

Colorado Department of Public Health and Environment

IT Modernization to Support our Air Quality Goals

Joint Technology Committee
February 10, 2022

Agenda

- Introduction and Project Summary
- CDPHE/OIT governance model and project collaboration
 - Erick Scheminske (CDPHE)
 - Kristi Labarge (OIT)
- APCD project overview and alignment with strategic goals
 - Michael Ogletree (CDPHE)
- Project plan and strategy for success
 - Andrew Putnam (CDPHE)
- Questions & discussion

Air Pollution Control Division Project

Stationary Sources Program IT System

- Manage the various activities within the Stationary Sources Program
- Engage with external stakeholders (regulated industries)
- Build efficiencies, modernize back-end technology

Air Pollution Data Warehouse

- Enable more effective data sharing throughout APCD's programs
- Improve public access to information
- Allow more effective partnership with external entities seeking to use APCD's data

CDPHE/OIT Collaboration and Governance to Date



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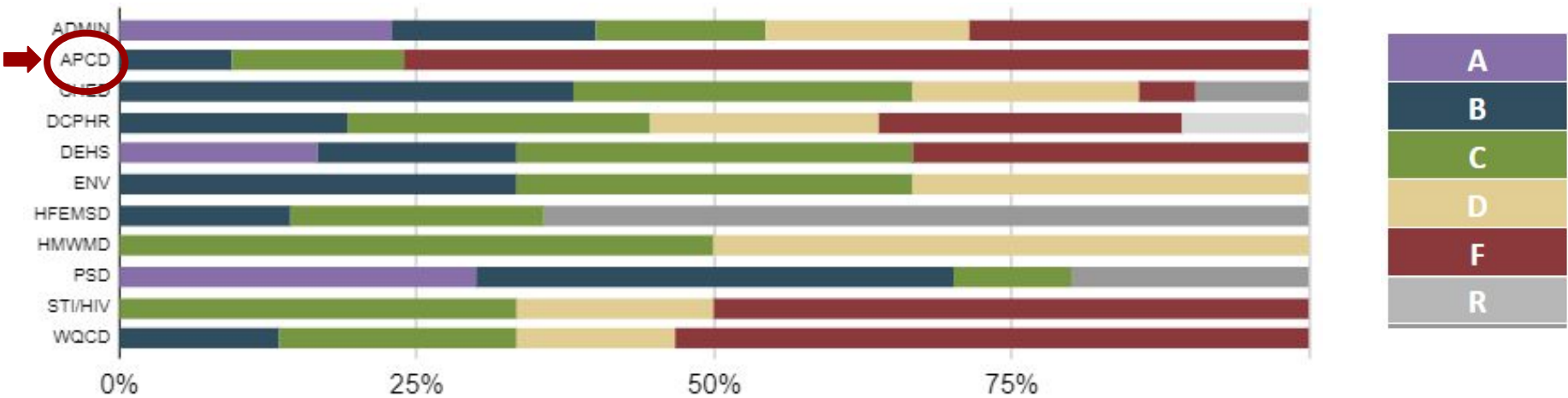
Governance: CDPHE/OIT Business Technology Strategy Committee (BTSC)

- BTSC is an established CDPHE/OIT collaborative process with a track record of success overseeing projects and mitigating risk
- Since 2016, the BTSC has overseen the successful development and implementation of over 100 projects at CDPHE. Examples include:
 - Implemented Records Management Solution in OnBase with public access to documents
 - Greenhouse Gas Reporting utilizing OnBase, Mulesoft, and Tableau
 - Prescribed Fire Permitting utilizing OnBase with SIPA integration
 - Oil and Gas Reporting utilizing OnBase, Mulesoft, and Tableau (under development)

CDPHE Technology Health Scores

A	
B	Healthy - Make sure you have a plan to keep them that way
C	
D	Unhealthy - Need resources and a plan to get them healthy again.
F	
R	Recently retired. Need to fully decommission.

CDPHE Technology Health Scores by Division



Project Development Collaboration with OIT for this Project Started in 2019

- Developed a Stationary Sources Technology Roadmap in 2019-2020
- Mapped 34 current business/system processes (e.g., detailed workflow to submit a general permit application)
- Stakeholder engagement and feedback process
- Initial discussions in 2020 with Colorado Digital Services

Process Mapping

- General Permit
- Construction Permit
- Major Source/Title 5 Permit
- Title V Reporting
- Notice of Startup
- Stack Testing
- Settlements
- Self Audit
- Prescribed Fire
- Compliance Order/Consent Modifications
- Supplemental Environmental Project Agreements
- Landfill Design Capacity Reports
- Maximum Available Control Technology (MACT) and New Source Performance Standards (NSPS) Reports
- Landfill Gas Collection and Control
- Landfill Design Capacity Reports
- Maximum Available Control Technology (MACT) and New Source Performance Standards (NSPS) Reports
- Landfill Gas Collection and Control Systems (GCCS) Plans
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- Startup/ Shutdown/ Malfunction Reports
- Complaints
- New Source Performance Standards (NSPS) 0000 Annual Reports
- Regulation No. 7 Oil & Gas Emission Inventory Reports
- Mercury Reports
- Excess Emission Reports (EERs)
- Relocation Notices
- Inspection Report
- Infrared (IR) Camera Inspections
- Operation and Maintenance Plans
- Operation and Maintenance Plans (Oil & Gas)
- Operation and Maintenance Plans Modifications (Oil & Gas)
- Recertification and Relative Accuracy Testing Audits (RATAs)
- Continuous Emission Monitoring System (CEMS) Certification and Operation

Adherence to OIT technology standards

- **Salesforce / OnBase** - Workflow and Document Storage
- **Mulesoft** - API infrastructure
- **Tableau** - Analysis and Reporting
- **ArcGIS** - Spatial Analysis and Reporting
- **SIPA Payment Portal** - Online Payments
- **AWS** - Cloud Solutions, Data Warehouse platform

Implementation Methodology

20+ years ago

- Custom-coded IT products hosted in agency-owned data centers
- Expensive IT programmers, OIT staff, required to create & maintain them
- Gathered requirements up front and then built (waterfall) resulted in rigid systems
- These systems have become more fragile with each passing year as technology changes around them

Now

- We have a variety of options to invest in state-approved, cloud-hosted platforms that either OIT or CDPHE staff can configure more quickly and less expensively than before
- With these, we gradually get out of the data center business
- We use agile/scrum framework to develop IT products

Project Plan and Strategy for Success



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Stationary Sources System Project Summary

- A \$12.7M, three-year (FY23 – FY25) capital IT project to modernize the outdated stationary sources data system used by CDPHE, Air Pollution Control Division (APCD) - the first two years would be funded as a component of CDPHE's Air Quality Transformation Decision Item (R01)
- The Stationary Sources database is the primary technology tool used by CDPHE/APCD to manage permitting, inspections, enforcement, compliance, billing, emissions and data reporting associated with stationary sources
- The system scope is broad with 2,500 companies and 14,000 facilities
- Stationary source regulated entities include oil and gas, power utilities, manufacturing, construction, landfills, agriculture, mining and retail (e.g., gas stations, dry cleaners)
- The Stationary Sources Database is an outdated technology – (developed in the mid-1990's)
- The system is paper-based, inefficient, lacks critical functionality and agility

Stakeholder Engagement

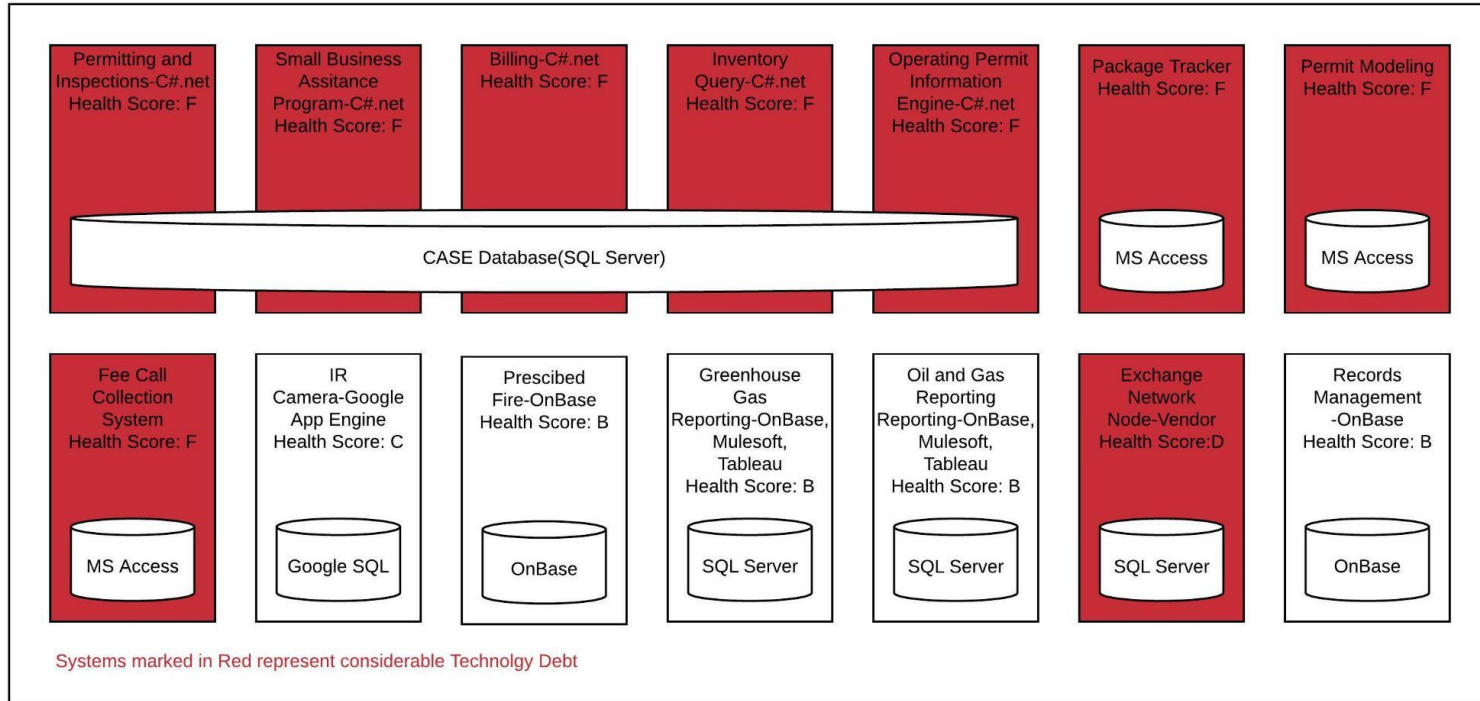
- Stationary source stakeholder group - quarterly meetings began in 2018
- Stakeholder identified system deficiencies included:
 - Data Transparency
 - Inability to complete bulk uploads of data
 - Lack of direct access to data (after a QA process has been completed)
 - No capacity for detailed tracking of a permit as it is being created
 - Inability to support electronic submission of all reports
- APCD is committed to continue to engage stakeholders and interested parties



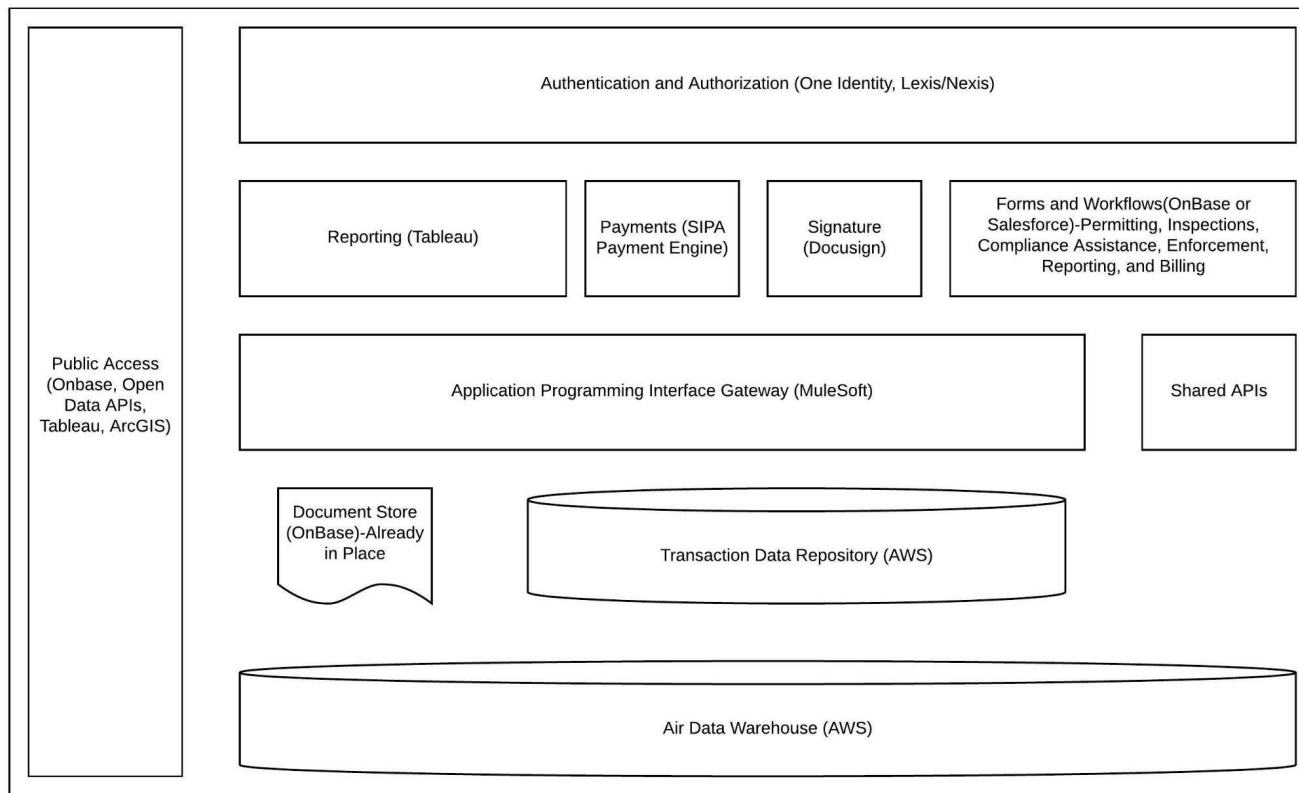
The Vision

- **Expedited Processes:** Timely processing of permits and inspection, compliance and enforcement work needs. Current systems directly contribute to bottlenecks and backlogs
- **Digital Services:** Transition away from outdated and inefficient paper-based system to an electronic workflow environment.
- **Streamlined Work:** Streamlined business processes and efficiencies across all applicable work products.
- **Data Reporting:** Improved data reporting, transparency and better public access to information.
- **Stakeholder Customer Service:** Reallocation of staff time will facilitate pro-active management, process improvements, responsiveness and stronger customer service.

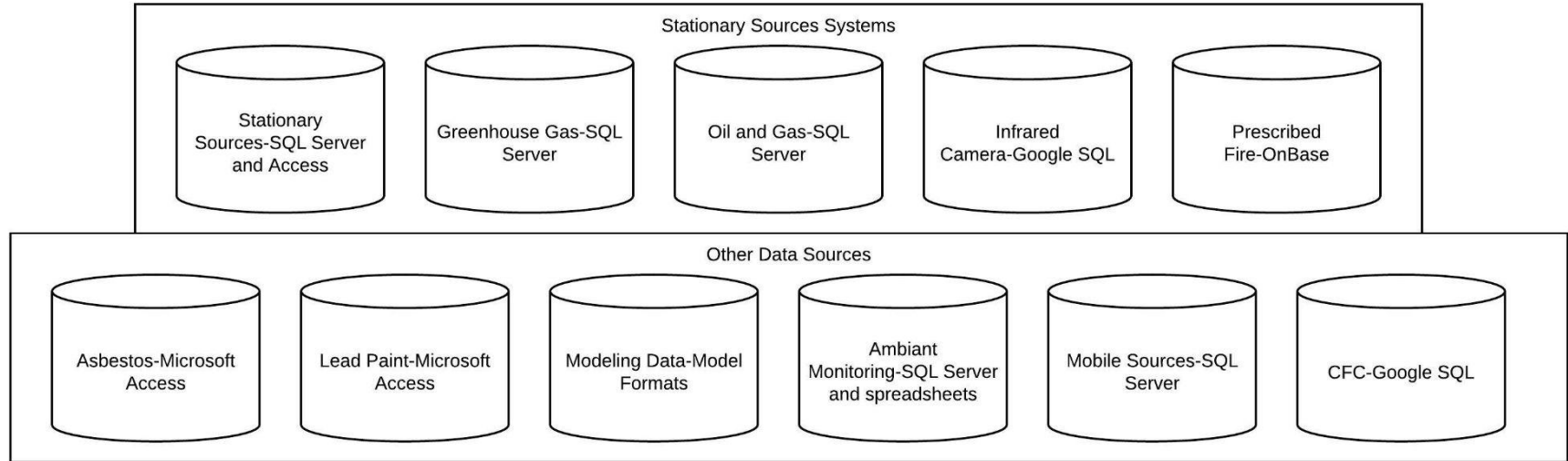
Current Stationary Sources Technology Footprint



Proposed Architecture of the Air Stationary Sources Solution



Data Sources for Data Warehouse



Data Types: Location, Permitting, Emissions Reporting, Billing, Complaints, Inspections, Compliance, Enforcement, Testing, Monitoring and Modeling

Stationary Sources Modernization High Level Timeline

	FY2022				FY2023				FY2024				FY2025				
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 1	Quarter 2	Quarter 3	Quarter 4	
<i>Charge Management</i>	Active																
<i>Capitol Development Process</i>		Active															
<i>Finalize Proposed Architecture</i>			Active														
<i>Develop APIs tied to current systems</i>					Active												
<i>Stationary Sources Solution Contracting</i>					Active												
<i>Base System Development</i>								Active									
<i>Workflows Development</i>									Active								
<i>Data Migration</i>											Active						
<i>User Training</i>											Active						
<i>Data Warehouse Contracting</i>					Active												
<i>Design Data Warehouse</i>						Active											
<i>Populated Data Warehouse</i>								Active									
<i>Develop Reporting</i>								Active									

Risks to Mitigate

- Staff/Expertise Availability
 - Govern using proven OIT/CDPHE collaborative Business Technology Strategy Committee governance structure
 - Proposal to bring in temporary staff so that existing expertise can be used to support development.
 - Work with Colorado Digital Services and OIT to develop best practices
- Staff and Customer Training and Support
 - Included as part of the legislative ask
- EPA Cross Media Electronic Reporting Rule (CROMERR)
 - Work with EPA to approve newer technology solutions

Thank you!

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Michael Ogletree, Director, Air Pollution Control Division, CDPHE

Andrew Putnam, Environmental Information Manager, CDPHE

Kristi Labarge, IT Director, OIT