Oregon 2022 State of the Environment

Item I: Informational
July 21, 2022, Oregon Environmental Quality Commission meeting

DEQ Strategic Planning and Update of Performance Measures

Environmental Data Collection and Management at DEQ

Lori Pillsbury

Collecting Data for Environmental Outcomes

Our Core Work – Monitoring the environment over time

Water Quality

- Status and Trends Monitoring
  - Ambient Rivers and Streams
    - Oregon Water Quality Index
  - WQ Toxics monitoring
  - Biomonitoring
  - TMDL development / implementation
- Human Health / Vulnerable Communities
  - Statewide Groundwater Monitoring
  - BEACH monitoring

Air Quality

- Status and Trends Monitoring
  - National Air Toxics Trends Sites (NATTS)
    - AQ KPM
  - PM2.5 / Criteria pollutant sites
    - AQI
- Human Health / Vulnerable Communities
  - Air Toxics Assessments
  - SensOR





Collecting Data for Environmental Outcomes

Responding to Changing Conditions

Water Quality

- PFAS Drinking Water Screening
  - 140 Facilities sampled
  - Groundwater and surface water sources
- Harmful Algal Blooms
  - Expanded monitoring
  - Lakes monitoring 2022
- Statewide Groundwater
  - Completed Klamath study – 2022
  - Southern Deschutes study - 2023

Air Quality

- Wildfire
  - New SensORs to expand network
  - Community Outreach
  - Advances in monitoring
  - Moving AQI services to the Cloud
- Air Toxics
  - Eight Trend Sites (ongoing)
  - Two Annual Sites (one-year, rotating)

Data Generation and Laboratory Operations

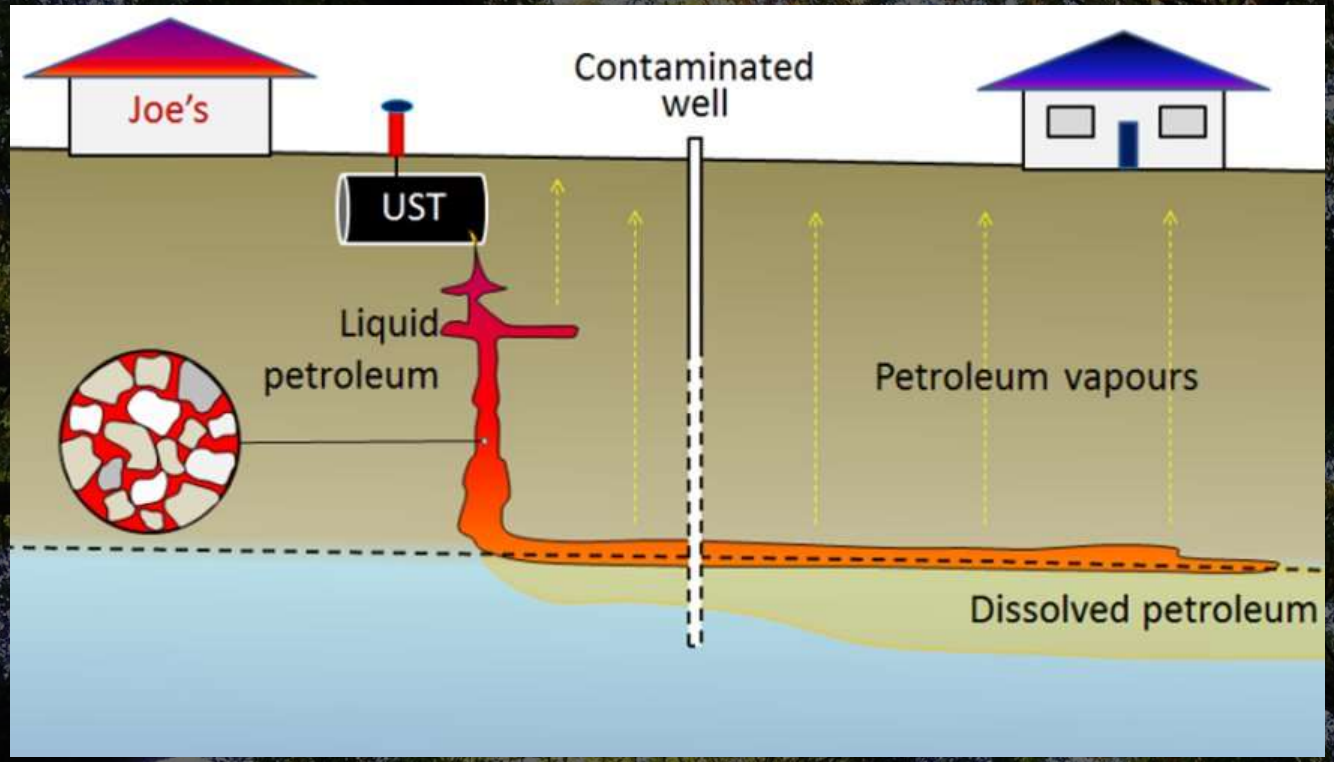
Supporting Air, Land and Water

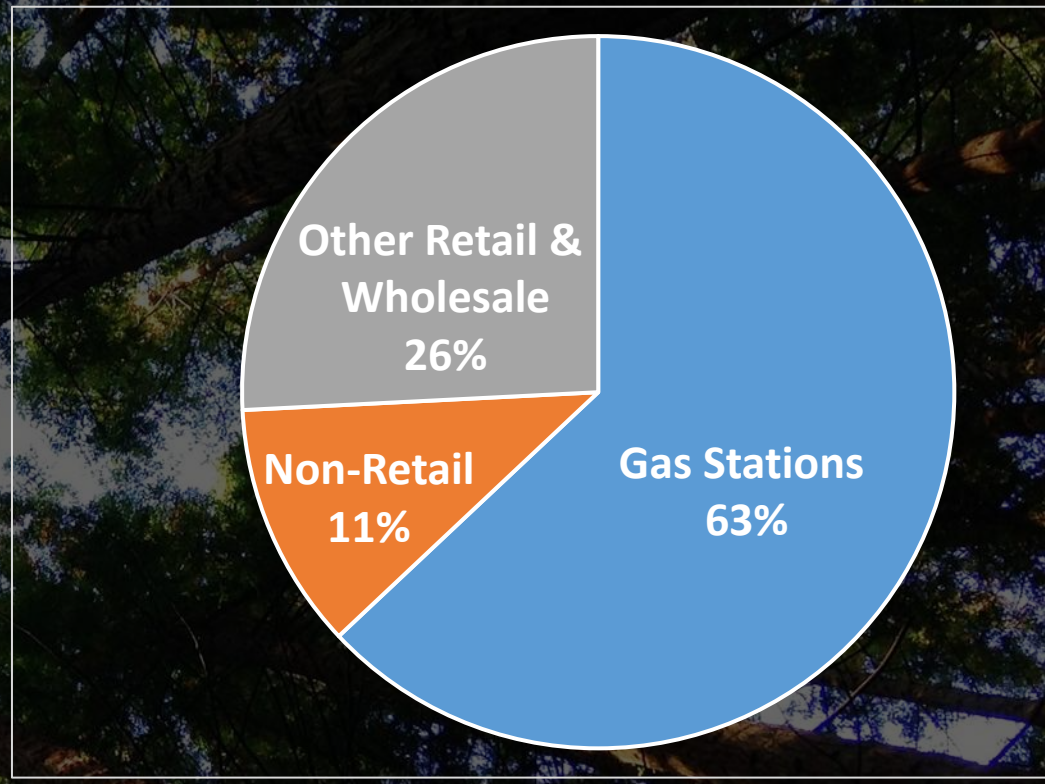
- Traveled thousands of miles
- Analyzed > 12,000 samples
  - > 65,000 different analyses
- Processed and stored millions of data points

Land Quality

Lydia Emer

Underground Storage Tank Program





Includes: Government, Transportation, Schools, Hospitals, and some Agriculture Producers

UST Facility Inspections

2021
INSPECTIONS
203

1,683 UST Facilities

Most Common Violations

- Oct. 1, 2020, Testing Deadline
- New Monthly Walkthrough Inspections
- Release Detection

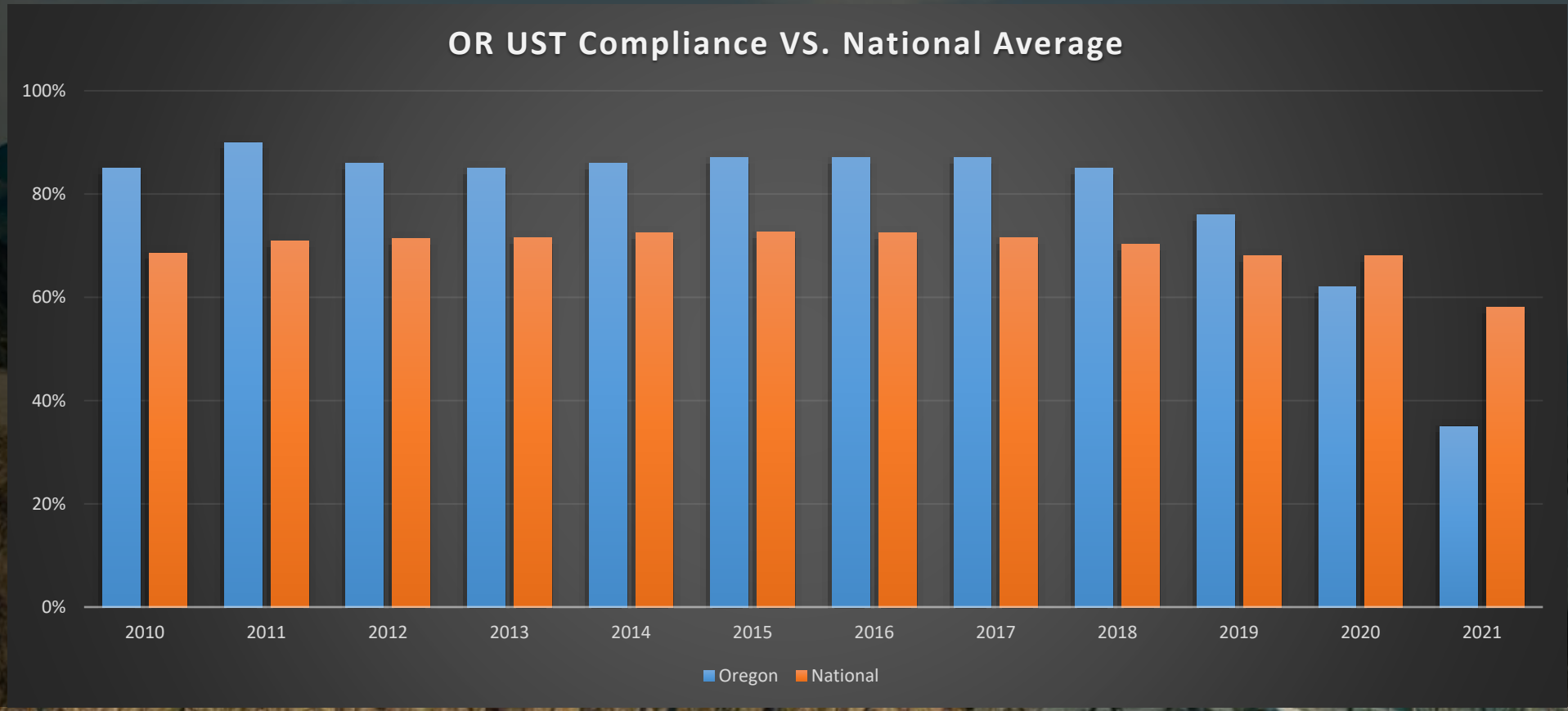
Triennial Inspection Period

Measures

UST Facilities' Technical Compliance Rate Over Time

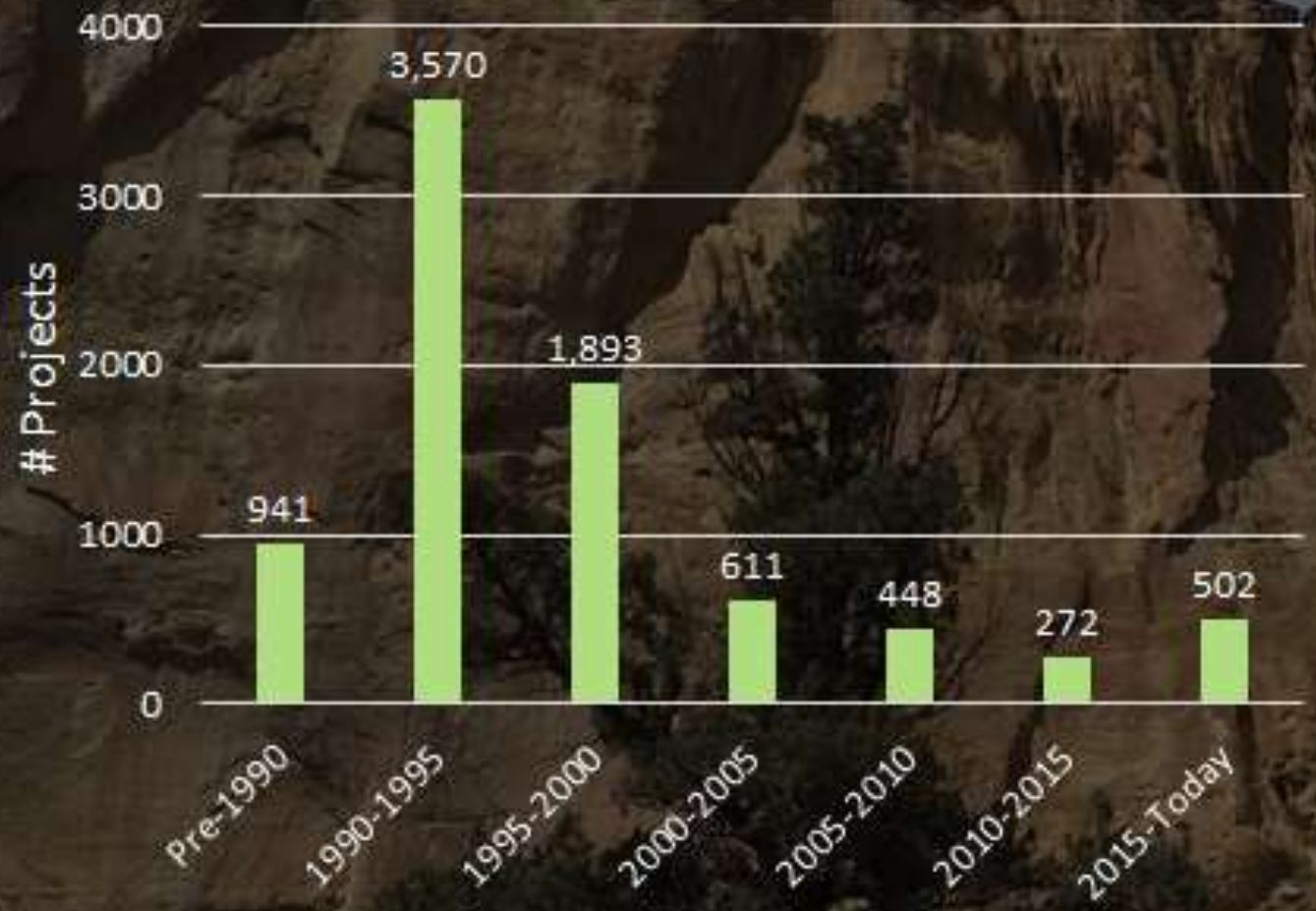
2021 national average 58.0%

2021
COMPLIANCE
35.5%

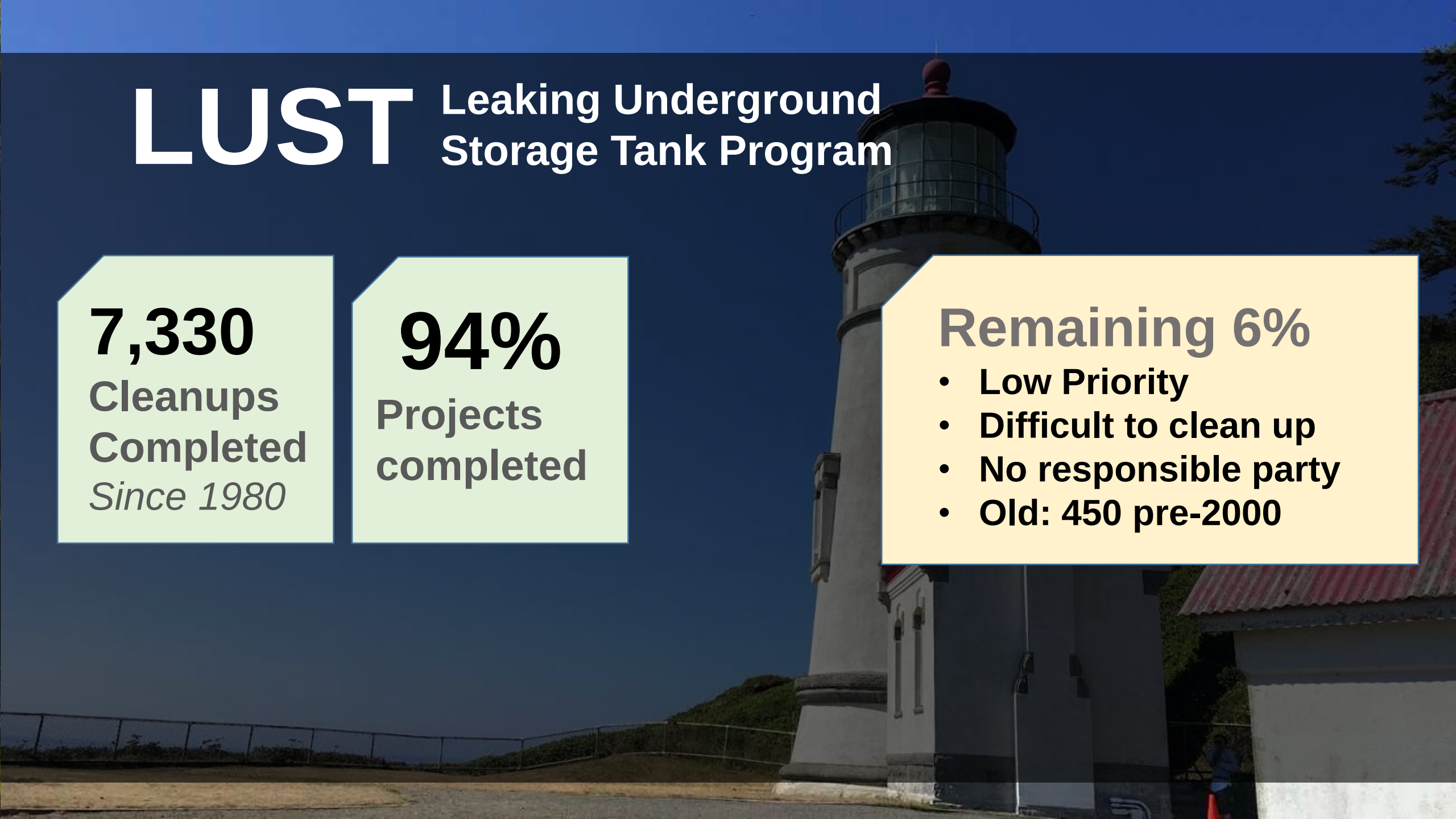


LUST Leaking Underground Storage Tank Program

7,828 projects



LUST projects by date received



LUST Leaking Underground Storage Tank Program

7,330
Cleanups Completed
Since 1980

94%
Projects completed

Remaining 6%

- **Low Priority**
- **Difficult to clean up**
- **No responsible party**
- **Old: 450 pre-2000**

LUST

65 confirmed releases reported in 2021

DEQ Completed 43 LUST Cleanups

Cleanups

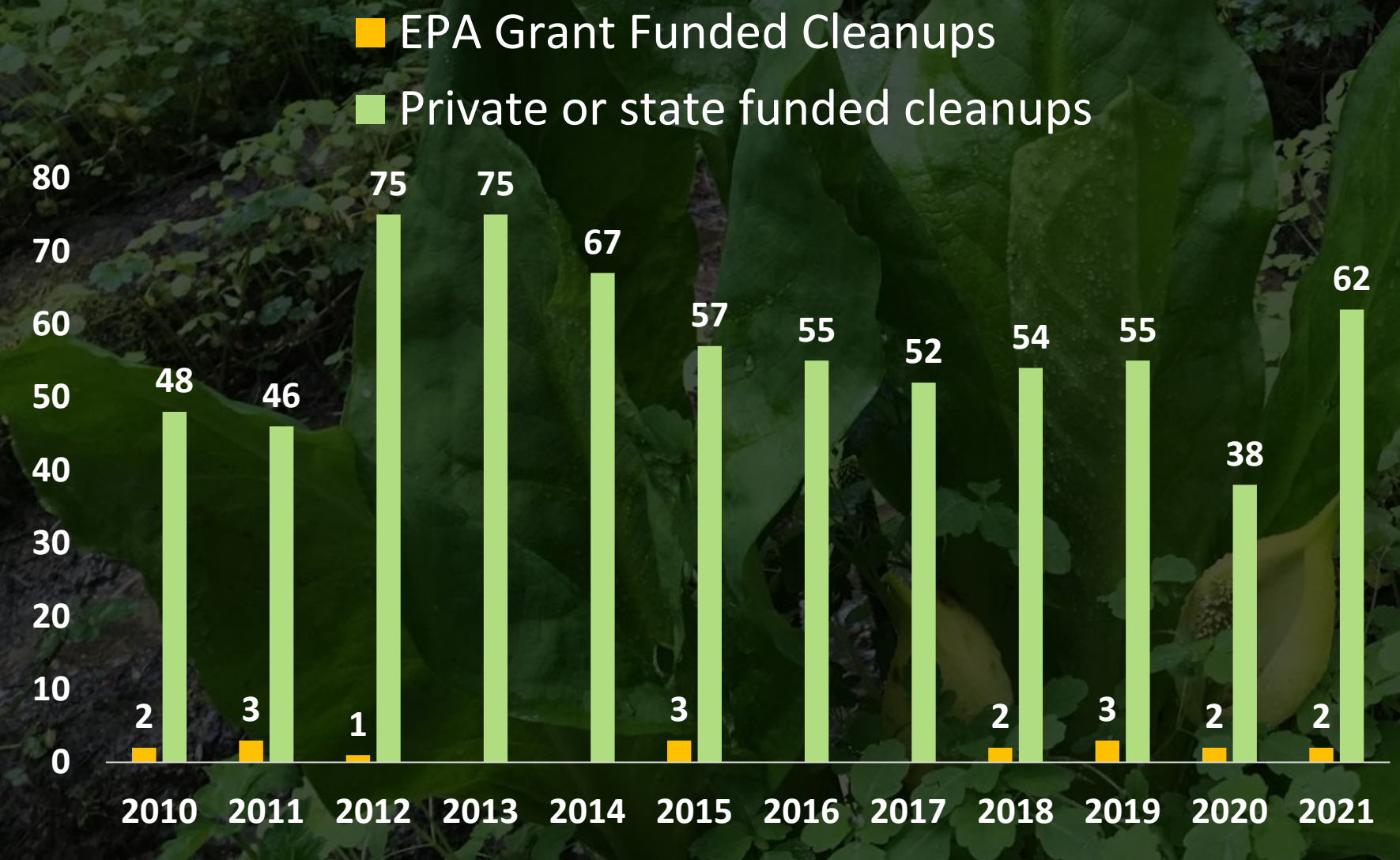
Environmental Cleanup Program Identifies, investigates and remediates sites contaminated with hazardous substances.

5,724 individual sites in ECSI* database

473 Brownfield Sites

* **Environmental Cleanup Site Information**

Brownfields Cleanups Completed



4098 Acres
ready for reuse

HW Facility Inspections

2021
INSPECTIONS
58

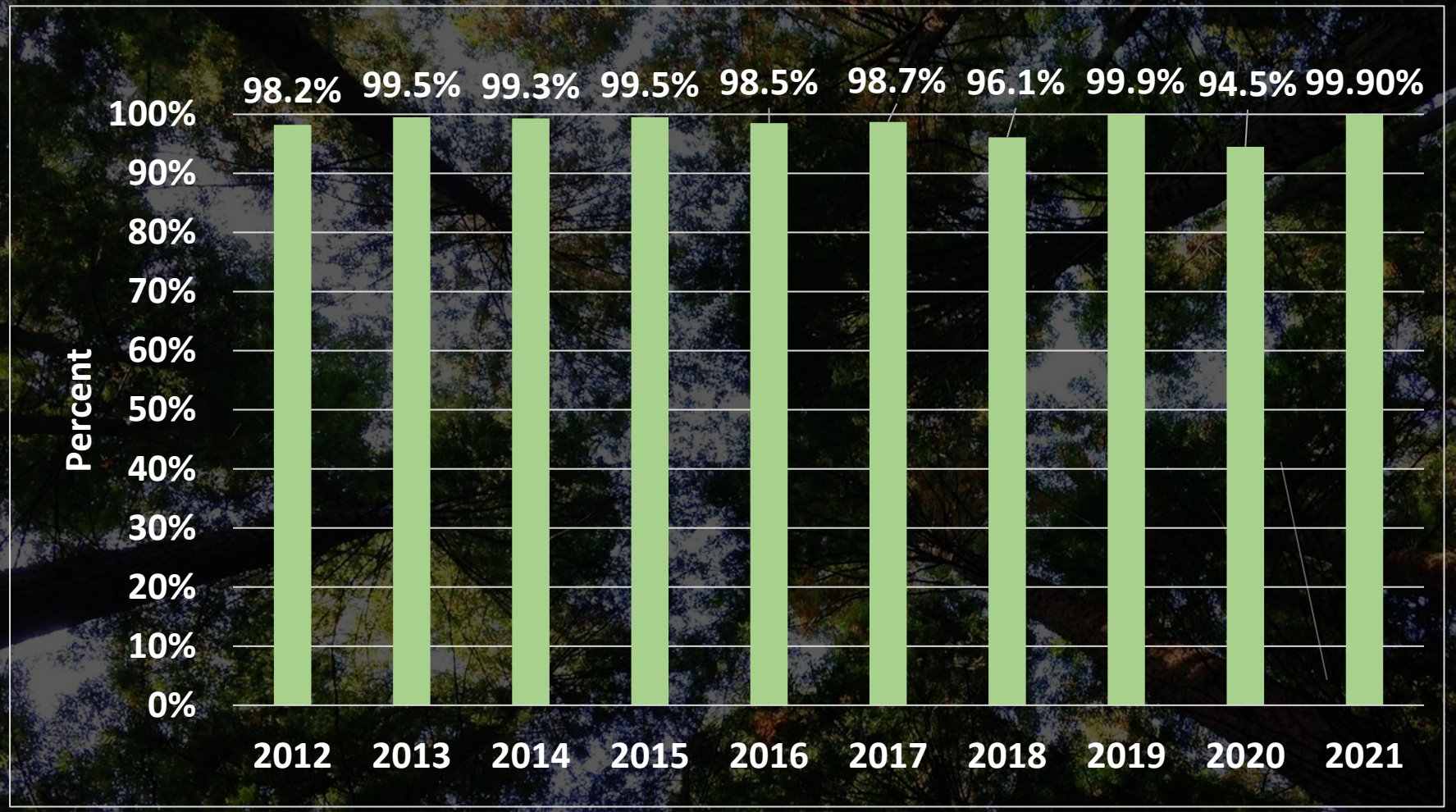
~536 HW Facilities in 2021

Most Common Violations

- Failure to make HW determination
- HW Management
- HW Piping leak detection

One inspection every three years

Percentage of HW Facilities with no SNCs



2021 Sites w/o SNCs

99.9%

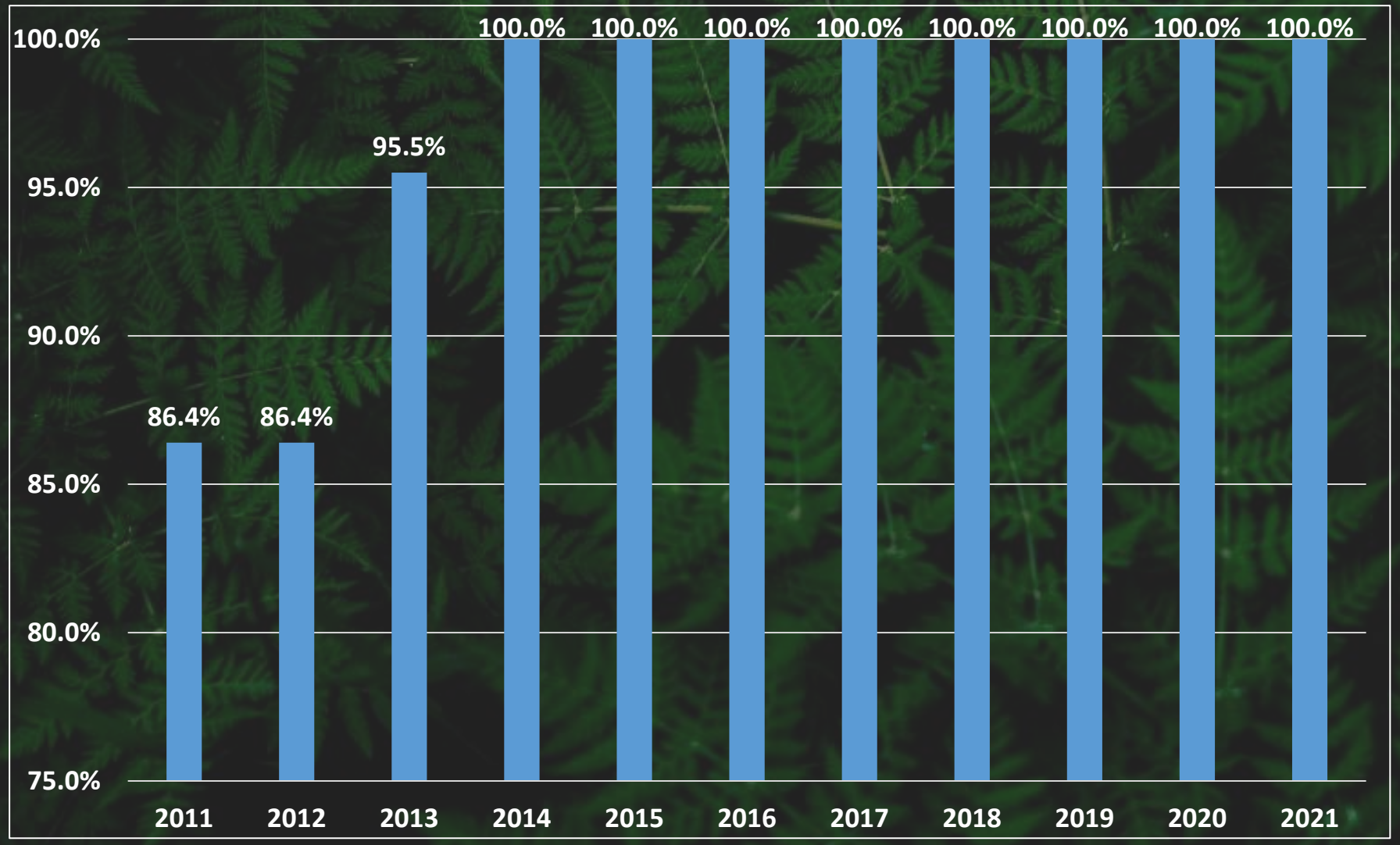
2021 Inspections

58

2021 Active SNCs

4

Percentage of HW Facilities with Human Exposure Under Control



Oregon Human Exposure Completed

22

OR Sites w/ Human Exposure under control

100%

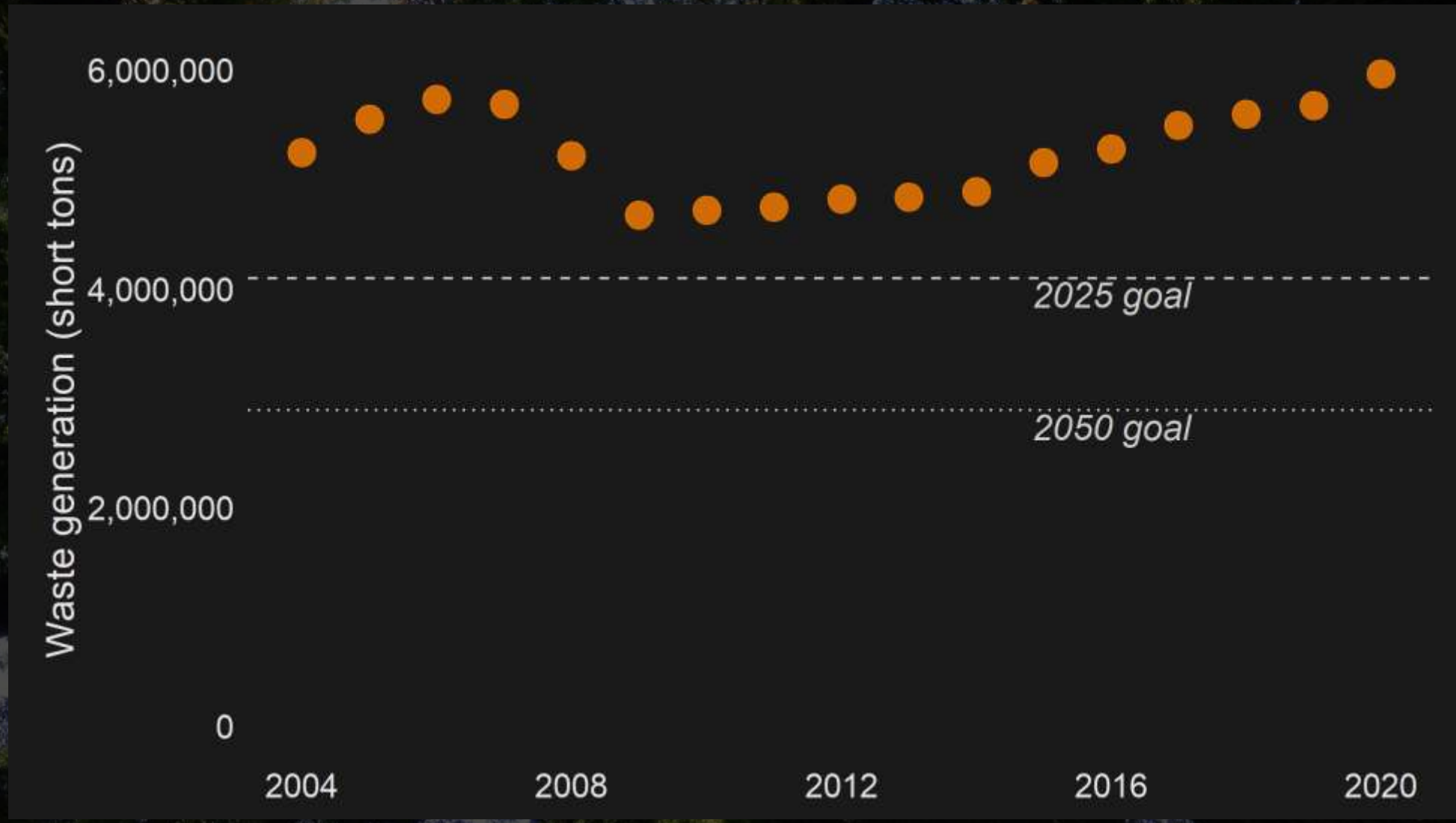
Nationally Human Exposure Completed

95%

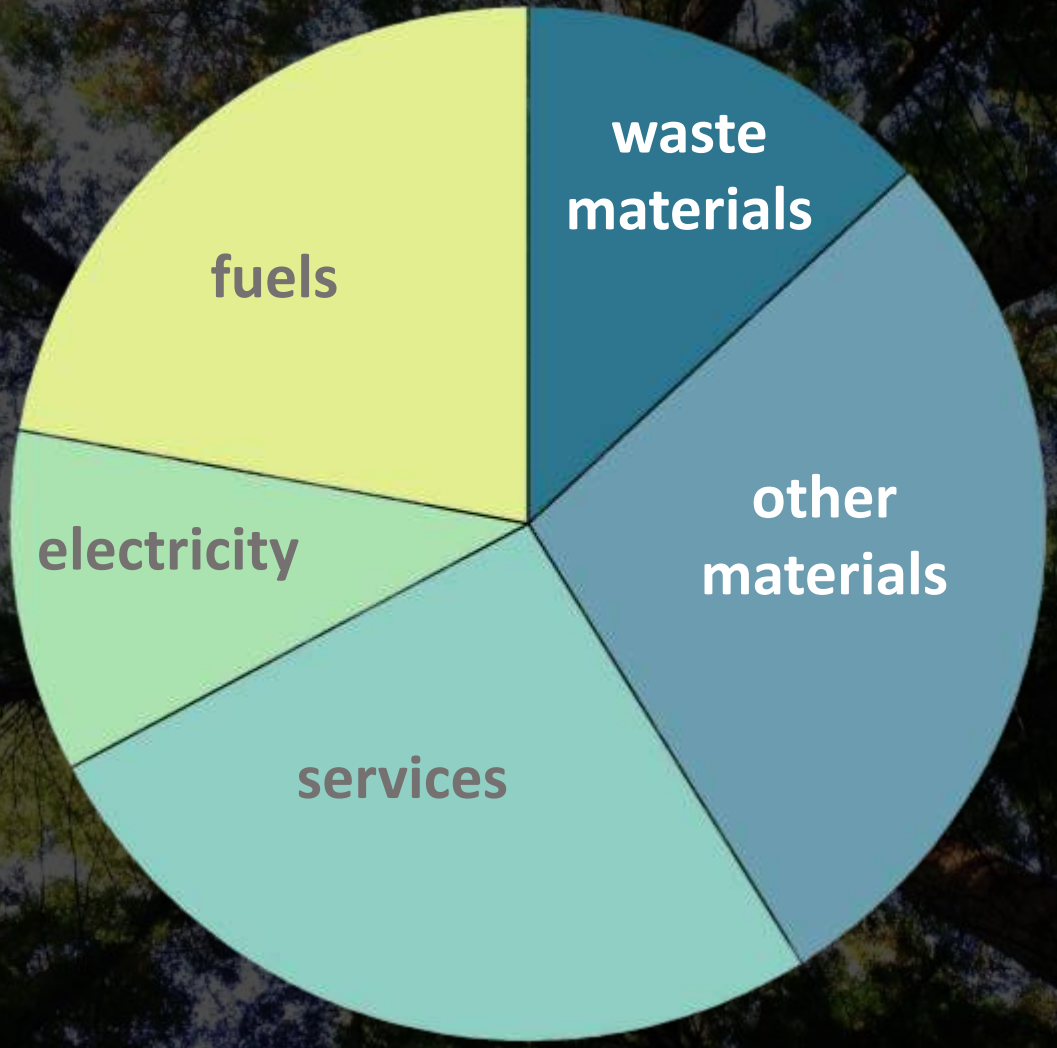
Traditional view: Materials = waste

KPM #11: waste generation

In recent years, generation has tracked economic activity



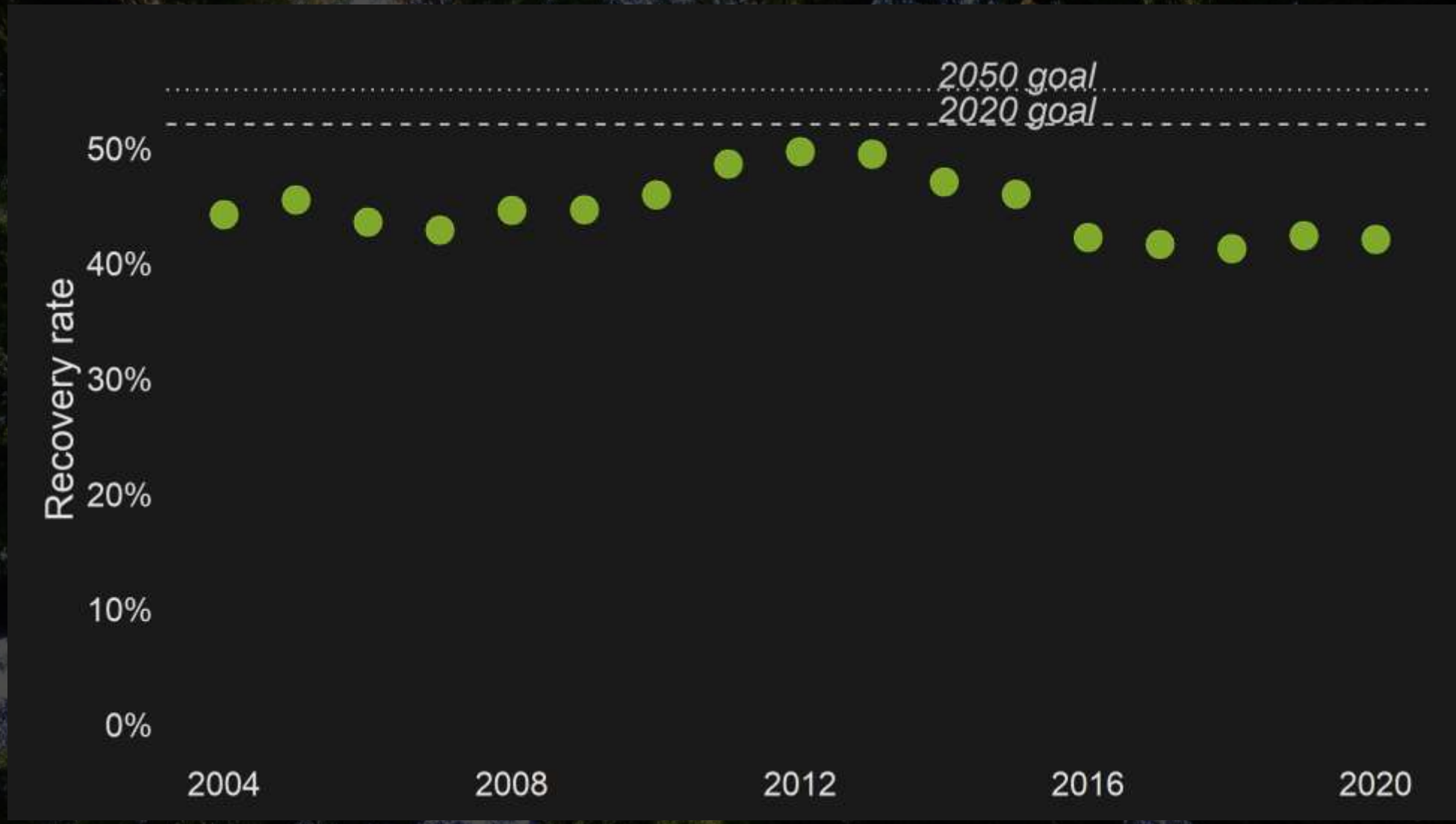
New view: Waste is only about a third of the total effects of materials



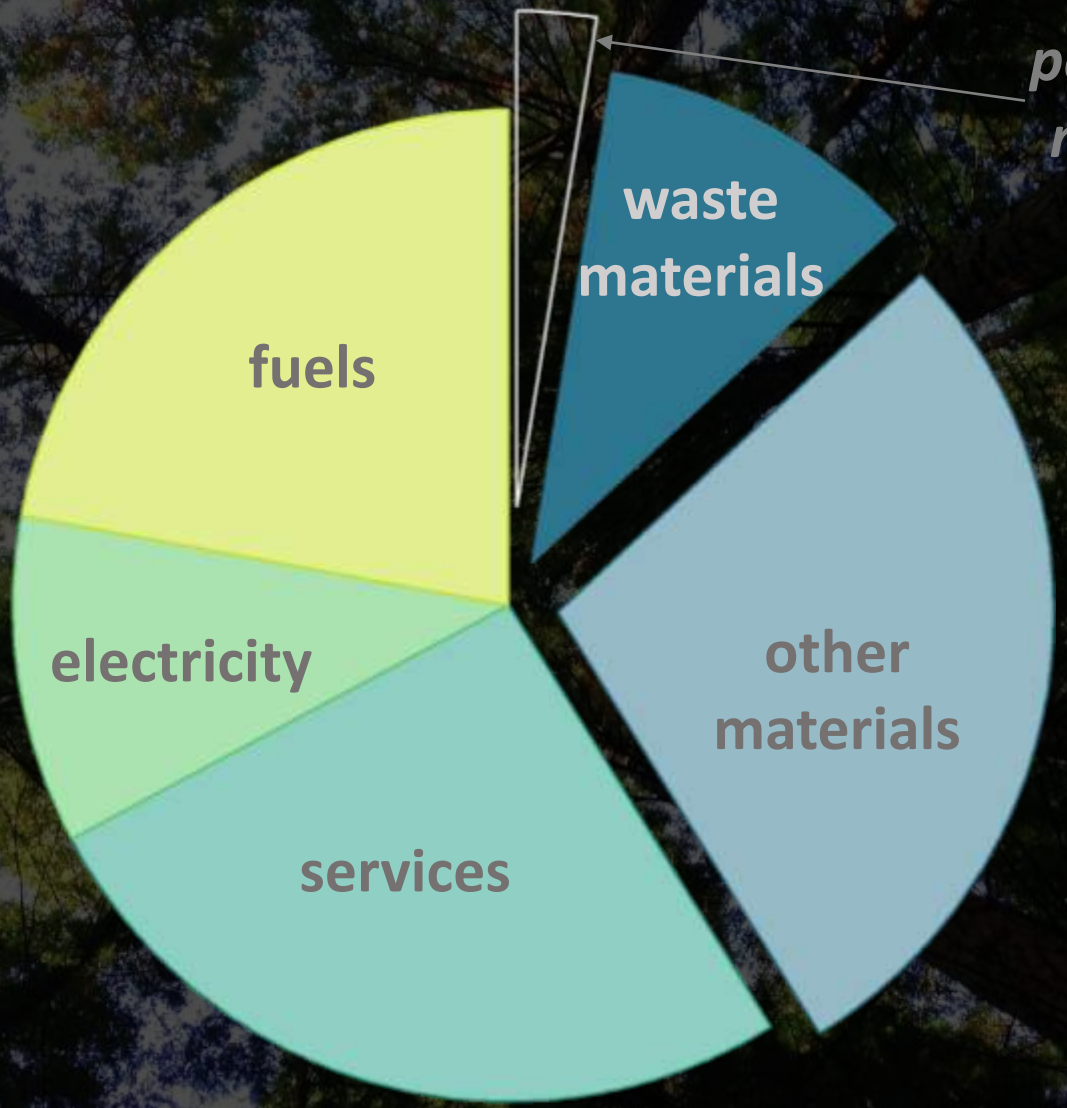
Traditional view: Recycling more will decrease impacts a lot

KPM #12: recovery rate

Recovery rate goes up and down with marketplace changes



New view: Recycling will only be a small part of the solution

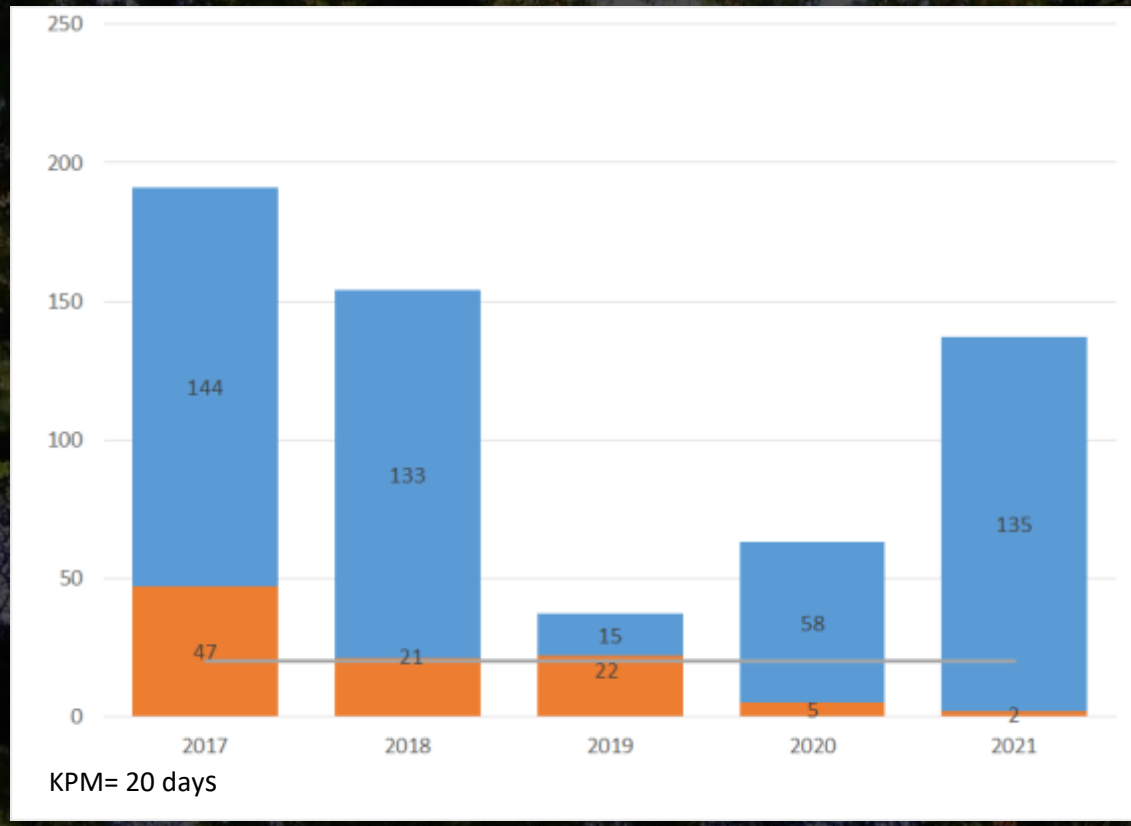


Air Quality

Ali Mirzakhalili

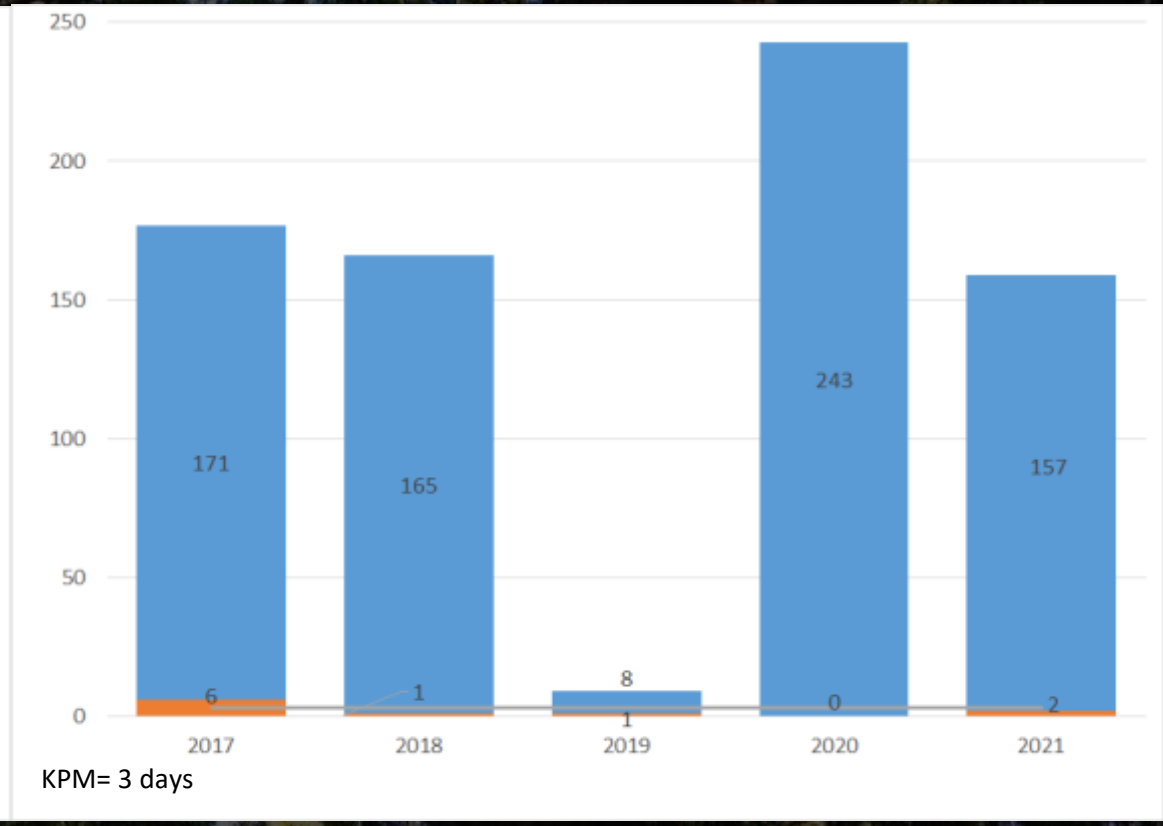
Statewide Totals, Unhealthy Air Quality Days

Unhealthy Days for Sensitive Groups (AQI between 100-150)

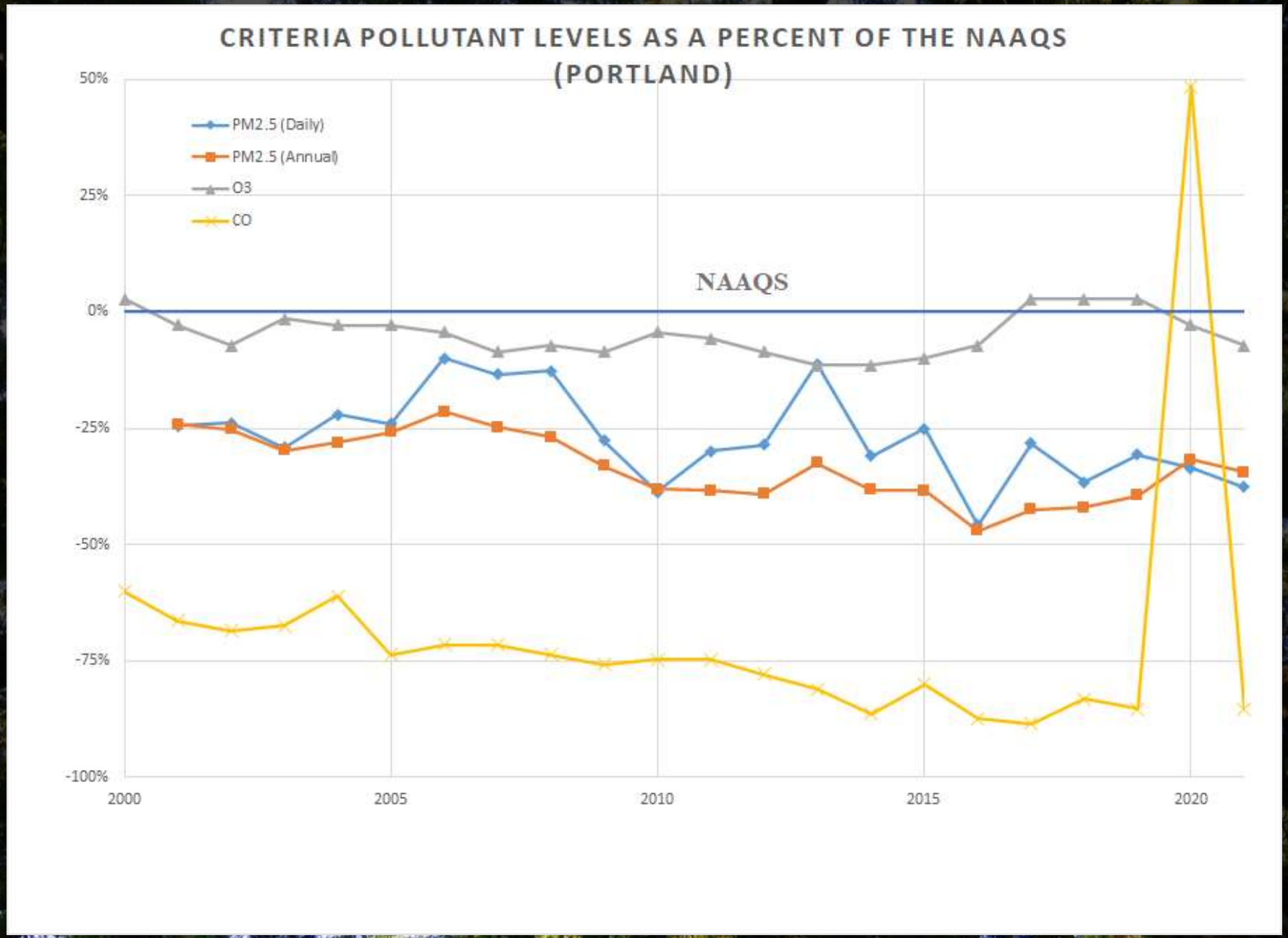


KPM= 20 days

Unhealthy Days For All (AQI greater than 150)

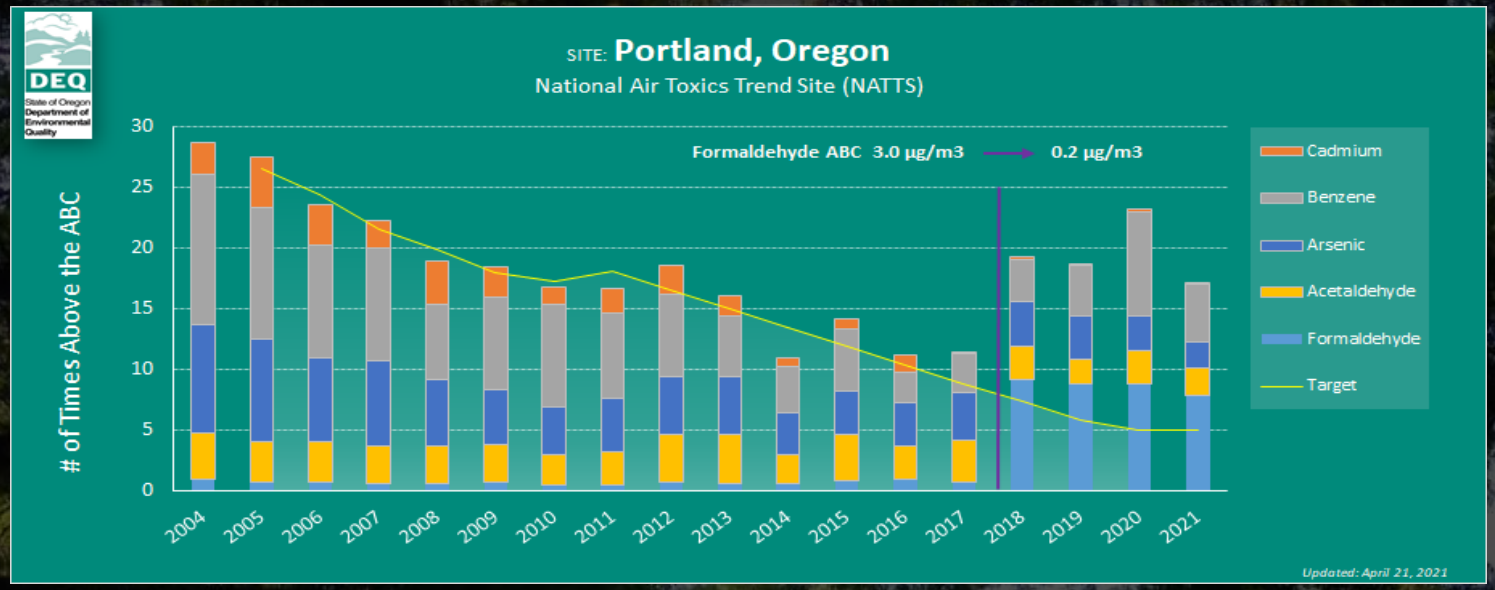


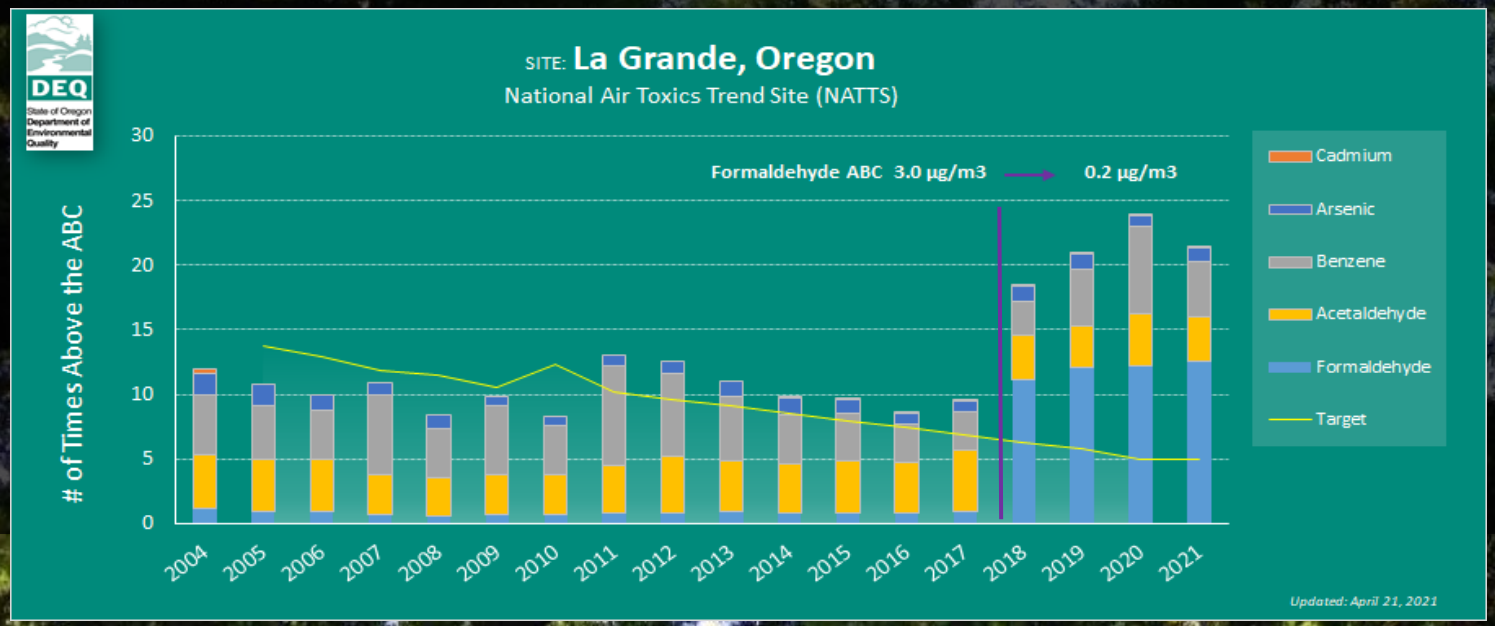
KPM= 3 days

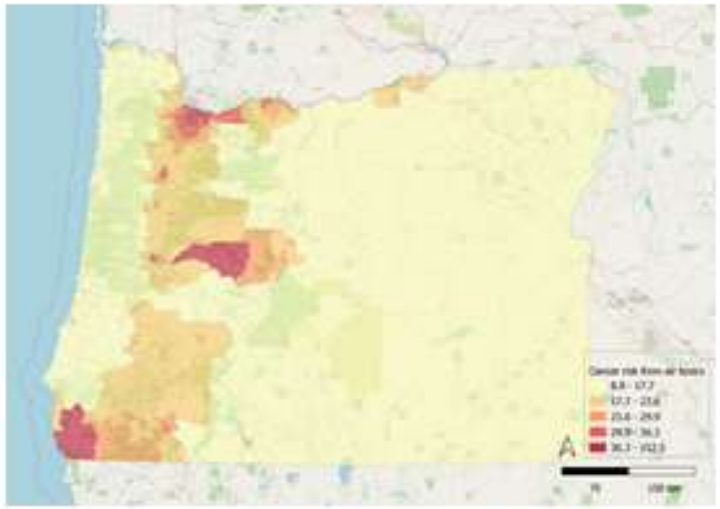

CRITERIA POLLUTANT LEVELS AS A PERCENT OF THE NAAQS (PORTLAND)
50%
25%
0%
-25%
-50%
-75%
-100%
2000
2005
2010
2015
2020
PM2.5 (Daily)
PM2.5 (Annual)
O3
CO
NAAQS

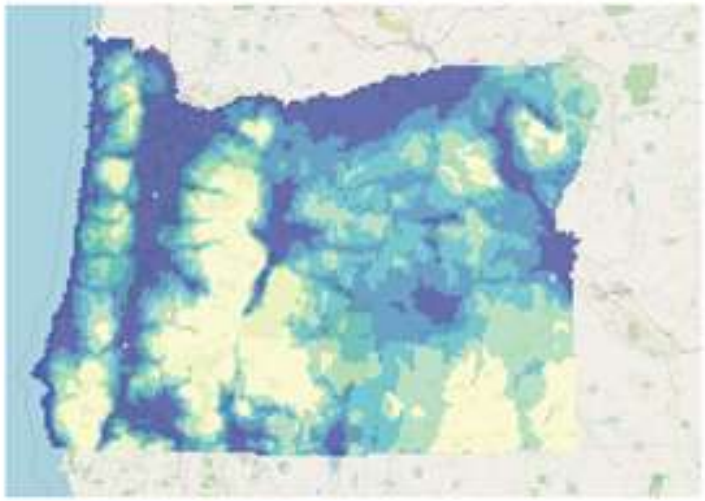
Air Toxics Trends in Larger and Smaller Communities

"DEQ's goal is to reduce levels of five representative airborne toxics down to the slight risk level of one time above the benchmark for each pollutant by 2020."









Air Pollution burden

- PM2.5 concentrations
- Cancer risk from air toxins
- Hyperlocal, acute risk from facility emissions

Identify how to assess cumulative air pollution burden

Complete preliminary assessment of disproportionate impacts

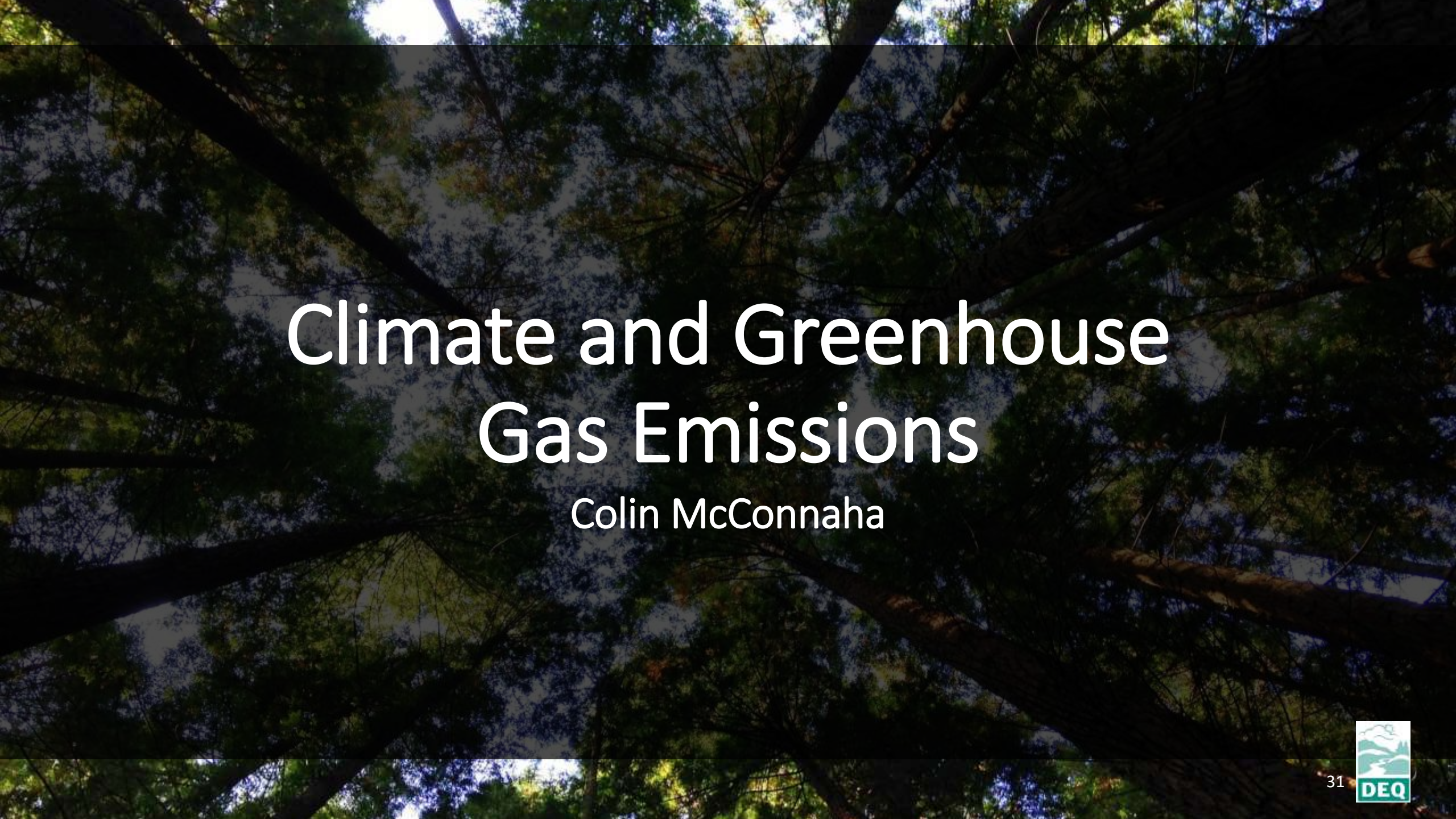
Potential dimensions

- Race/BIPOC
- Income/Poverty
- Age (under 5, over 64)
- Disability
- Immigration status
- Tribal
- Rural
- Coastal
- Remote
- Communities with limited infrastructure
- Underrepresented communities

Health vulnerabilities

In consultation with OHA

- Life expectancy?
- Diabetes?
- Cardiovascular disease?
- Asthma?



Climate and Greenhouse Gas Emissions

Colin McConnaha

Oregon Greenhouse Gas Emissions

Industrial
- Climate Protection Program

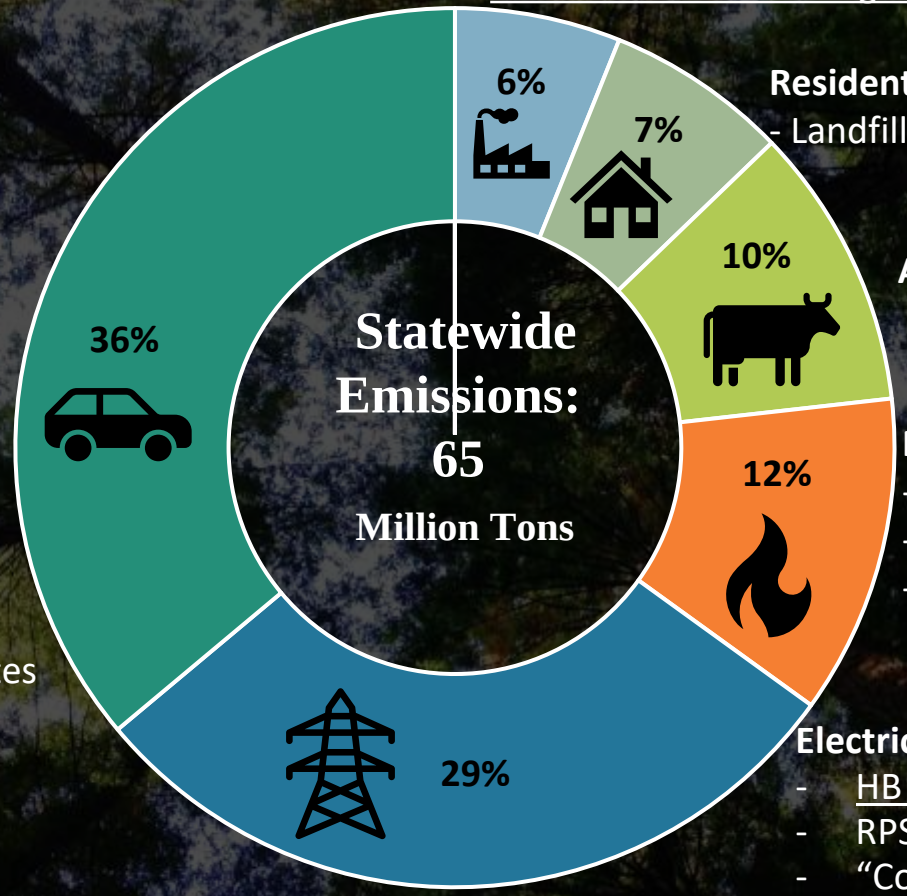
Residential & Commercial
- Landfill gas regulation

Agriculture

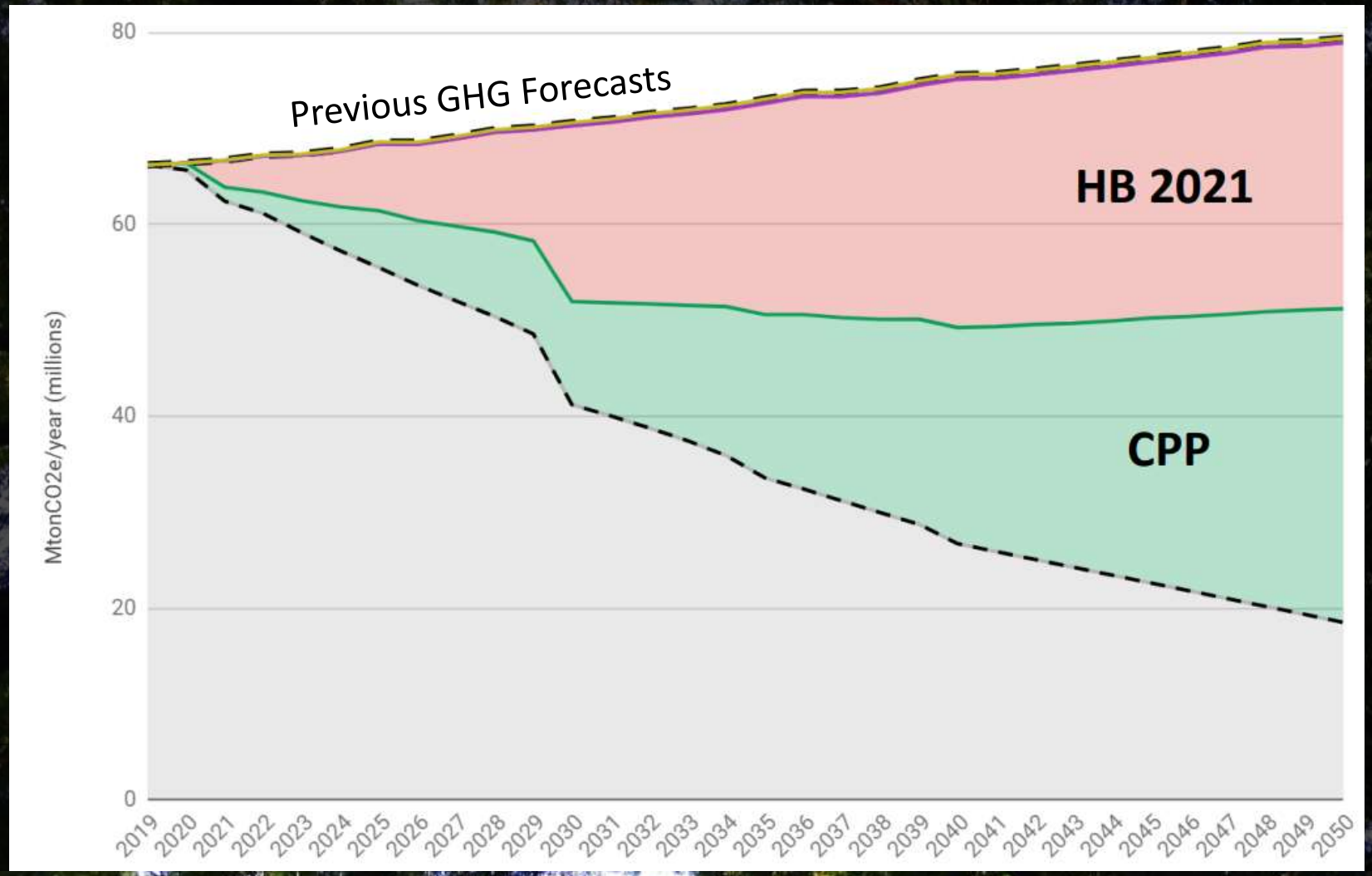
Natural Gas
- Climate Protection Program
- SB 98
- Energy efficiency measures

Electricity
- HB 2021
- RPS
- "Coal-to-clean"
- Energy efficiency measures

Transportation
- Climate Protection Program
- Clean Fuels
- Vehicle Standards
- Vehicle Rebates

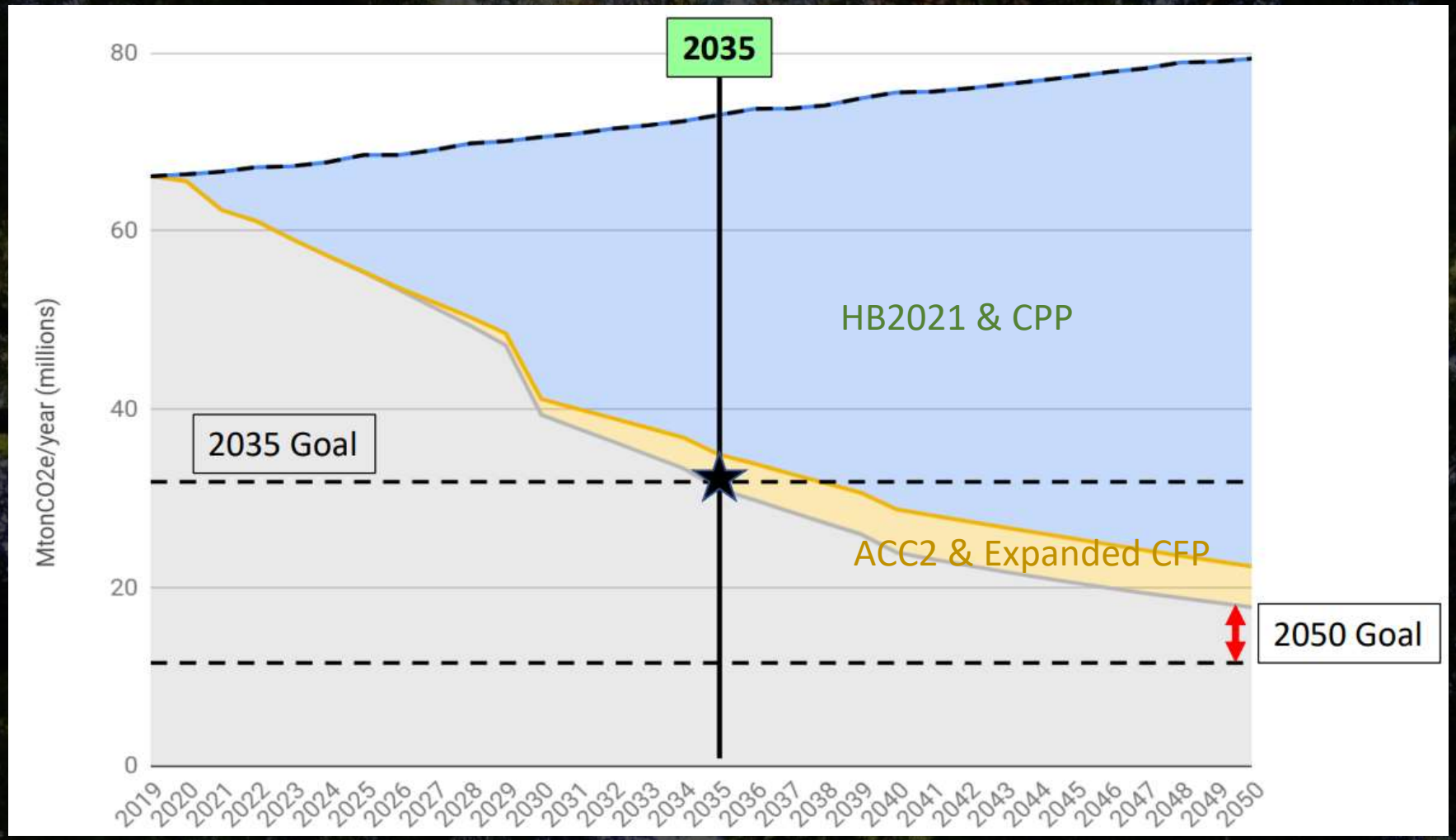


Forecast of Oregon GHG emissions



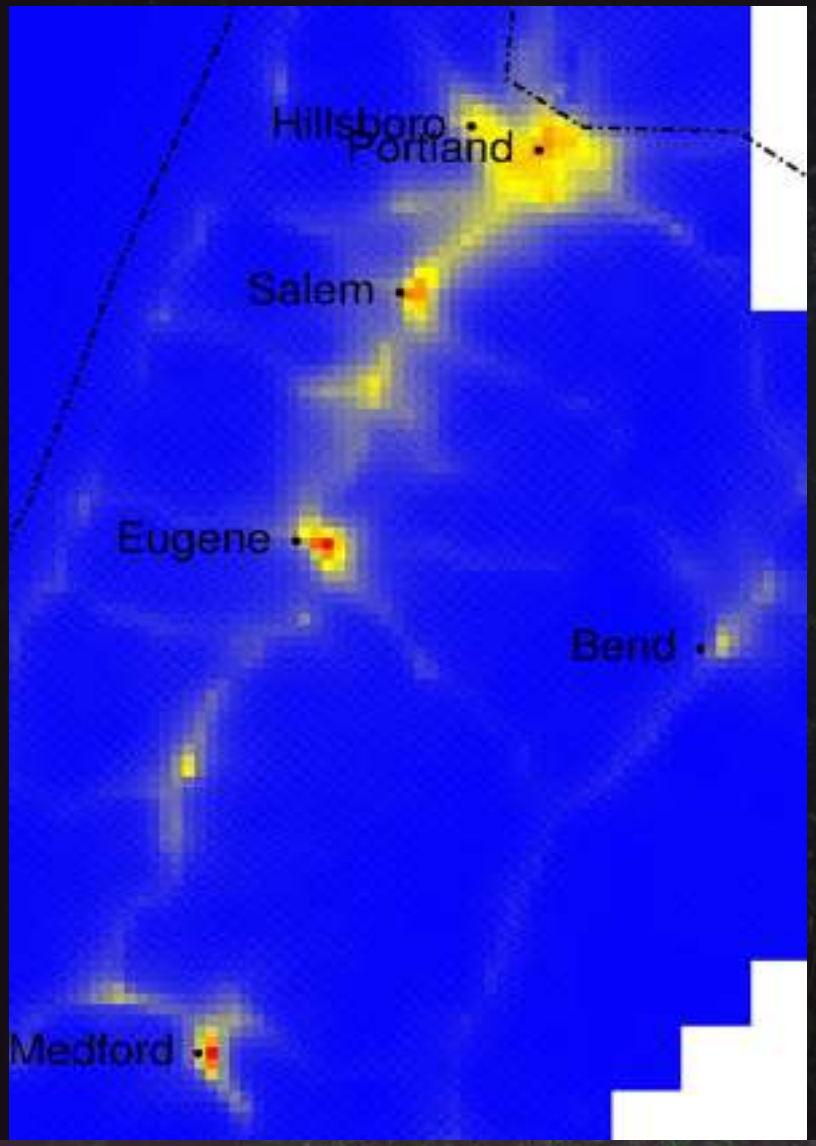
Source: Oregon Global Warming Commission

Forecast Relative to GHG Goals



Source: Oregon Global Warming Commission

Public health benefits of GHG reductions



Climate Protection Program

- **Monetized health benefits up to $2.3 billion** (cumulative)
- Reduced statewide adverse health impacts
  - Avoided hospital visits
  - Reduction in premature mortality
  - Lower respiratory impacts
  - Fewer workdays lost

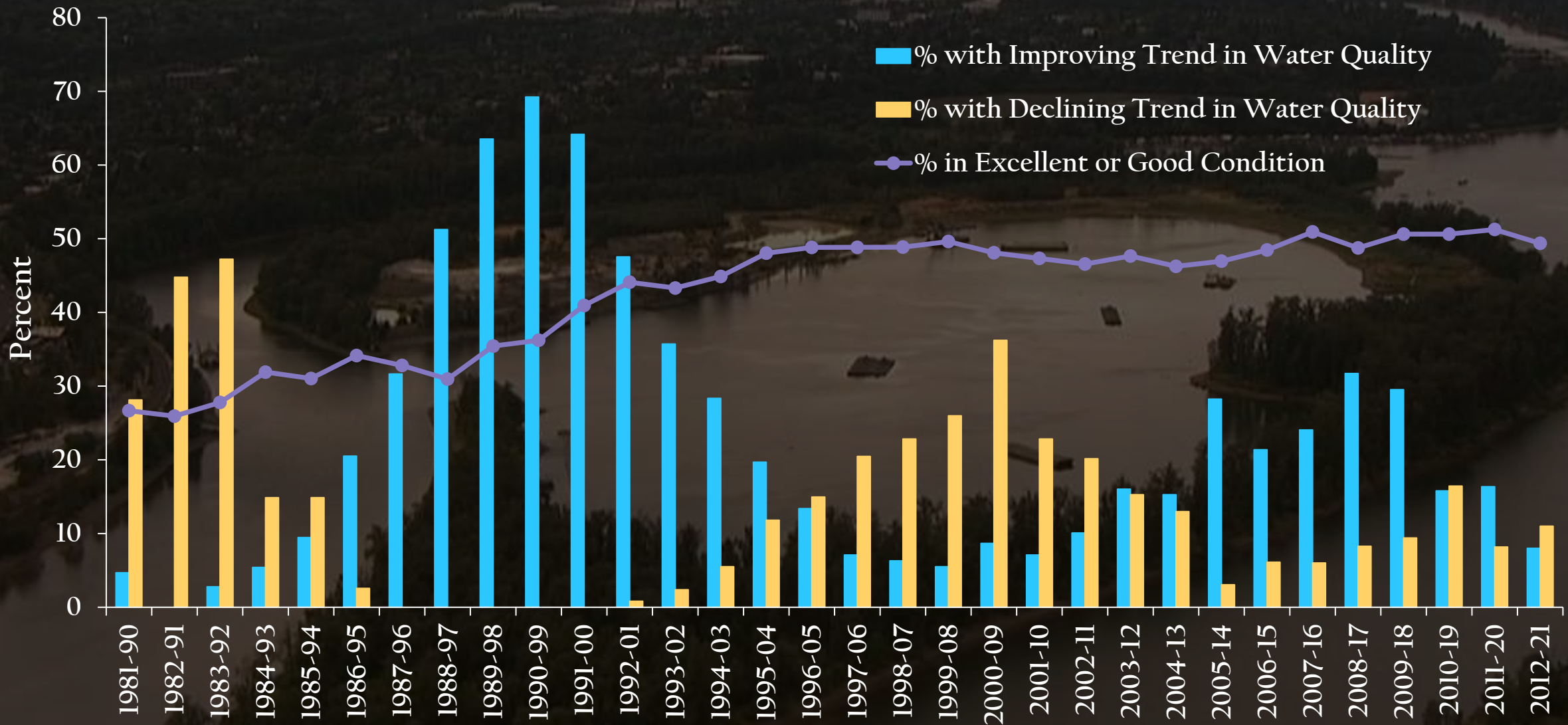
Clean Fuels Program

- DEQ modeled tailpipe pollution implications for an expanded CFP
- Results were intuitive:
  - Largest pollution reductions along transportation corridors and urban areas
  - 15% decrease in diesel pollution in major cities
- Nearly $90 million *per year* in avoided health costs for Oregonians
- Health benefits are greatest in low-income and BIPOC communities

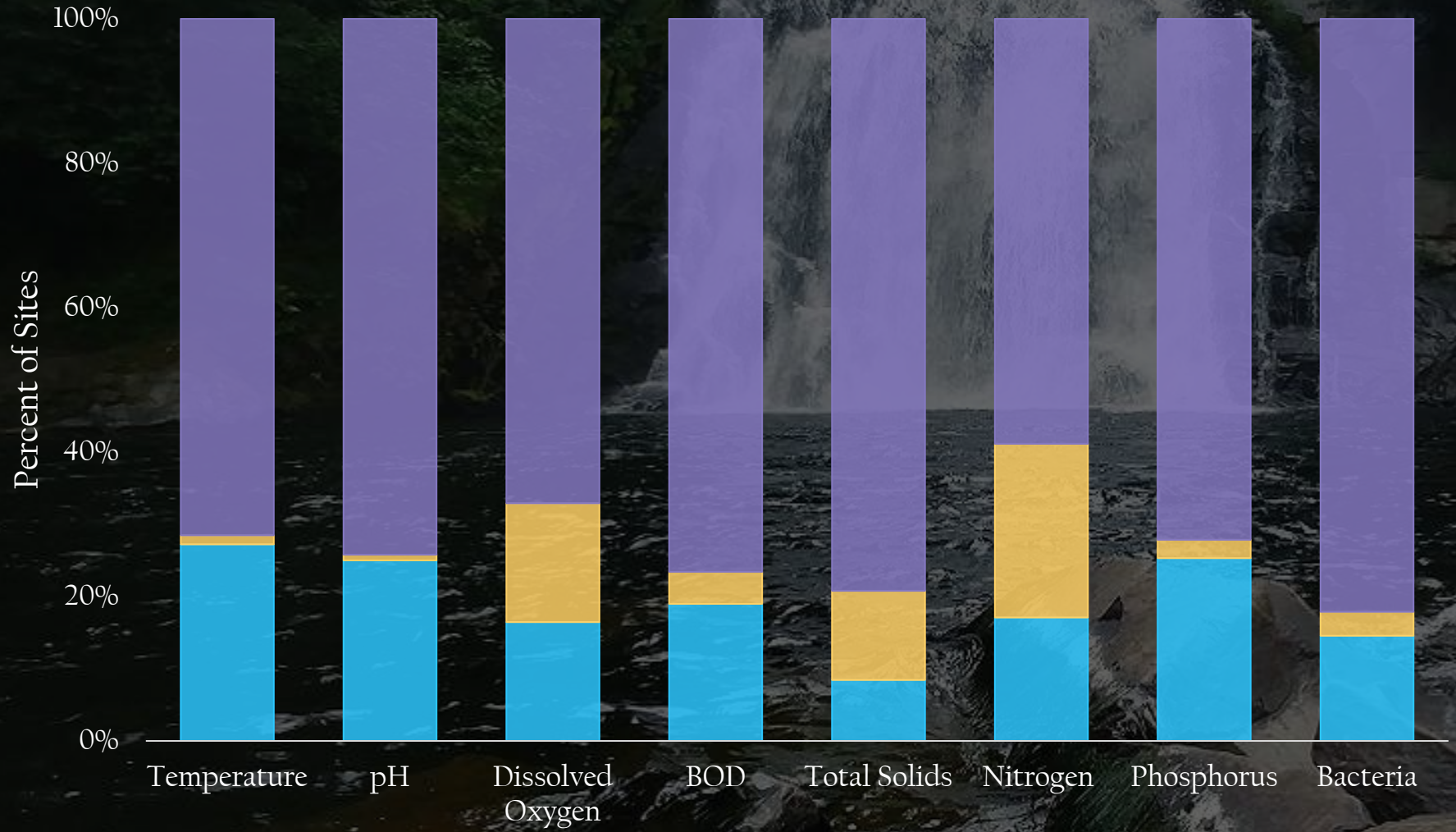
Water Quality

Jennifer Wigal

WQ KPMs Over the Years



Sub-indices Influencing the KPM



DO, Total Solids, and Nitrogen have the highest percentage of declining trends.

2022 Integrated Report

14

organizations submitted data

7.7

million total numeric results

3,280

monitoring locations statewide

2022 Integrated Report

65
AUs delisted

Waters now meet water quality criteria

Most delisted AUs
- Temperature
- Bacteria
- Aquatic Life Toxics/pH/Chl-*a*

17%
AUs assessed

Most assessed pollutants
- Temperature
- Dissolved oxygen
- Pathogens
- Biocriteria
- Metals

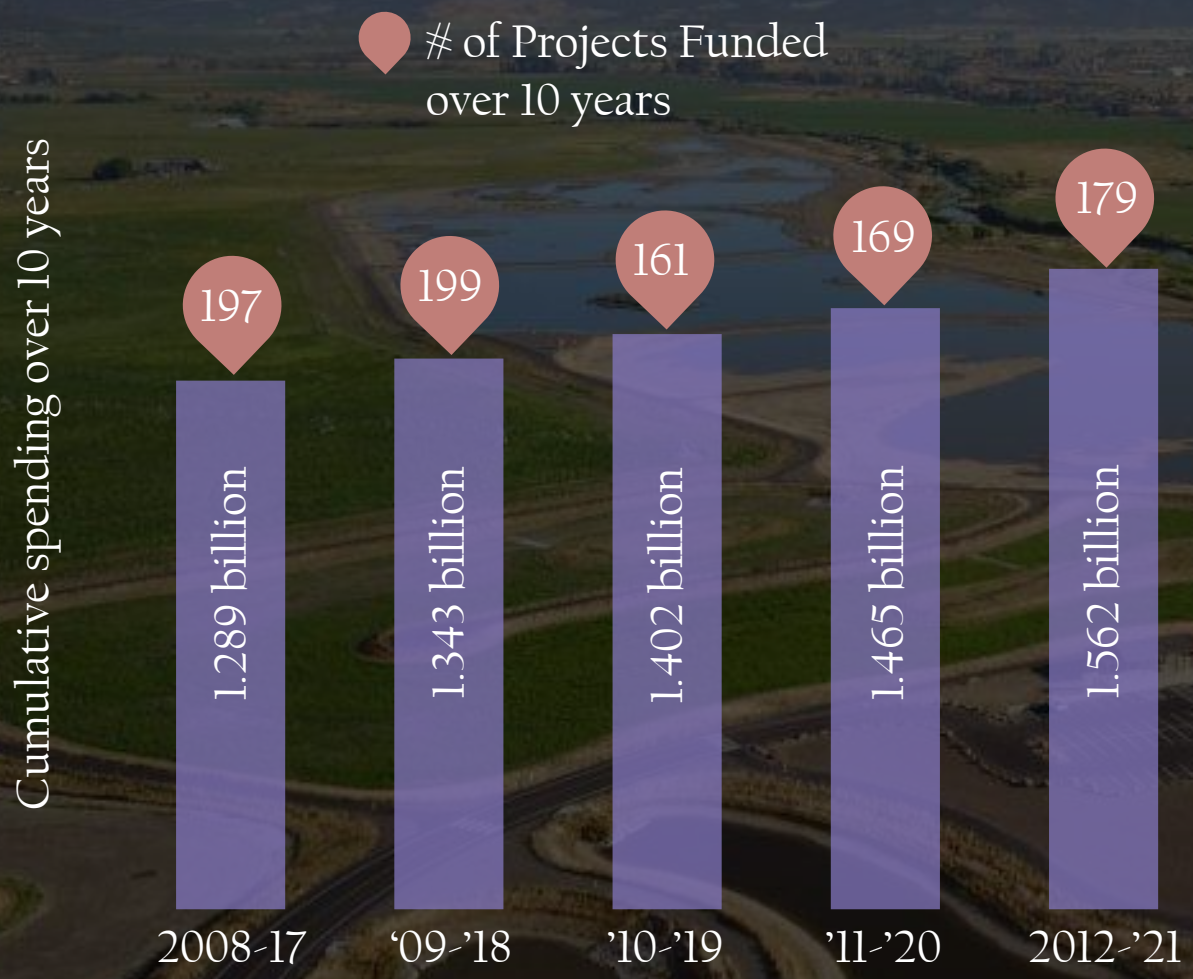
35%
AUs impaired

Most common impairments
- Temperature
- Dissolved oxygen
- Biocriteria
- *E. coli*
- Sedimentation

Columbia Slough: Success Story

- In mid-90s, routinely exceeded bacteria water quality
- 1998 TMDL for bacteria
- Primary sources: combined sewer overflows (CSOs), illicit connections, failing septic systems and stormwater

Wastewater and Stormwater Investments



The Clean Water SRF finances a variety of projects, including planning, treatment facilities and green infrastructure, such as water use efficiency, irrigation district modernization, bioswales and riparian restoration.

Funding comes from repaid loans, fees and federal dollars. The ECOS data on number of projects since 2007 reflects multiple projects within some loans, however, our program counts each loan to be one project regardless of how many activities are included in that loan.

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State of the Environment