



# Department of Environmental Conservation

Senate Resources Committee

Larry Hartig, Commissioner

Kristin Ryan, Director, Division of Spill Prevention and  
Response

Alice Edwards, Director, Division of Air

Michelle Hale, Director, Division of Water

Elaine Busse Floyd, Director,  
Division of Environmental Health (by phone)

February 2nd, 2015



# DEC's Mission

Protect human health  
and the environment.





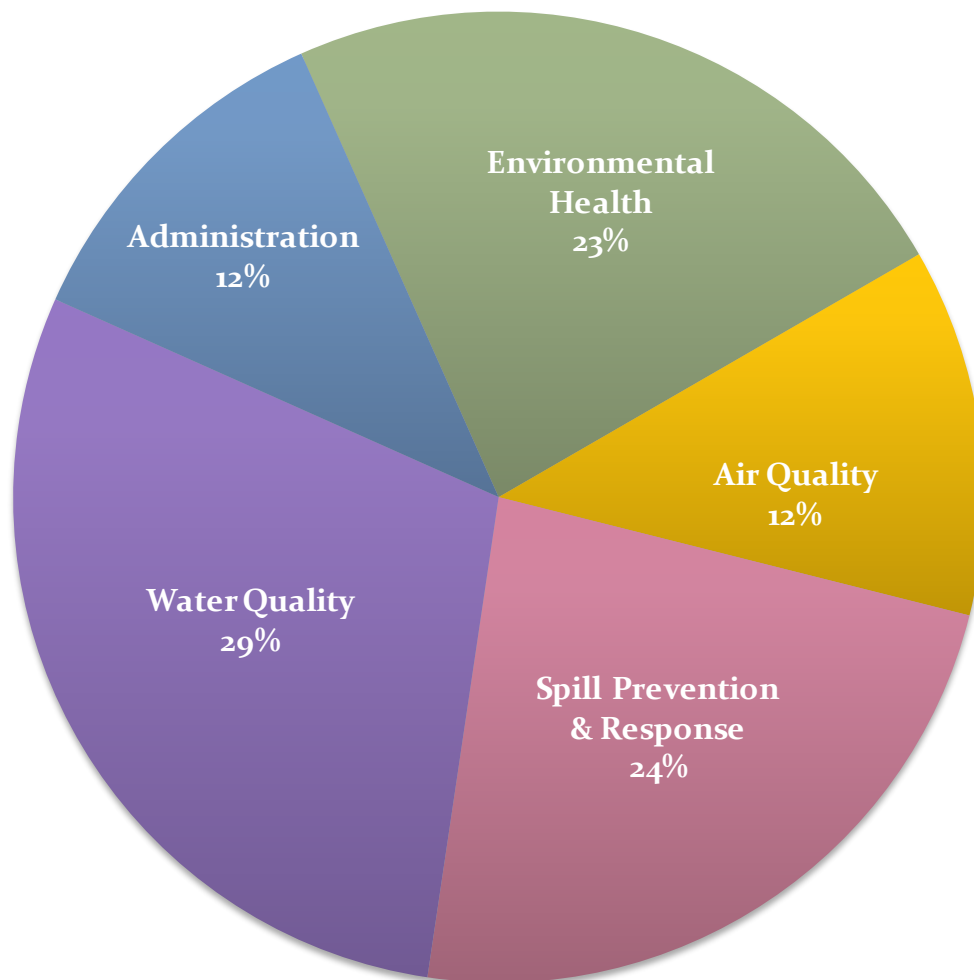
# Outcomes

- Clean water, healthy air, and good management of hazardous materials and waste
- Safe drinking water and sanitary waste disposal
- Food safe to eat
- Low risk of spills and efficient, effective response when spills occur
- Wise resource development for a growing state



# Divisions

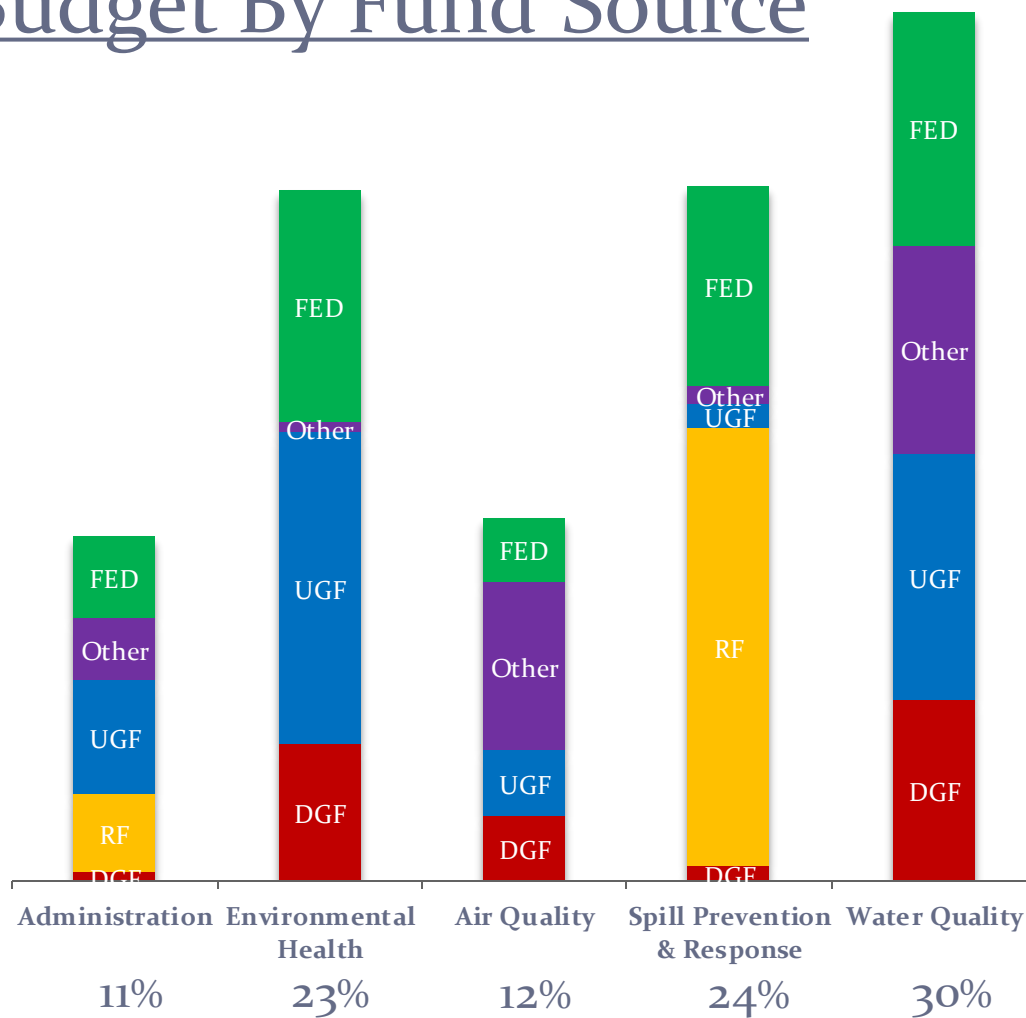
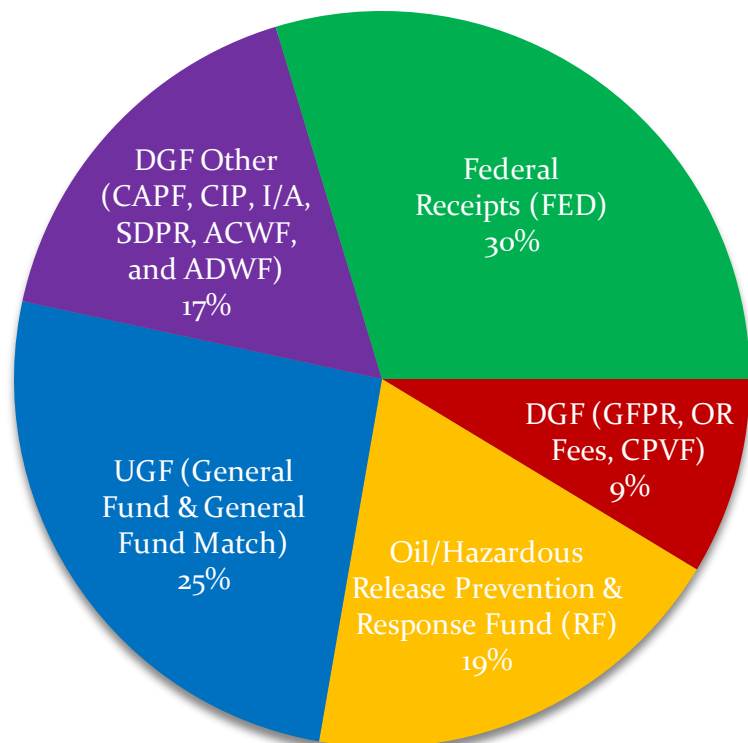
- Administration
- Environmental Health
- Air Quality
- Spill Prevention and Response
- Water



Percent Funding per Division (All Funds)  
FY2016 Governor's Work-in Progress Budget Request



# FY2016 Operating Budget By Fund Source





# Division of Spill Prevention & Response

## **Programs:**

- Prevention, Preparedness, and Response
- Contaminated Sites Program
- Response Fund Administration

Director:

Kristin Ryan

## **Challenges &**

## **Opportunities:**

- Sustainable funding
- Continued level of services to protect the environment and human health
- Helping responsible parties do what is necessary
- Reducing number of spills through prevention







# Our Mission in SPAR

Protect public safety, health and the environment through prevention, preparedness and cleanup of oil and hazardous substances.

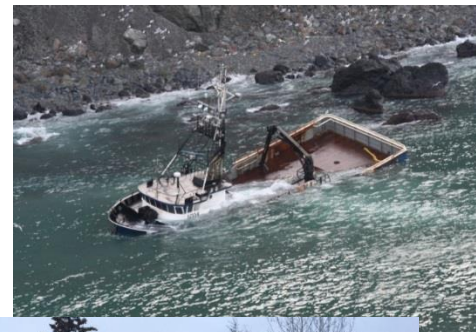




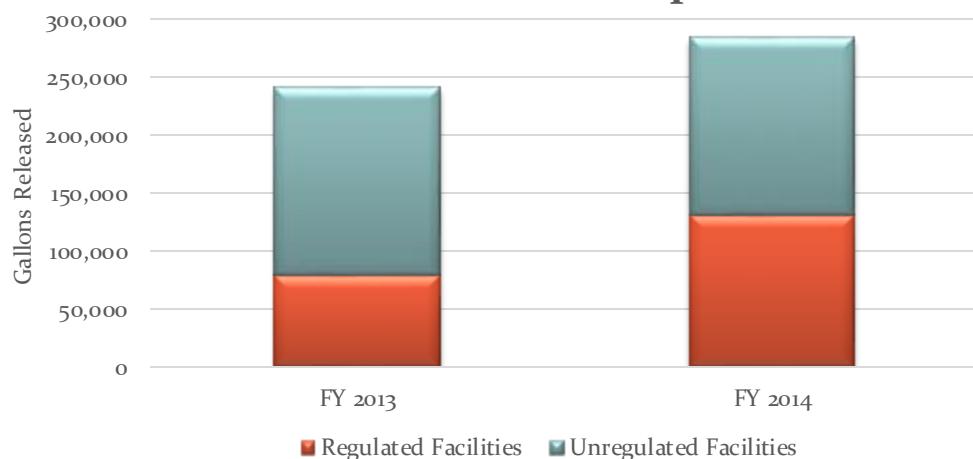
# Unregulated Facility Spills

Includes the following facility types:

- Air transportation
- Vessels
- Residences
- Vehicles



Volume of Oil Spilled







# Sustainable Funding and Declining Oil Production

The Oil and Hazardous Substance Release Prevention & Response Fund was created by the legislature to abate oil or hazardous substances releases. AS 46.08.005



- Oil production needs to be approximately 1 million barrels a day to sustain the Division's prevention and response work at current surcharge rate.
- Interest earnings are unpredictable and unreliable as a revenue source
- Settlements and penalties are unpredictable and unreliable.



# SPAR has reduced use of the fund

- Growth limited to 2 PCNs in ten yrs
- Appropriations have increased only 1.6% annually in same ten years
- Maintained level of service and took on new responsibilities (railroad, non-tank vessels)

## **Eliminated draws on account**

- Eliminated a loan and grant program for removal of underground storage tanks (UST)
- Withdrew efforts to fund statewide hazmat team
- Stopped requesting capital appropriations for cleanup of state-owned sites from fund





# Considerations in Addressing the Shortfall

- Do not increase the risk from spills
- Recognize declining production and the impacts of this to the sustainability of the Response Fund
- Collaborate with existing and potential payees into the Response Fund to identify the correct amount and allocation
- Look to other sources to identify fair and reasonable alternatives to help sustain the fund
- Continue to look for efficiencies in SPAR, partnerships, new technologies, better assessment of risks, and improvement to cost recovery



## Additional changes in FY15

- Reduced management overhead
  - Restructured contaminated sites program
  - Combined prevention, preparedness, and response into one program
- Streamlined billing process by automating informal cost recovery
- Transferred informal cost recovery work from Department of Law to Division

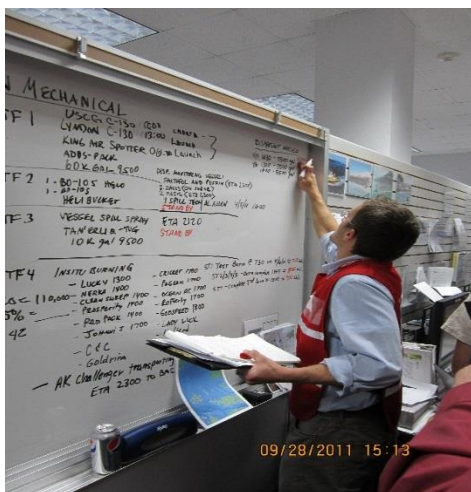
**RESULT: Reduced yearly operating costs  
by \$520K**





# Combining two programs

- Reduce costs & improve operations
- Gain consistency in our work & bridge gaps
- Better partner with stakeholders
- Continue to protect the environment and public health
- Manage limited staff resources effectively







# Administrative costs

## **Division administrative costs (approximately \$1.6 million)**

- Cost recovery AS 46.08.070 requires department attempt to recover 100% of costs incurred in the cleanup or containment of oil or a hazardous substance that has been released.
- Budgeting, accounting (contracts, supplies, travel) and procurement
- Databases, tracking tools (information technology)

## **Division of Administration Services (DAS) costs (approximately \$2 million)**

- Common costs (copiers, janitorial, utilities, parking lots, insurance, leases, heating, phones etc).
- Personal service costs for all department level administrative support.
- Total administrative costs for the Department are proportionally allocated according to a federally approved cost allocation plan.



## New program – Prevention, Preparedness, and Response (PPR)

- Ensuring producers, transporters and distributors of oil and hazardous substances **prevent** spills and are **prepared** materially and Financially to respond and **clean them up**.
- Pipeline and Tank Integrity (engineering)
- Terminals and Tank Farms
- Marine Vessels
- Local response communities





# The work PPR does

- Oil spill contingency plans (inland and vessel)
- Drills & Inspections
- Financial responsibility
- Best available technology
- Primary response action contractors (Oil Spill Response Operator)
- Regional response plans
- Response







# Aging Infrastructure





## Cook Inlet Overview

- 44 Approved Contingency plans (C-plans)
- 15 Production or Exploration C-plans
- 11 Crude Oil Terminal Facility C-plans
- 18 Vessel C-plans
- 14 Active Platforms in Cook Inlet



## North Slope Overview

- 35 Approved C-plans
- 20 Production and Exploration C-plans
- 3 Oil terminal Facility C-plans
- 12 Vessel C-plans

**Remote areas, broad range of technology,  
all companies depend on 3<sup>rd</sup> party oil spill  
clean-up contractor.**







# Shell OCS Overview

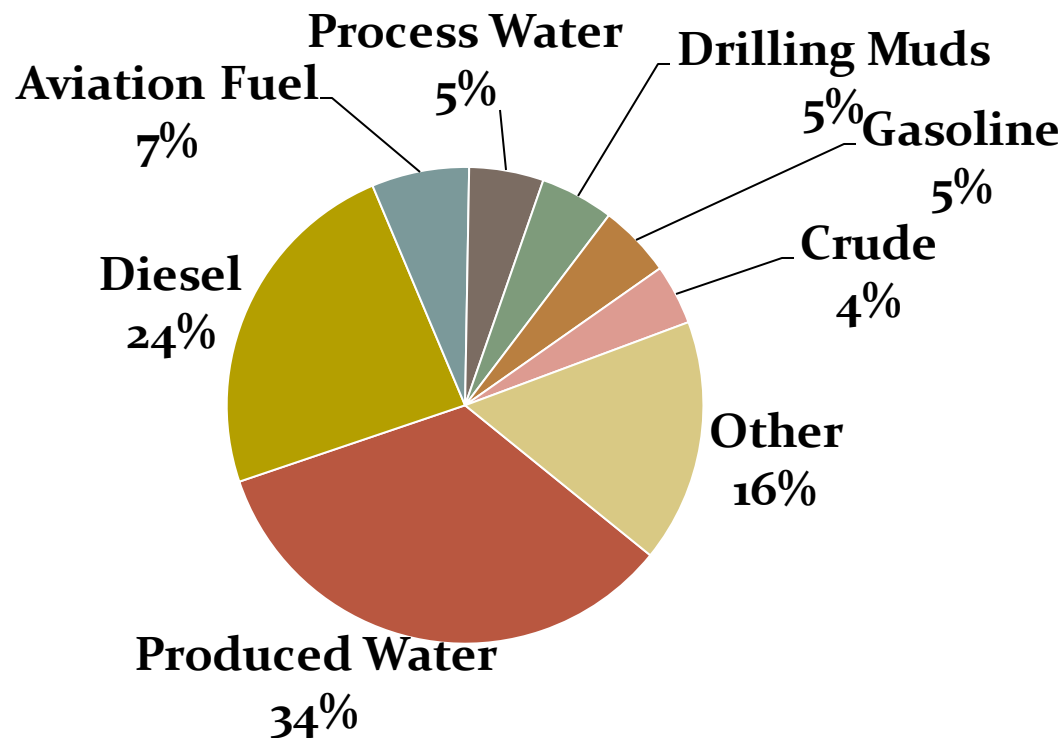
- 2 wells drilled (top hole only) in 2012. 1 in the Beaufort Sea and 1 in the Chukchi Sea
- Shell Response fleet consists of 24 response vessels, 29 skimming systems, 5 barges, 86 recovery tanks, and 26,200 feet of various boom. The same resources are listed for both theaters.
- Shell is a member of Alaska Clean Seas and has access to their equipment as well.
- Shell has continued to involve DEC on planning issues even though the leases are in federal waters.
- Activity in 2015 dependent on federal agency and federal court actions.





## All Products - FY2014 Volume Released by Product

Spills Reported: 2,028  
Total Gallons: 284,729



'Other' includes product categories comprising 3% or less of the total volume released.



# FY 2014 Spill Summary – Top 5 List

## **Top 5 Products Spilled:**

|                  |            |                |
|------------------|------------|----------------|
| • Produced Water | 41 spills  | 96,736 Gallons |
| • Diesel         | 427 spills | 67,889 Gallons |
| • Aviation Fuel  | 68 spills  | 18,855 Gallons |
| • Process Water  | 21 spills  | 14,385 Gallons |
| • Drilling Muds  | 28 spills  | 14,209 Gallons |

## **Top 5 Facility Types:**

|                          |            |                |
|--------------------------|------------|----------------|
| • Natural Gas Production | 28 spills  | 85,037 Gallons |
| • Oil Production         | 335 spills | 53,188 Gallons |
| • Air Transportation     | 65 spills  | 19,358 Gallons |
| • Vessel                 | 166 spills | 18,997 Gallons |
| • Mining Operation       | 305 spills | 16,547 Gallons |



# FY 2014 Top 5 Causes of Spills



- Seal Failure 70 spills 92,992 Gallons
- Human Error 354 spills 26,623 Gallons
- Leak 301 spills 24,638 Gallons
- Line Failure 124 spills 23,831 Gallons
- Overfill 74 spills 23,719 Gallons



# Incidents







# Contaminated Site Challenges:

- Sites with multiple responsible parties take years before a settlement is reached
  - Aniak
  - West Nome Tank Farm
- Bureau of Land Management (BLM) Legacy wells
- Bureau of Indian Affairs (BIA) schools

## **Home Heating Oil Tanks**

- Not regulated
- Often not discovered until extensive contamination
- Responsible party unable to afford clean up





# Flint Hills

- The North Pole Refinery was the largest in the State
- Sulfolane has been in use at the refinery since 1985 and was first detected off the refinery property in 2009
- To date, sulfolane has been detected in approximately 400 private drinking water wells
- The plume covers an area of approximately 9 square miles and continues to expand
- Flint Hills is currently supplying drinking water to any household with detectable concentrations of sulfolane

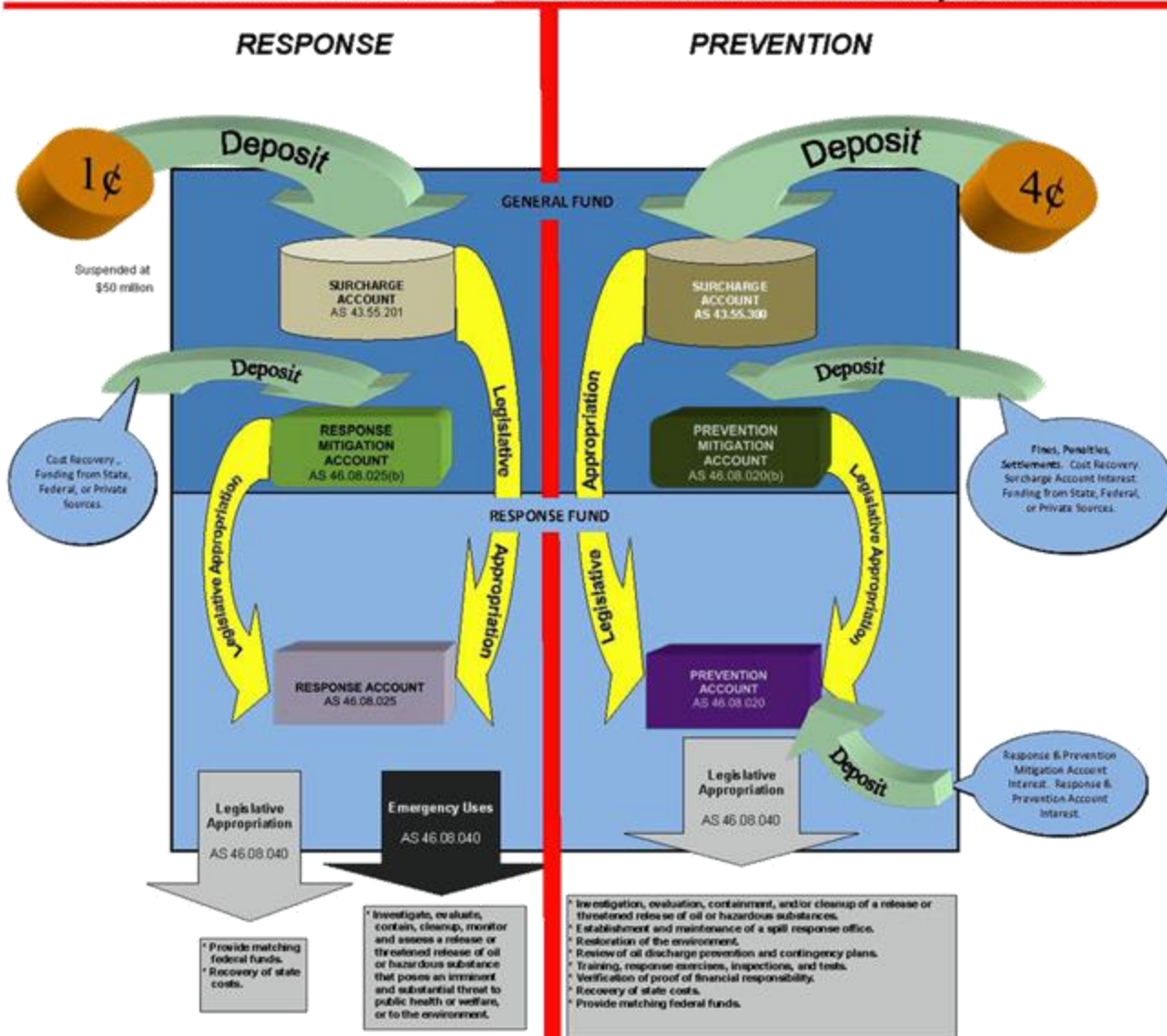


# Flint Hills

- An onsite cleanup plan for the refinery property was approved in October 2014
- No offsite cleanup or remediation plan has been developed
- Sulfolane does not appear to naturally breakdown in the groundwater in this area
- There is currently no cleanup level for sulfolane, limited studies only evaluated acute exposures not long term.
- The National Toxicology Program recently embarked on 90-day and 2-year toxicology studies at the request of DEC



## Oil & Hazardous Substance Release Prevention and Response Fund





# Questions about SPAR?







# Division of Air Quality

## **Components:**

- Director's Office
- Air Quality

**Director:** Alice Edwards

## **Programs focus on:**

- Permits & Compliance
- Community Air Quality
- Air Monitoring

## **Challenges:**

- Fairbanks Air Quality
- Rural Air Quality Issues
- 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
- Fee-based program
- Respond to general air quality 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



## 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



## Fairbanks Fine Particulate Matter (PM<sub>2.5</sub>)



- Fairbanks/North Pole area exceeds the 24-hour PM<sub>2.5</sub> ambient air quality standard
- Initial air quality plan submitted to EPA on December 31<sup>st</sup>.

- Plan and control options have been controversial in community
  - Home heating sources (wood and coal) are important contributors
  - Continued change outs of wood heaters and expansion of natural gas important to attaining the standard
  - Implementing initial plan and working with community as they explore additional options to improve air quality





## Community Air Quality Concerns

- Dust
- Wood smoke
- Open Burning



- Widespread impacts throughout the state make it difficult to effectively respond to the needs of communities
- Outreach and education to help residents and communities:
  - burn wood efficiently, with less smoke
  - reduce unpaved road dust impacts
- Partnerships with communities, tribes, agencies





# Questions about Air?





# Division of Water

## **Components:**

- Water Quality
  - Wastewater Discharge Permitting
  - Cruise Ship
  - Water Quality Standards, Assessment, & Restoration
  - Compliance
- Facility Programs
  - Village Safe Water Program
  - Municipal Grants & Loan Program
  - Operations Assistance

Director: Michelle Hale

## **Challenges:**

- Sustaining the Village Safe Water Program
- Alaska Water Sewer Challenge
- Continuing to build APDES Compliance Program



# 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
- Full primacy since 2012
  - Inherited large backlog of expired permits
  - Issued 19 high quality permits in FY14, 744 authorizations
  - Plan at least 20 in FY15
  - Steady state will be 24 permits per year
- State wastewater discharge permits for cruise ships





# 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
  - Triennial Review on public notice now



# Improving Wetlands Permitting

- SB 27 passed in 2013
- Lost funding in 2014
- Accomplishments
  - Developed detailed plan for assumption
  - Worked with Corps on general permits
    - Corps used DEC input on placer permit revisions
  - Mitigation Strategy for Alaska
  - Wetland Program Plan – EPA funded
  - Work Products organized; for pick-up later



# Facilities Programs

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





# Village Safe Water (VSW)

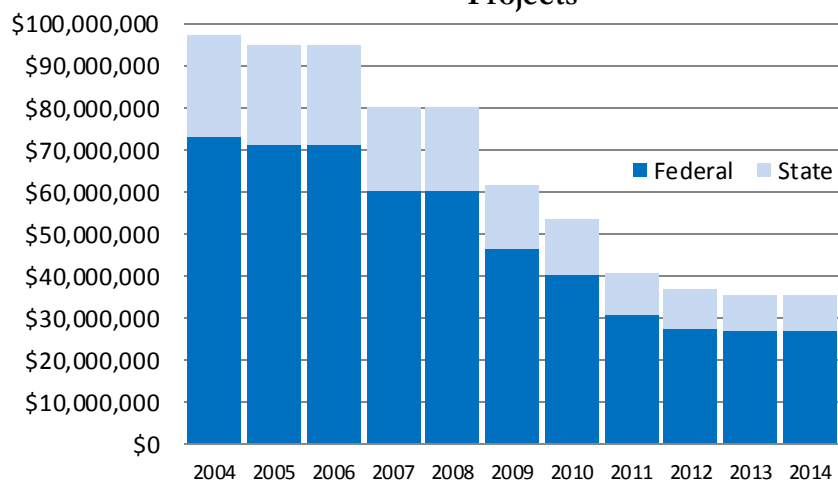
- Mission: Work with smaller, rural communities to develop sustainable sanitation facilities
  - Provide safe water and sewage disposal in villages
  - 100% grant funding for planning, design and construction projects
- Projects use local construction workers, providing training and jobs.





# Rural Alaska Water & Sewer

State & Federal Funding for Village Safe Water Projects



Between 2004 and 2014, funding for Village Safe Water projects has declined by almost \$62 Million, or 64%.

Reduced funding means making choices:

- First time water and sewer service where feasible - but need doesn't go away once systems are built. Systems have a useful life.
- Upgrades or replacement of existing systems to address significant health threats.
- Stretching limited funds:
  - Prioritize – greatest need, biggest impact
  - Extend life with targeted improvements, limited scope





# Health Impacts

- Direct correlation between clean water and significant reductions in skin and respiratory infections that can sometimes be fatal.
  - Hand-washing study in Pakistan
- Children in Southwest Alaska suffer some of the highest rates in the world of serious pneumococcal bacterial infection which can affect the brain, blood or lungs.
- This bacterial infection is directly linked to inadequate sanitation infrastructure.



# Alaska Water and Sewer Challenge

- State-funded R&D project
- Projected to last 5 – 7 years. Currently in Phase 2 of 5.
- To date: \$4 million from state and federal sources
  - Additional funding required to complete project
- “Decentralized” approaches
  - Household based systems
  - Water re-use technologies
- Goal: significantly reduce capital and operating costs of in-home running water and sewer in rural Alaska



# Questions about Water?

