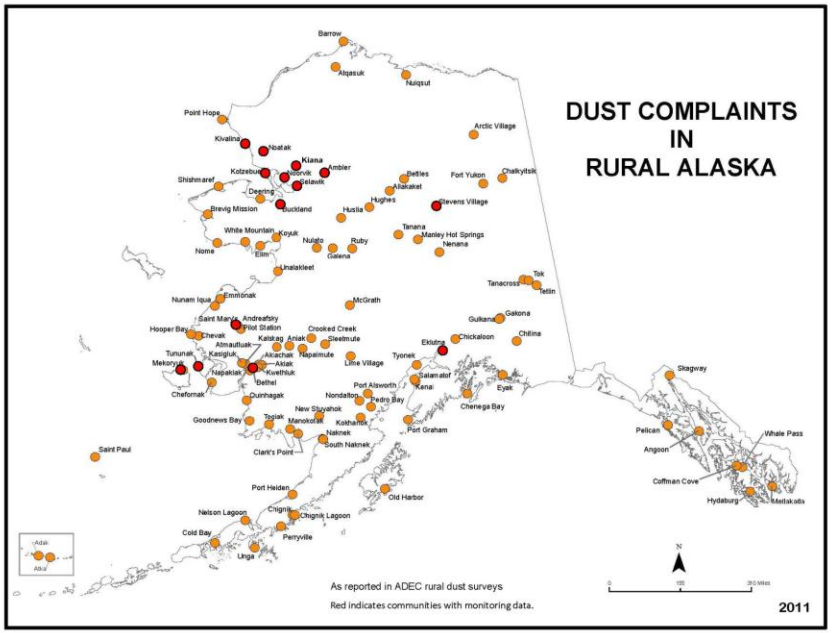
Fairbanks Fine Particulate Matter ($PM_{2.5}$)

- Fairbanks/North Pole area exceeds the 24-hour PM2.5 ambient air quality standard
- Air quality attainment plan to be submitted to EPA in 2014
- Clean Air Act has serious consequences if fail to plan or implement a plan

- Plan and control options are controversial in community
  - Home heating sources (wood and coal) are important contributors
  - DEC has been seeking public input on regulations to reduce PM2.5
  - Air quality plan to be released for public feedback this Spring
  - Continued change outs of wood heaters and expansion of natural gas important to attaining the standard

Rural Alaska Air Quality Concerns

- Dust
- Wood smoke
- Open Burning



Widespread impacts throughout the state make it difficult to effectively respond to the needs of communities

New and Revised Federal Standards and Rules

- Clean Air Act air quality standards and rules are being frequently updated by EPA
  - Can be difficult to keep up with the reviews of EPA proposals
  - Typical focus for comments is on technical concerns and Alaska specific issues that arise
  - Program must adjust as needed to address final rules

Carbon Standards for Power Plants

Wood Heater Emission Certification Standards

Nitrogen and Sulfur Dioxide National Ambient Air Quality Standards

Division of Environmental Health

Components:

- Director's Office
- Food Safety & Sanitation
- Laboratory Services
- Drinking Water
- Solid Waste Management

Also:

- Building Maintenance & Operations

Director: Elaine Busse Floyd

Challenges:

- Drinking Water EPA Rules Implementation
- High Risk Food Safety Inspections
- Unique Laboratory Technology & Equipment Needs

Food Safety and Sanitation

What We Do

- Establish standards; permit, inspect and enforce standards for food processing and food service facilities
- Establish standards and inspect on a complaint basis certain public facilities for sanitation
- Provide education and training on the safe handling of food

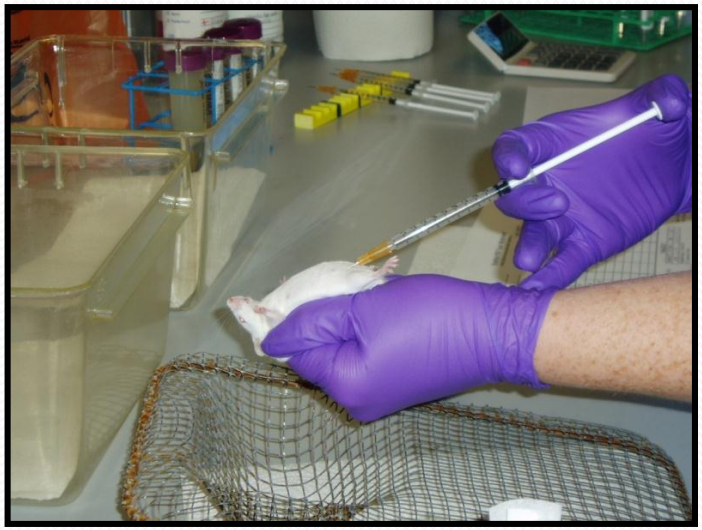
Geoduck Exports

- December 5, 2013
- Affected all exports of all shellfish from AK, WA, OR, CA
- Harvest area in question open after acceptable analyses results for Paralytic Shellfish Toxin
- Department reviewing shellfish protocols, identifying improvements
- Department working with NOAA, FDA, and WA as well as harvesters and dealers

Environmental Health Laboratory

What we do

- Inspect, evaluate, and certify 82 private laboratories to perform compliance/regulatory testing for drinking water, contaminated sites, and dairy
- Provide laboratory testing service for assessment of risks to public health, welfare and the environment:
  - food safety (manufactured food, shellfish, and food borne illness investigations)
  - drinking water
  - animal health (domestic and wild animals)
  - dairy
  - contaminant monitoring (fish tissue monitoring)
  - air filters
- Provide technical assistance to other programs regarding the acquisition, facilitation, interpretation of analytical data
- Performed 91,479 testing processes in SFY 2013; an increase of 47% over the previous year
- Extensive federal certifications from EPA, FDA, USDA that include 7 different federal programs
- Currently pursuing ISO 17025 to comply with FSMA goal by 2014. A federal grant was received to assist with funding



State Veterinarian

What do we do?

- Permit, inspect, monitor and provide technical assistance to dairy and livestock producers relating to animal health and care
- Permit and monitor the importation of animals and animal biological products (vaccines, etc)
- Surveillance and control of animal diseases
- Respond to animal health emergencies
- Collect fish samples statewide and evaluate them for environmental contaminants

Drinking Water and DEC

What do we do?

- Maintain state primacy for regulating public drinking water systems
- Enforce public water system (PWS) monitoring requirements for drinking water contaminants
- Review Construction, Installation and Operation plans and enforce engineering standards for PWS to protect public health and meet Safe Drinking Water Act requirements
- Assist PWS owners in identifying the sources of their drinking water and help them develop strategies to effectively protect those sources from contamination
- Provide PWS owners and operators with Emergency Preparedness information and onsite Response to help protect drinking water sources
- Provide technical and compliance assistance to PWS owners and operators, consulting engineers, and the public

Drinking Water and DEC

Successes and Challenges

- 61 employees, 5 offices
- Increased complexity of federal rules for both engineering, corrective action, and compliance monitoring
- Limited to no interaction with most state regulated systems due to lack of funding
- Empowered staff to work with water system owners and operators using a multimedia approach to help them achieve and also stay in compliance:
  - Educate consulting engineers who design water treatment and distribution systems and complete inspections and sanitary surveys
  - Network in partnership with Technical Assistance Providers Group
  - Community visits and public outreach

Solid Waste Program and DEC
The Basics

- 15 employees, 3 offices
- 100% of landfills accepting 5 tons or more a day (Class I and Class II) are permitted. 23 total
- 39% of rural landfills (less than 5 tons) are permitted. 188 total
- 98% of industrial landfills in Alaska are permitted. 39 total
- 100% of industrial treatment facilities are permitted. 10 total

Solid Waste Program and DEC
Rural Landfill Challenges and Successes

- Proper village landfill management is difficult due to limited resources
- Compliance improvement is a significant focus of the program
- Increased outreach and technical assistance has resulted in increased permit percentage – increase from 22% in 2011 to 39% in 2014
- Implemented regulations in 2013 that will simplify the permit application for village landfills
- Implemented new performance measure in 2013 that will measure rural landfill compliance, with the goal of increasing average inspection score to 80%

Pesticide Control and DEC

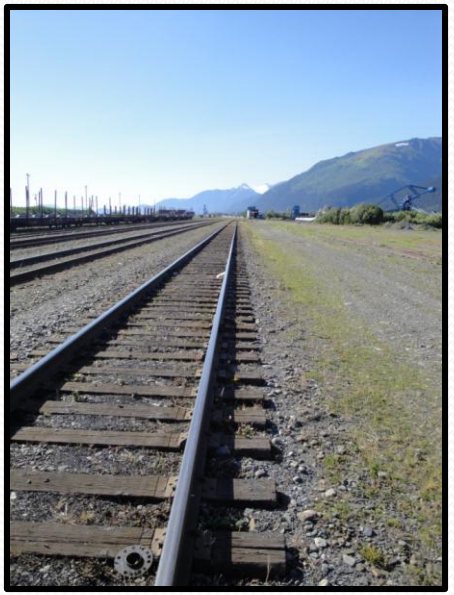
What do we do?

- Issue permits for applications to water or aerial, and on certain state or local applications
- Conduct inspections to make sure pesticide applications comply with the pesticide regulations and worker protection standards
- Conduct inspections of pesticide distributors
- Register and monitor the distribution, sale, use, and storage of pesticides - 5,000 registered products
- Train and certify pesticide applicators
- Review pesticides for potential risks to water

Pesticide Control and DEC

Successes and Challenges

- Implemented integrated pest management for better management of invasive species
- Implemented changes to address in 2013 to address difficulty for DOT, DNR, and to obtain permits
- Participating in workgroup with DNR and DFG to address invasive elodea
- Increasing expectations for commercial applicators
- Product registration on-line



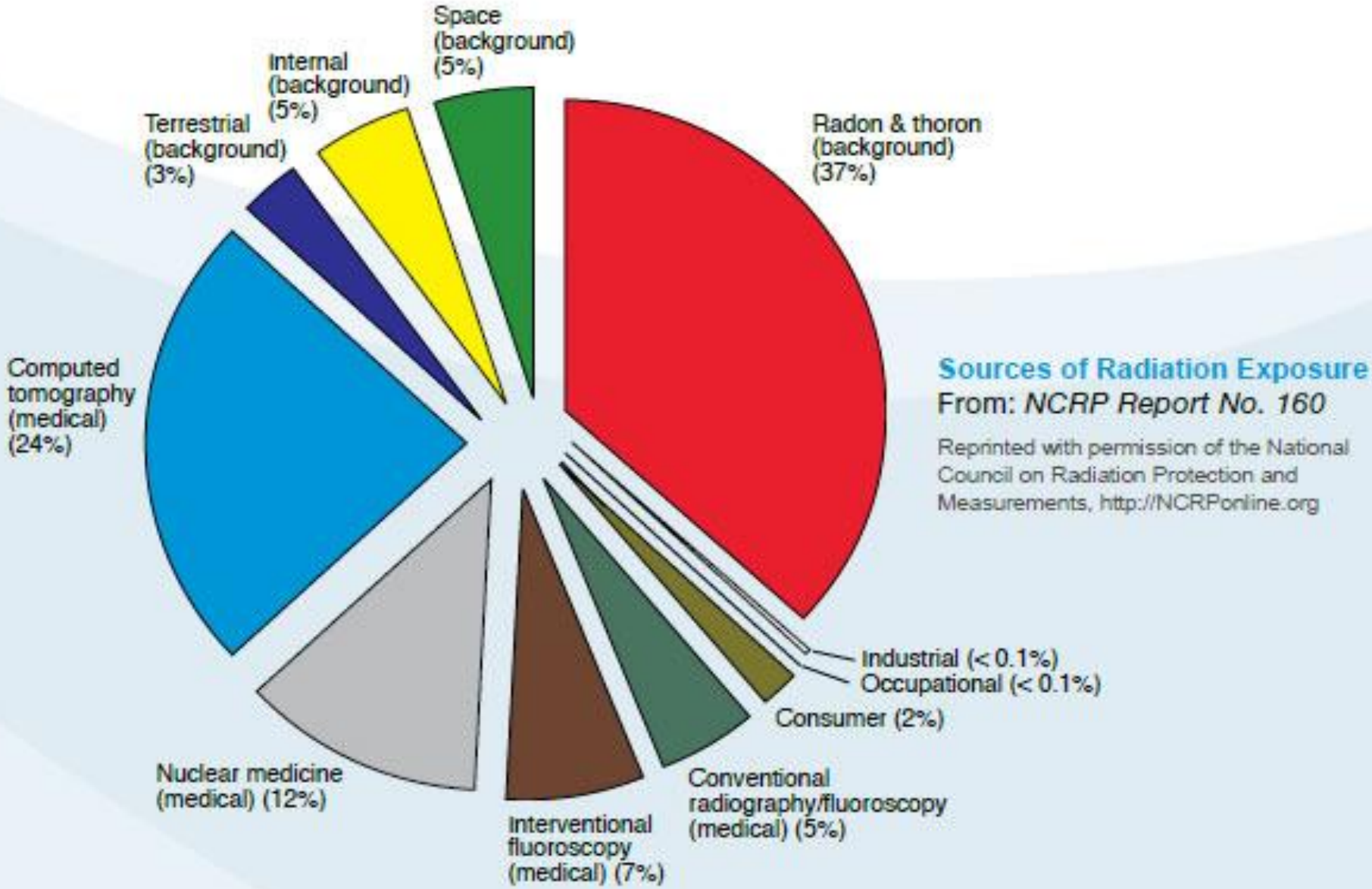
Tsunami Marine Debris

- Devastating March 2011 Earthquake and Tsunami in Japan
- Government of Japan estimated 5 million tons of debris swept into Pacific Ocean
  - Estimated 70% sank almost immediately
  - 1.5 million tons floating off coast of Japan, caught by wind and ocean currents
- Composition
  - Materials typically found in urban areas, homes, and fishing communities
  - Styrofoam, buoys, bottles, jugs, household items (refrigerators, freezers, etc)
  - Rigid urethane insulation and wood from destroyed buildings and homes
  - Fishing & boating docks, floats, bumpers, nets,
- NOAA models show debris reaching US and Canadian shores for next several years
  - High-windage (lighter) debris carried by wind; arrived much sooner than expected. More is expected to arrive in the future
  - Low-windage (heavier) debris carried by ocean current

Tsunami Marine Debris Current Status

- $1 million received from NOAA out of the Japanese Tsunami Marin Debris funds
- Two Statements of Work (SOW) completed
- Six contractors selected for debris removal and aerial survey operations
- Work to begin in the Spring 2014
- Area prioritizations completed for areas that will be concentrated on first during cleanup

Everyday Radiation

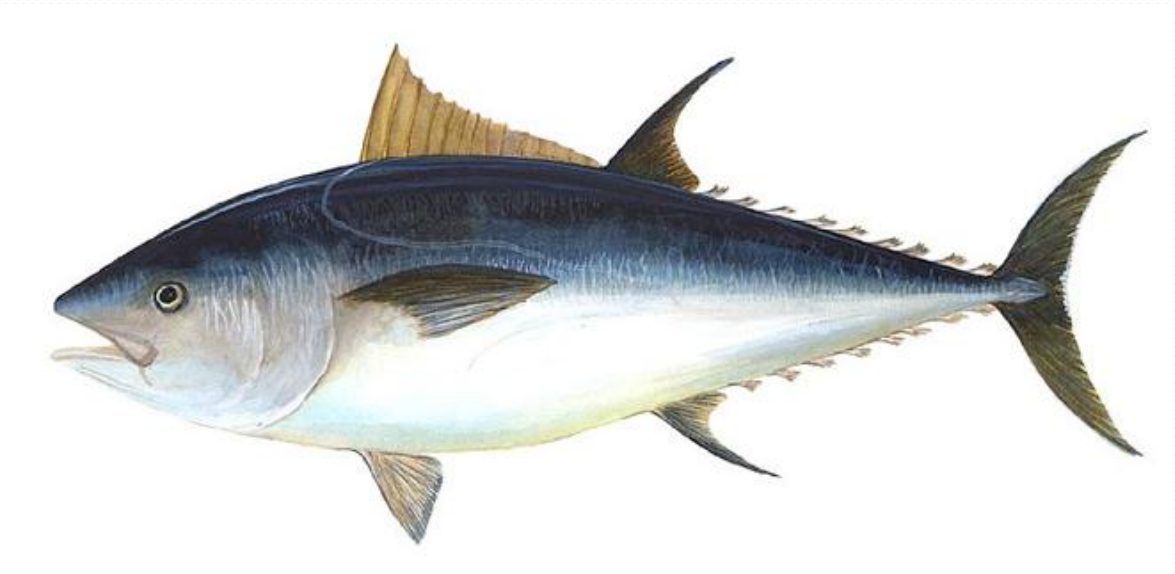


Sources of Confusion about Radiation Risk

- Sources of radiation
  - Naturally occurring
  - Industrial/Occupational
  - Medical
- Units of measurement (Activity vs. Exposure)
- Unit conversions (milli to nano to pico)
- Evaluation criteria

Radiation Risk Perspective

Bananas (*1 µSv of Potassium-40*)

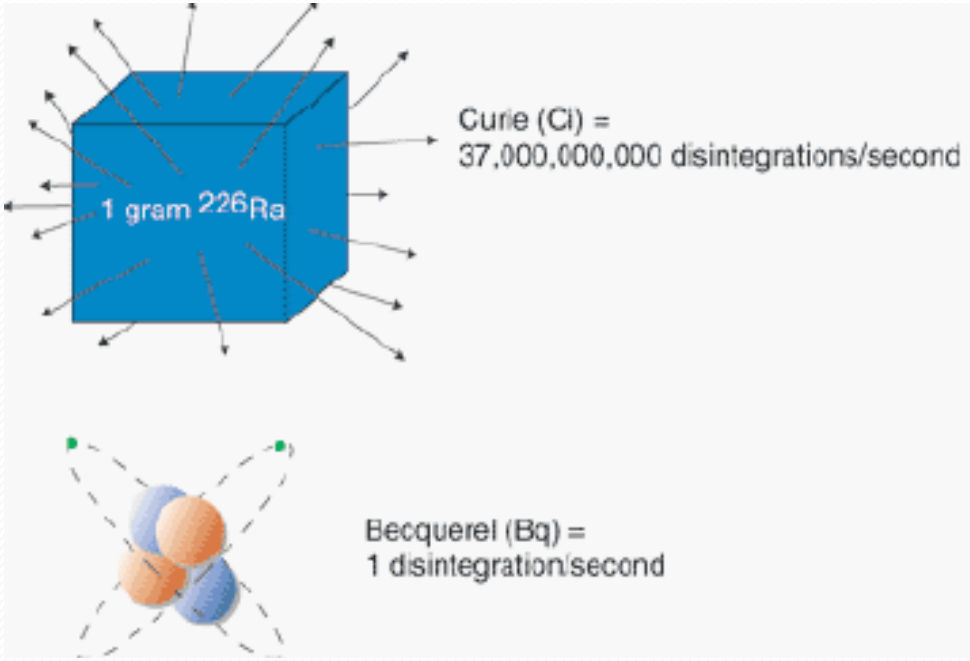


Tuna (*0.00000000000000038 µSv Cesium-137*)

Radiation Units (Activity vs. Exposure)

- Curies and Becquerels – Measure of activity; number of atoms disintegrating

- Rems and Sieverts – Equivalency unit, useful for describing whole body exposures

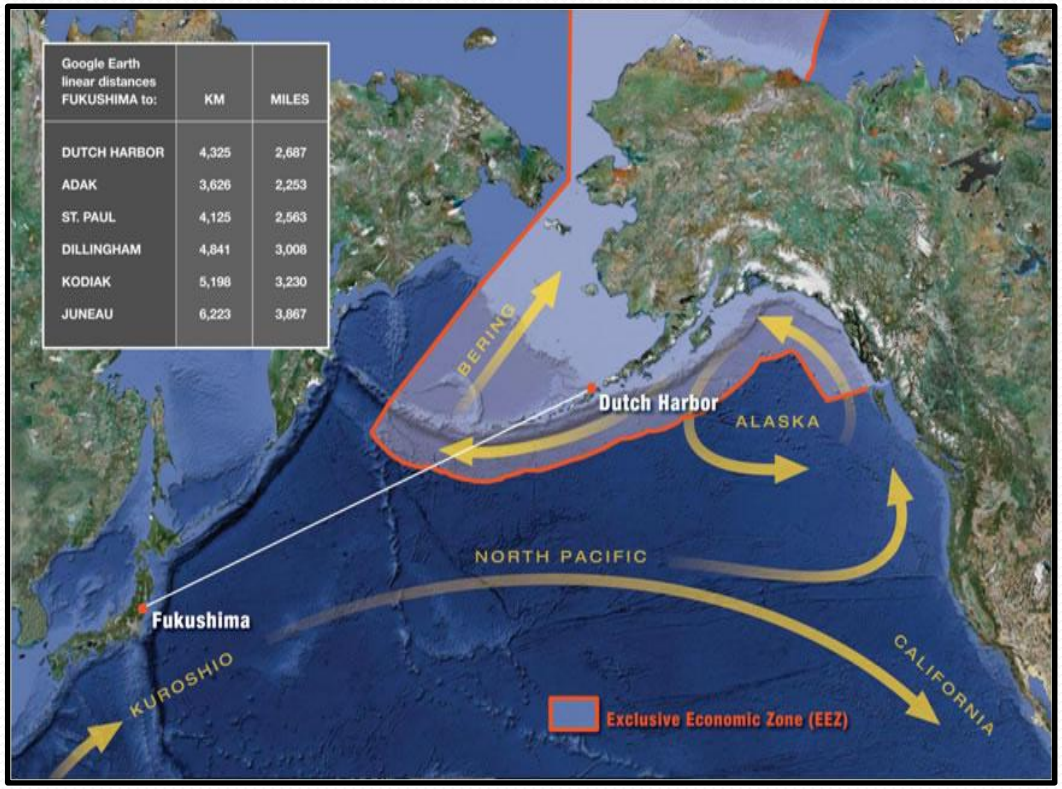


Radiation Units Conversions

- Conversions between different units
  - 1 sievert = 100 rem
  - 1 becquerel = 27 picocuries or 2.7 x 10^{-11} curies
- Conversions between orders of magnitude
  - milliSievert (mSv)= 10^{-3}Sv = 0.001Sv
  - microSievert (µSv) = 10^{-6}Sv = 0.000001Sv
  - nanoSievert (nSv) = 10^{-9}Sv = 0.000000001Sv
  - picoSievert (pSv) = 10^{-12}Sv = 0.000000000001Sv

State has found no reason for concern

- Ocean currents from Japan circulate from the west coast of the US up to AK.



- Data from Pacific states (CA, WA, HI, OR) & Canada shows no cause for concern

- FDA is lead agency on food safety & continuously monitors both domestic & imported foods

Division of Spill Prevention & Response

Components:

- Director's Office
- Industry Preparedness & Pipeline Operations
- Prevention & Emergency Response
- Contaminated Sites Program
- Response Fund Administration

Director: Kristin Ryan

Challenges:

- Declining Prevention Account Balance
- Increasing Natural Resource Activity

Industry Preparedness
Responsibilities

- Oil spill contingency plans
- Spill drills
- Inspections
- Financial Responsibility
- Oil spill primary response action contractors
- Best available technology

Cook Inlet oil spill Prevention Overview


CISPRI Broken Ice Demonstration

- 13 approved Oil Discharge Prevention and Contingency Plans.
- 4 Production plans, 7 Exploration plans, and 2 Crude Oil terminal Facilities.
- Since 2011, 4 offshore exploration wells have been drilled. 3 by Furie, and 1 by Buccaneer.
- Currently 14 of 16 platforms in Cook Inlet are active.


Endeavor Jack-up Rig on the Cosmo #1 well

SHELL OCS OVERVIEW

Oil Spill Response Vessel M/V Nanuq


Photo Courtesy of Shell

- Two wells drilled in 2012. One in the Beaufort Sea and one in the Chukchi Sea.
- Operations were suspended by Shell for the summer of 2013 due to operational issues with both drilling vessels.
- Shell may return to the Chukchi Sea in 2014 or 2015.

Aging Infrastructure Inspection and Replacement

ARCTIC COUNCIL

"The Arctic Council is a high-level intergovernmental forum to promote cooperation, coordination and interaction among the Arctic States." Read more>>

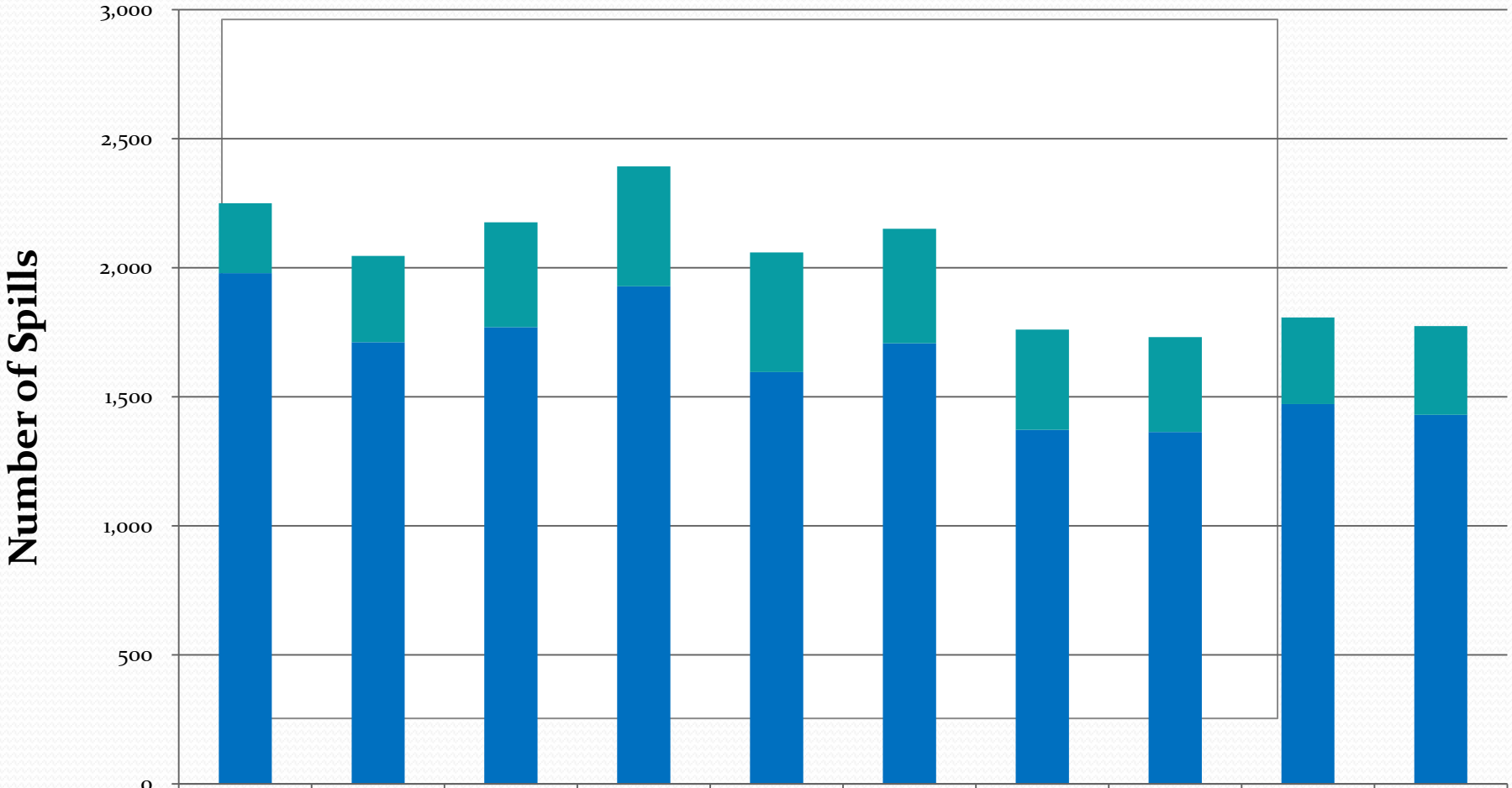
- The Alaska Department of Environmental Conservation, Division of Spill Prevention is involved in a number of Arctic discussions relating to spill prevention, preparedness, and response.

More Information
http://www.arctic-council.org/

Prevention and Emergency Response Responsibilities

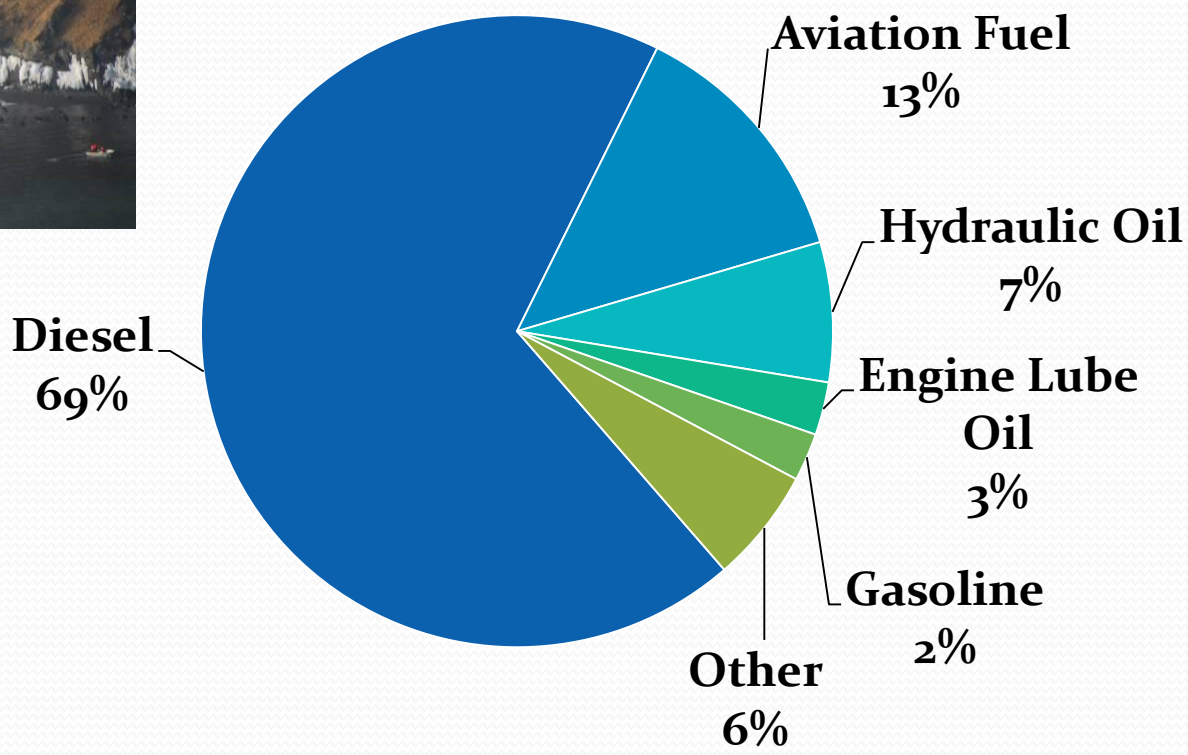
- Emergency Oil Spill Response
- Statewide Hazmat Response
- Drills and Exercises
- Unified Plan and Subarea Plans
- Local Spill Response Agreements
- Disaster Response Coordination

Spills to Land and Water (FY 2004-2013)

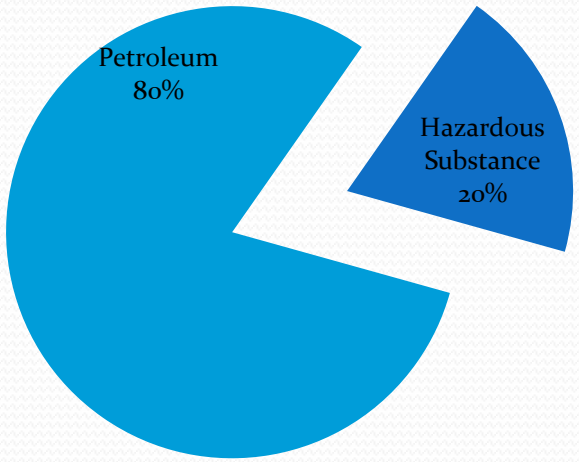


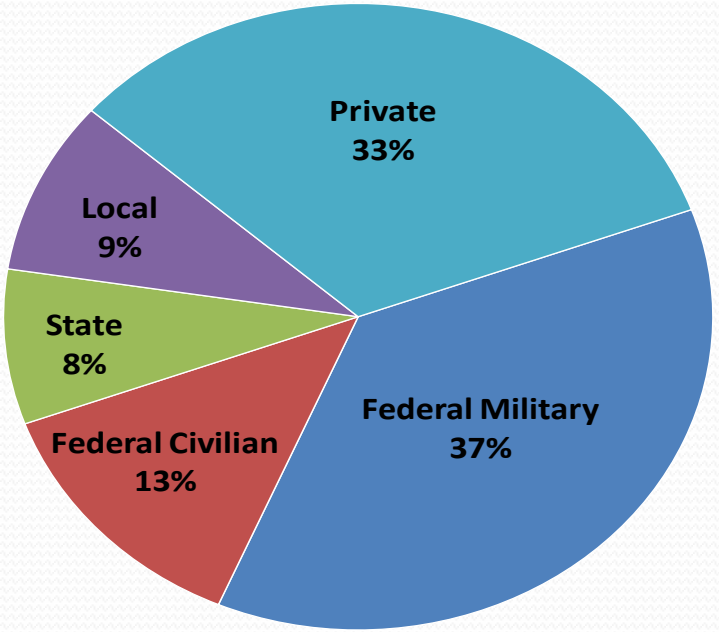
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Water	271	335	407	464	463	444	388	368	335	344
Land	1,979	1,711	1,769	1,928	1,596	1,707	1,372	1,363	1,472	1,430

Volume Released by Product - FY 2013

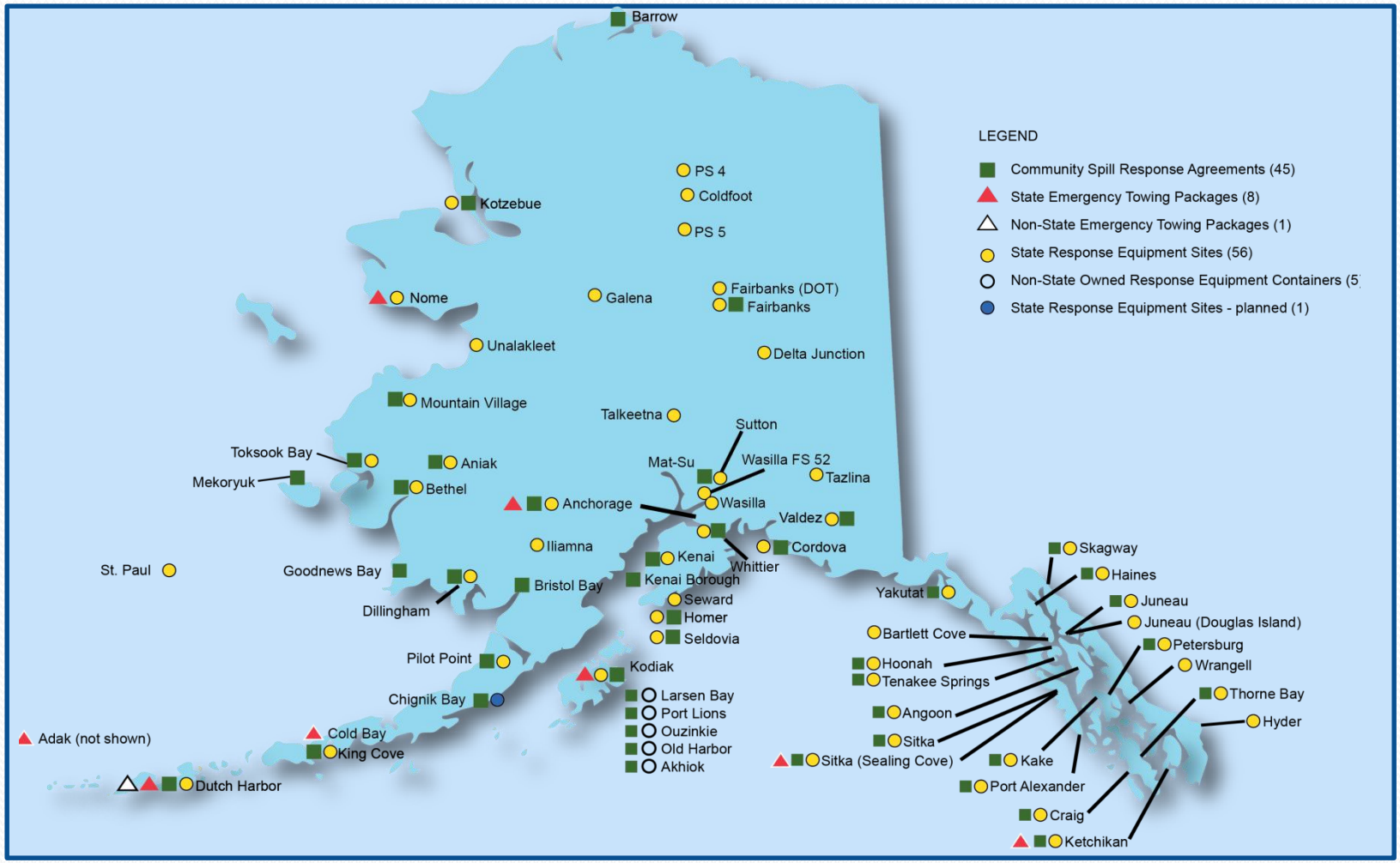


Contaminate Type and Ownership





Local Spill Response Agreements and Equipment



Galena Flooding Event 2013

Before

After

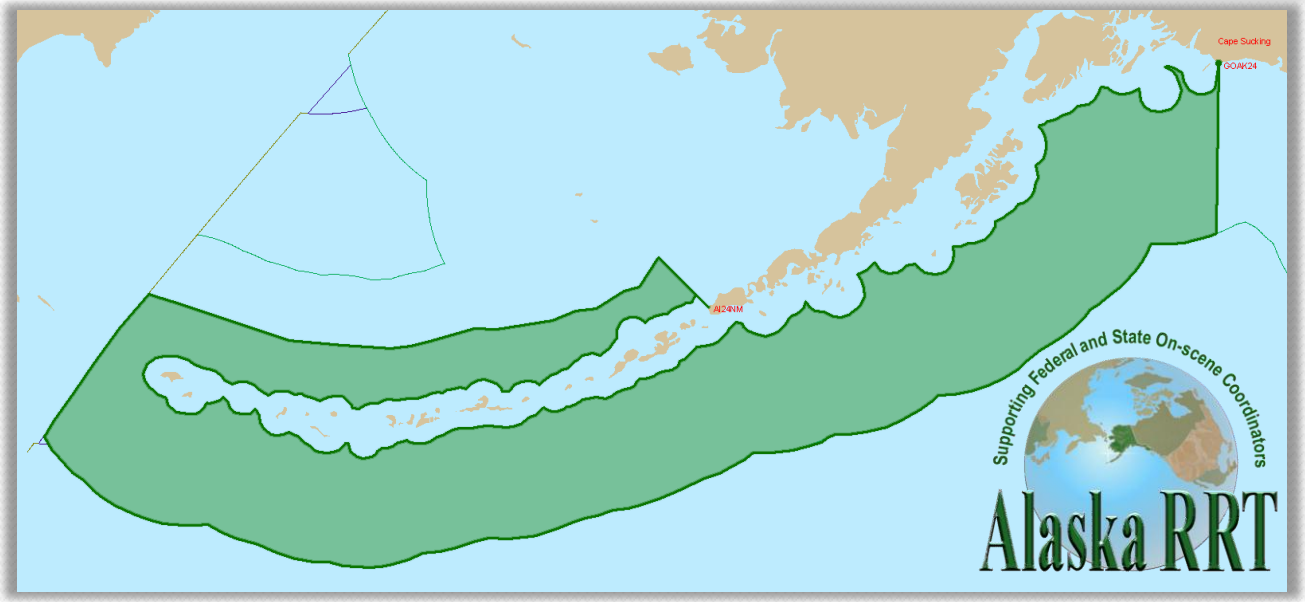
Fishing Vessels Grounding and Sinking

F/V Kodiak Isle

Oil Dispersant Authorization Plan

- **ADEC is working with other members of the Alaska Regional Response Team to develop a new Oil Dispersant Authorization Plan**
  - http://alaskarrt.org/

Photo courtesy USCG

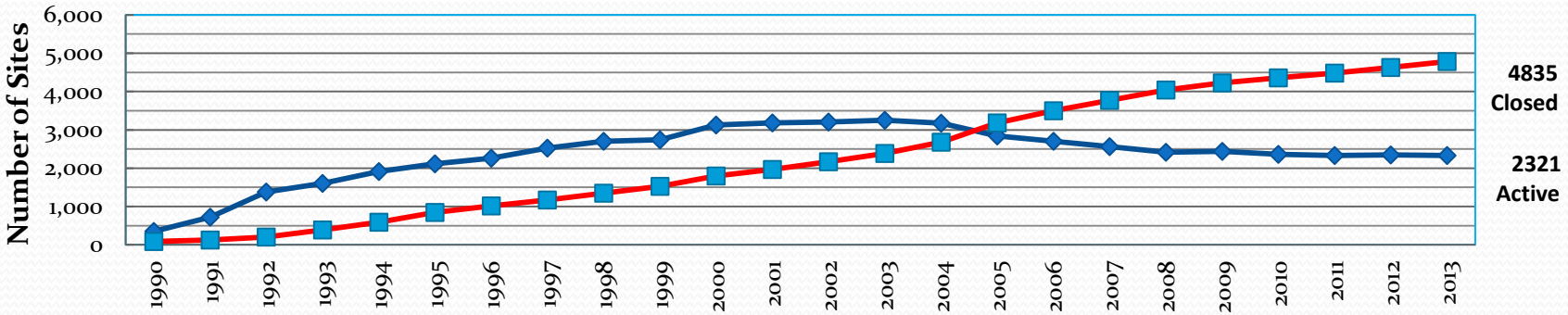


Contaminated Sites Program Responsibilities

- Site management and Reuse & Redevelopment program
- Risk-based cleanups and Cleanup standards
- Program management
- Cleanup of state, federal & private contaminated sites
- Area-wide cleanups

Cleanup of state, federal, and private contaminated sites

Chart 1: Cumulative Active and Closed Sites by fiscal year



- 7000+ contaminated sites in AK to date

Area-wide Cleanups and Alaska's Growing concerns :

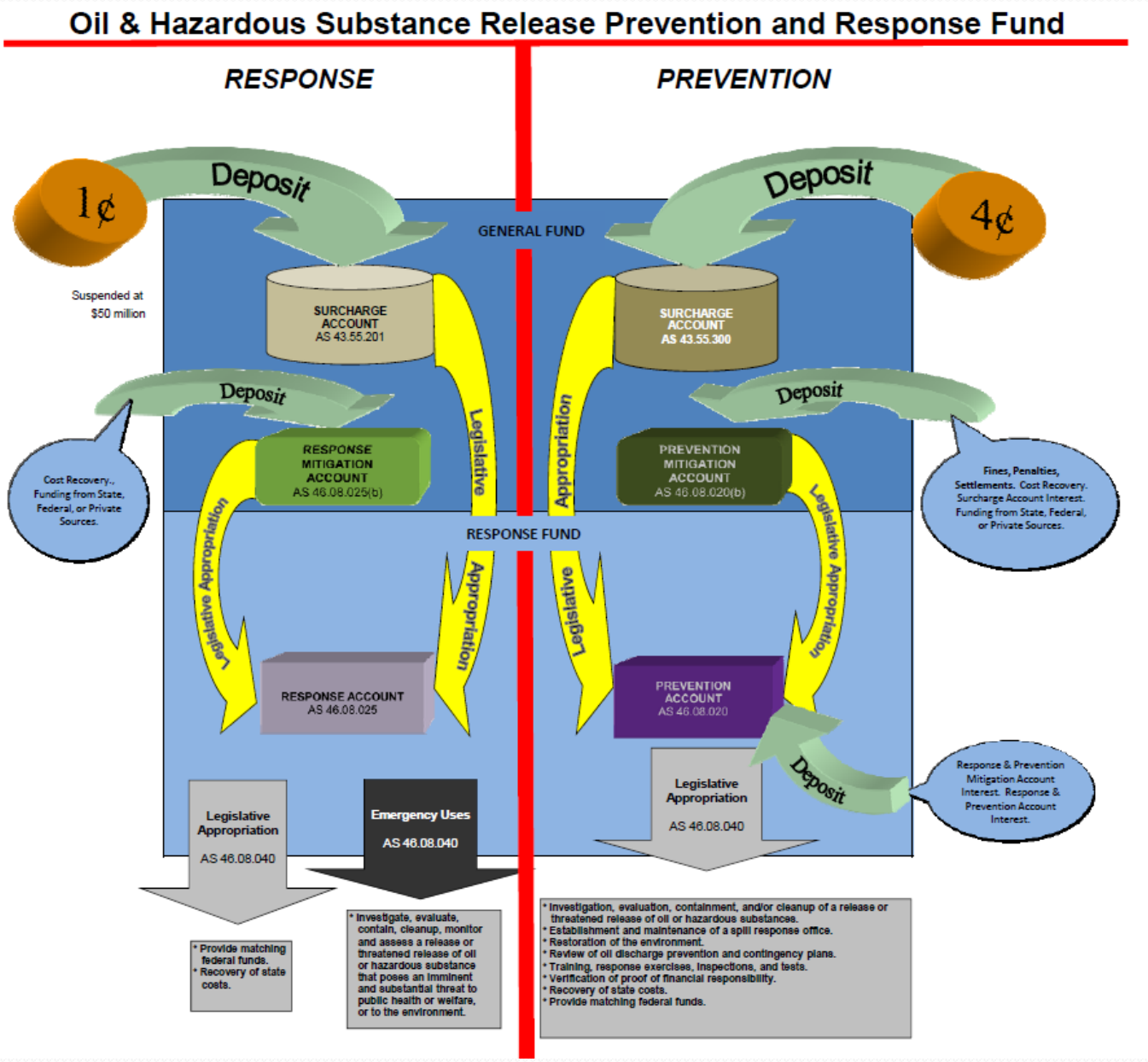
- Chlorinated solvents and ground water contamination
- Sulfolane plume near North Pole

Other Concerns: Legacy Wells

- 136 abandoned federal oil wells on North Slope
  - CSP is working with Bureau of Land Management
  - Progress is slow towards Investigating and Cleanup

- Umiuat well cleanup initiated by the US Department of Defense with $30 Million on cleanup efforts to date
  - This site is heavily contaminated with Polychlorinated biphenyls (PCBs)

Response Fund

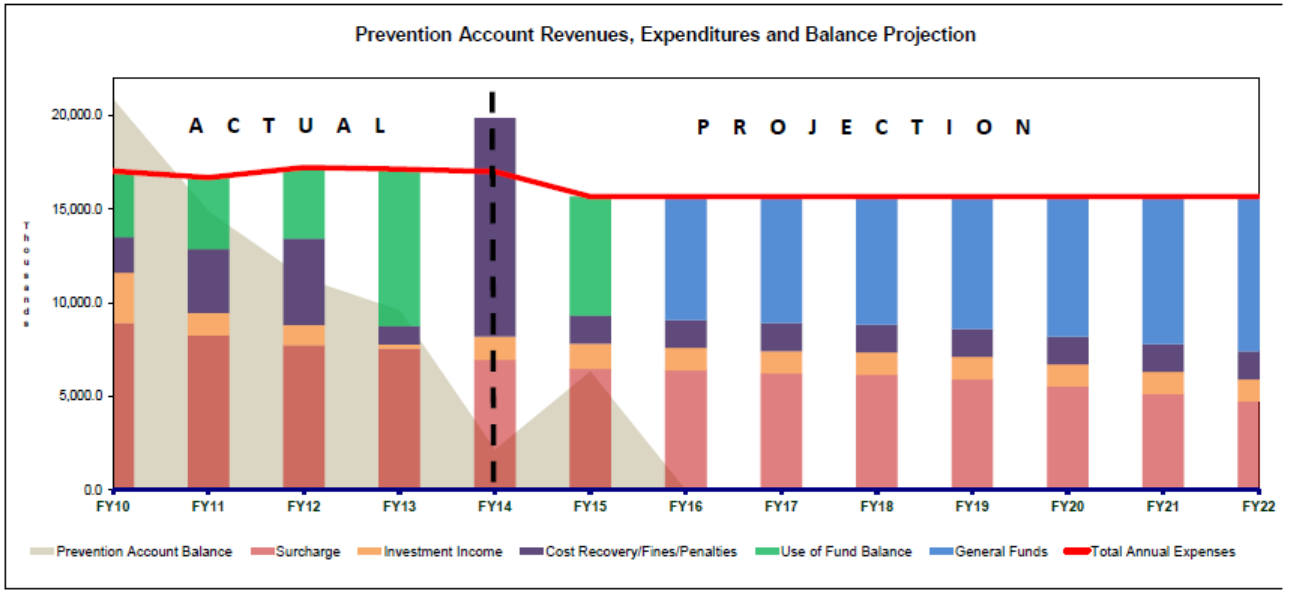


Response Fund

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
PREVENTION ACCOUNT REVENUES, EXPENDITURES, AND BALANCE PROJECTION

Actuals FY 2010 - FY 2013, Projected FY 2014 - FY 2022 based on 12.05.2013 Fall 2013 Forecast - Current 4 cent Surcharge

Line		FY10	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22
1	Unobligated Beginning Balance	20,891.9	14,870.3	11,323.0	9,599.2	2,139.3	6,325.6	(40.2)	0.0	0.0	0.0	0.0	0.0	0.0
2	**REVENUE to PREVENTION ACCOUNT**													
3	Surcharge Revenue	8,922.5	8,255.2	7,736.1	7,558.6	6,951.2	6,480.0	6,400.0	6,240.0	6,160.0	5,920.0	5,520.0	5,120.0	4,720.0
4	Cost Recovery/Fines/Penalties	1,911.9	3,425.0	4,625.4	976.4	11,689.3	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0	1,500.0
5	Investment Income	2,690.2	1,199.7	1,079.8	215.8	1,238.5	1,334.9	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0	1,185.0
6	**Total Annual Revenue**	13,524.6	12,879.9	13,441.3	8,750.8	19,879.0	9,314.9	9,085.0	8,925.0	8,845.0	8,605.0	8,205.0	7,805.0	7,405.0
7	**EXPENSES from PREVENTION ACCOUNT**													
8	Operating	13,334.3	14,447.3	15,030.7	15,344.8	15,692.7	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7
9	Capital	3,710.3	2,250.4	2,210.5	1,806.3	1,320.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	**Total Annual Expenses**	17,044.6	16,697.7	17,241.2	17,151.1	17,013.5	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7	15,680.7
11	Use of Fund Balance	3,520.0	3,817.8	3,799.9	8,400.3	0.0	6,365.8							
12	**Obligations and Other Activity**													
13	New Capital Appropriations	5,750.0	2,000.0	100.0	750.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	Less: Capital Expenses	(3,710.3)	(2,250.4)	(2,210.5)	(1,806.3)	(1,320.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	Increase (Decrease) in Outstanding Capital Appropriations	2,039.7	(250.4)	(2,110.5)	(1,056.3)	(1,320.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	Other Activity - Changes in Receivables and Liabilities	461.9	(20.1)	34.4	115.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	**Total Increase (Decrease) in Obligations and Other Activity**	2,501.6	(270.5)	(2,076.1)	(940.4)	(1,320.8)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	**Summary**													
19	Unobligated Beginning Balance	20,891.9	14,870.3	11,323.0	9,599.2	2,139.3	6,325.6							
20	Add: Total Annual Revenue	13,524.6	12,879.9	13,441.3	8,750.8	19,879.0	9,314.9							
21	Less: Total Annual Expenses	(17,044.6)	(16,697.7)	(17,241.2)	(17,151.1)	(17,013.5)	(15,680.7)							
22	Less: Total Increase (Decrease) in Obligations and Other Activity	(2,501.6)	270.5	2,076.1	940.4	1,320.8	0.0							
23	**Unobligated Ending Balance**	14,870.3	11,323.0	9,599.2	2,139.3	6,325.6	(40.2)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	**Other Appropriations:**													
25	General Fund Other							6,595.7	6,755.7	6,835.7	7,075.7	7,475.7	7,875.7	8,275.7
26	Transfers from Other Funds	0.0	0.0	0.0	0.0	0.0	0.0	6,595.7	6,755.7	6,835.7	7,075.7	7,475.7	7,875.7	8,275.7



Division of Water

Components:

- Water Quality
- Facility Programs

Director: Michelle Bonnet Hale

Challenges:

- Continuing to build APDES Compliance Program
- 404 Assumption Analysis
- Sustaining the Village Safe Water Program

Division of Water

Water Quality Programs

- **Wastewater Discharge Permitting**
- **Cruise Ship**
- **Water Quality Standards, Assessment, & Restoration**
- **Compliance**
- **404 Program Development**

Wastewater Discharge Permitting

- All discharges of wastewater to water, land, or the subsurface require a discharge permit (AS 46.03.100)

Wastewater Discharge Permitting

- Alaska Pollutant Discharge Elimination System (APDES)
- Delegated from EPA
- Phased in between 2008 and 2012
- Full primacy at this time
- EPA retains oversight
- State wastewater discharge permits for cruise ships

Cruise Ship Program

- Air emissions, Ocean Rangers, wastewater permits
- Large cruise ship general permit
  - 2013 statute changes allow for mixing zones
  - 2010 permit extended to Dec 2015
  - Outreach in Juneau, Ketchikan, and Sitka
  - New permit in draft form
  - Will be available for public comment
  - Underway & docked mixing zones

Water Quality Standards

- Alaska's water quality standards adopted in regulation are developed by DEC and approved by EPA

- Water quality standards are used
  - To set wastewater discharge limits in permits
  - To evaluate the health of waters

- Alaska routinely reviews and updates

404 Program Development

- "Dredge and fill" program
- HB 80 passed in 2013
- With DNR, analyzing possible assumption of program
- Currently run by Army Corps of Engineers
- Concurrently working on possible programmatic general permits
  - Can do without assuming program

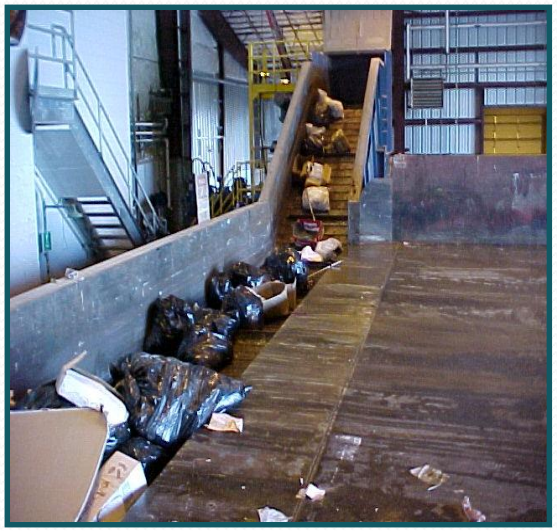
Division of Water Programs

Facility Programs:

- Municipal Grants & Loans
- Village Safe Water
- Operations Assistance

Municipal Grants and Loans

- Fund sanitation projects in larger communities
- Grants
  - State Matching Grants
    (AS 46.03.030)
  - Grant based on population size
    - 60% (10,000+)
    - 70% (1,000 < 10,000)
    - 85% (<1,000)



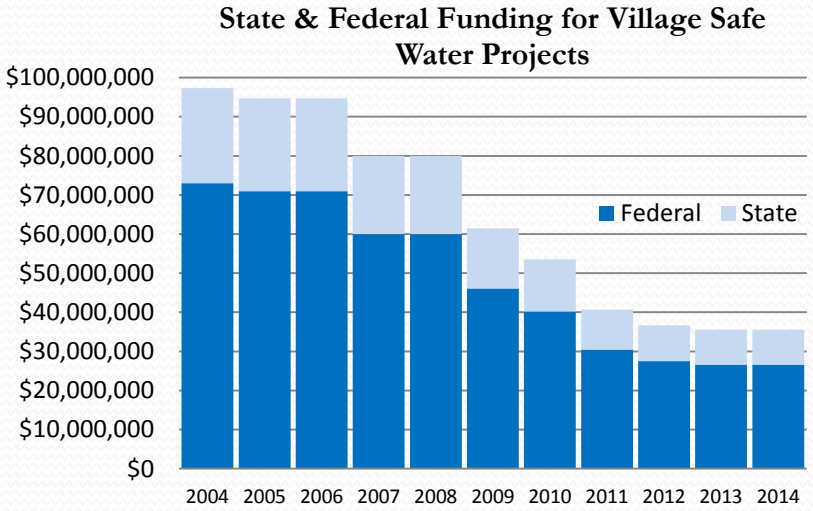
Municipal Grants and Loans

- Financing (loans):
  - Clean Water Loan Fund (AS 46.03.032)
  - Drinking Water Loan Fund (AS 46.03.036)
    - 100% of eligible costs to a community that can afford loan
    - Low-interest
      - 1.5% for 5-20 year term
      - 1% for under 5 year term

Village Safe Water (VSW)

- Mission
  - Work with smaller, rural communities to develop sustainable sanitation facilities
    - Provide safe water and sewage disposal in villages
    - Provide 100% grants for planning, design and construction projects

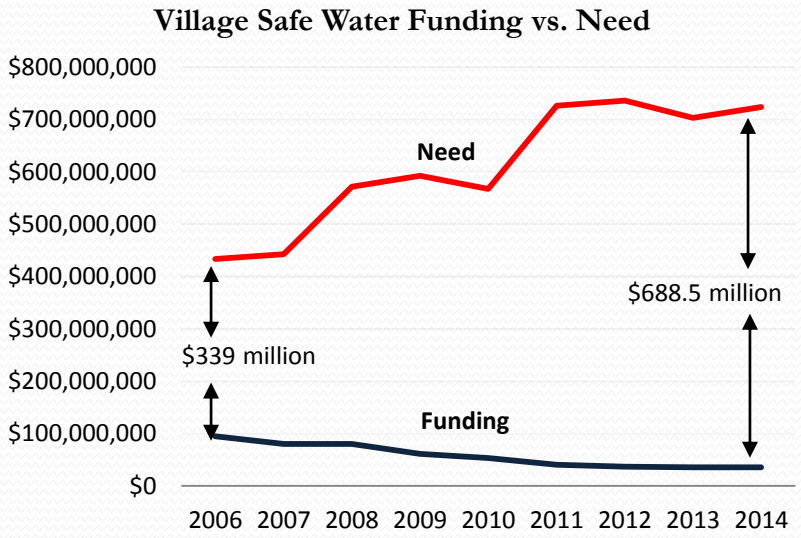
Rural Alaska Water & Sewer



Funding for Village Safe Water projects has declined by over $61.8 Million, or 64% between 2004 and 2014.

The graph on the right includes two types of needs:

1. First time service for homes without piped or covered haul.
2. Upgrades or replacement to address significant health threats.



Remote Maintenance Workers

- 15 Remote Maintenance Workers
  - 12 working for 6 Regional Health Corporations
  - 3 DEC employees
- Routine travel to villages to provide “over-the-shoulder” assistance to facility operators
- Emergency travel to provide immediate response to facility freeze up/break downs
- Remote monitoring pilot – RMWs in Anchorage & Bethel to monitor treatment plants in villages

Questions?