

OIL AND GAS REGULATIONS 101

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Environmental Programs Division



ADAMS COUNTY
COLORADO

ADAMS COUNTY
GOVERNMENT CENTER

July 2025

AGENDA



Oil & Gas Production
& Well Inventory



Life Cycle of an
Oil & Gas Well



Regulatory Authority



County OGF
Permitting Process



County Regulations

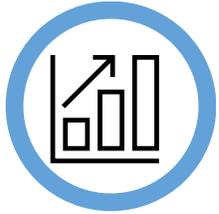


Compliance
Monitoring and
Inspections

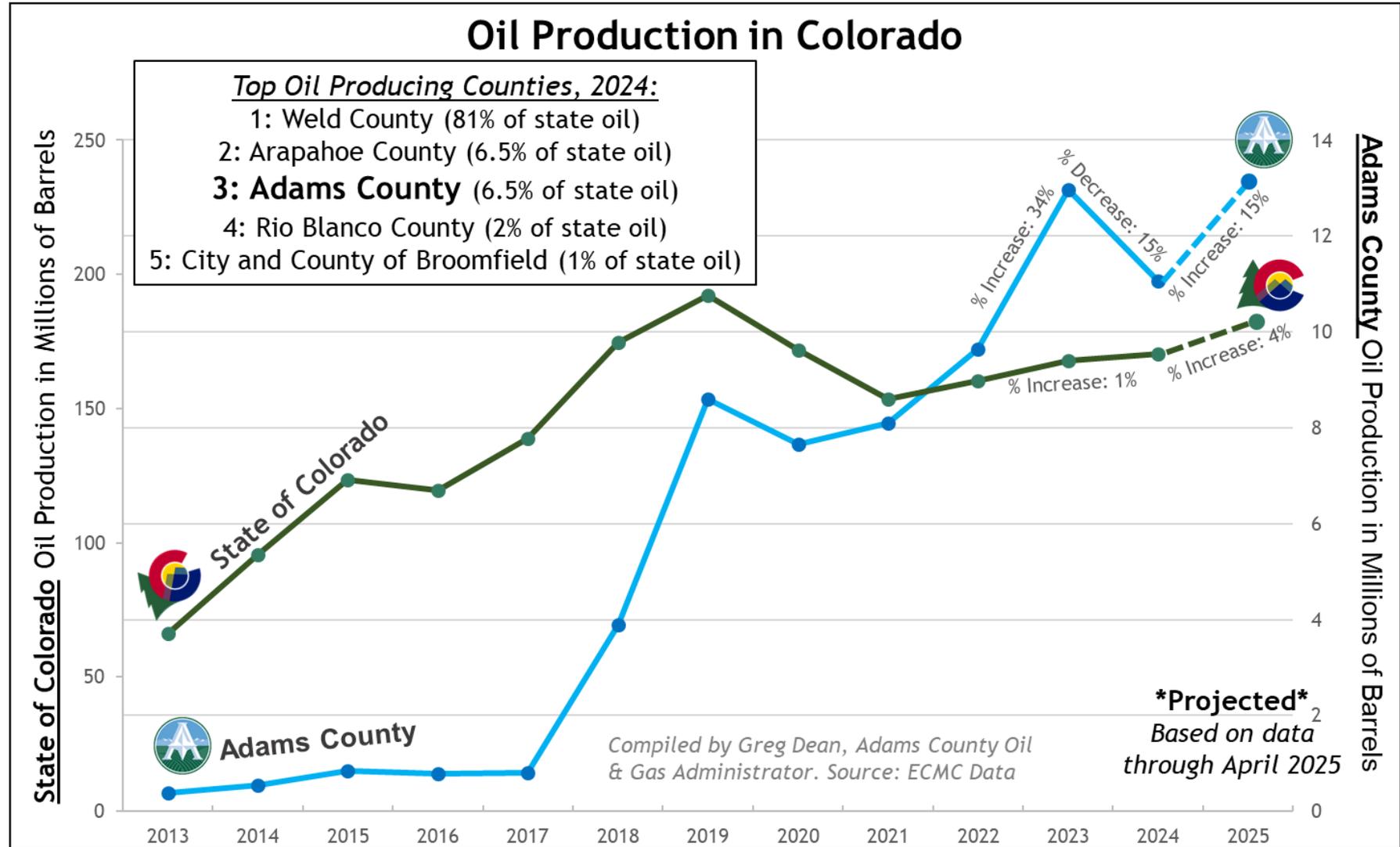


State Rulemakings

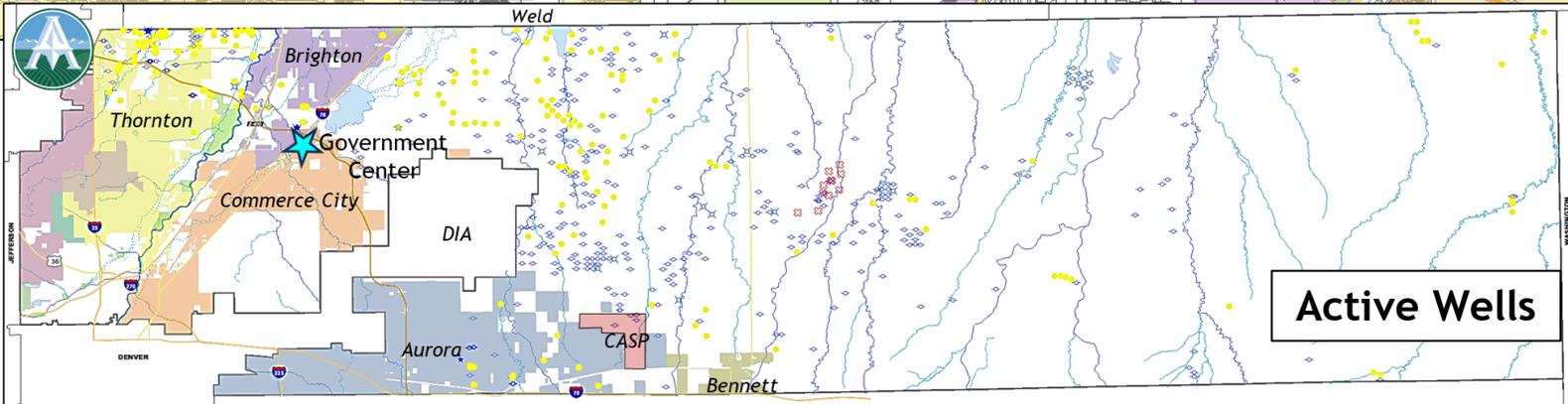
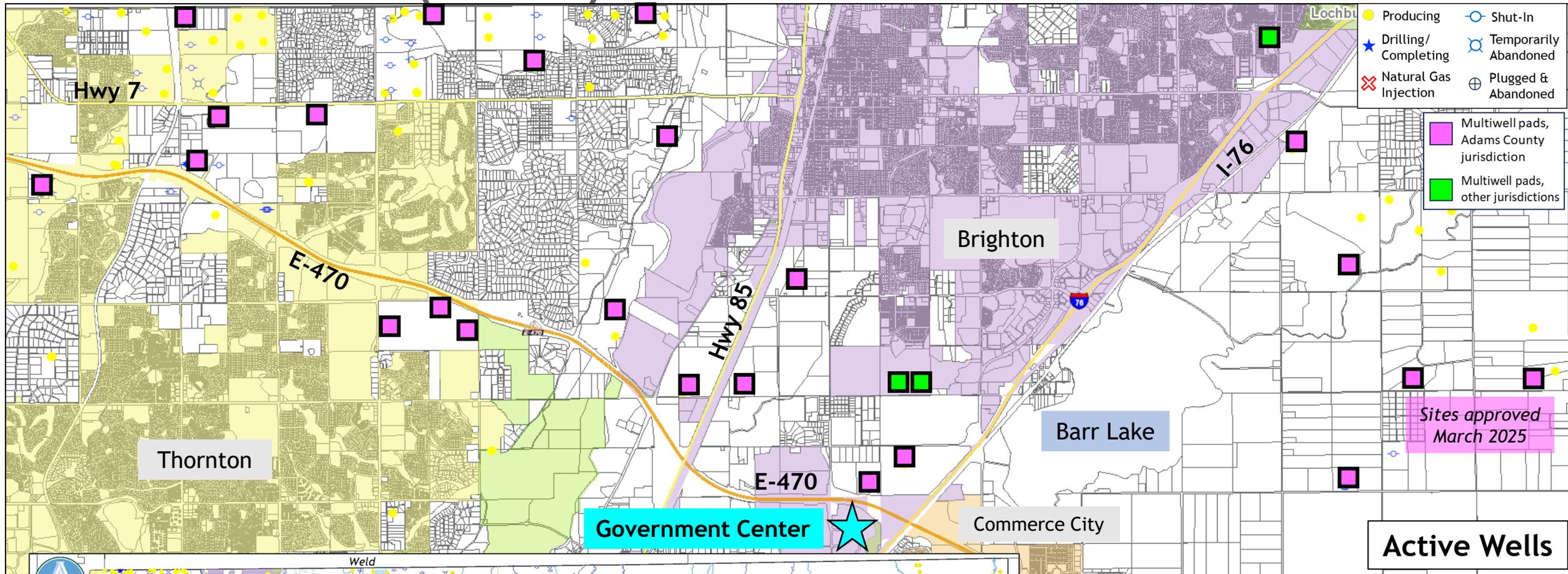
PRODUCTION SUMMARY



- ✓ The County was the second largest oil producing jurisdiction in Colorado from 2019-2023. 3rd largest in 2024. Projected 2nd largest in 2025.
- ✓ From 2023 to 2024 oil production in the County **decreased 15%** compared to a state increase of 1%.
- ✓ 11 million+ barrels of oil were produced in the County in 2024, representing 6.5% of all oil statewide (0.24% nationally).



OIL & GAS (O&G) SITE / PAD INVENTORY



Active Wells



Wells in Adams County

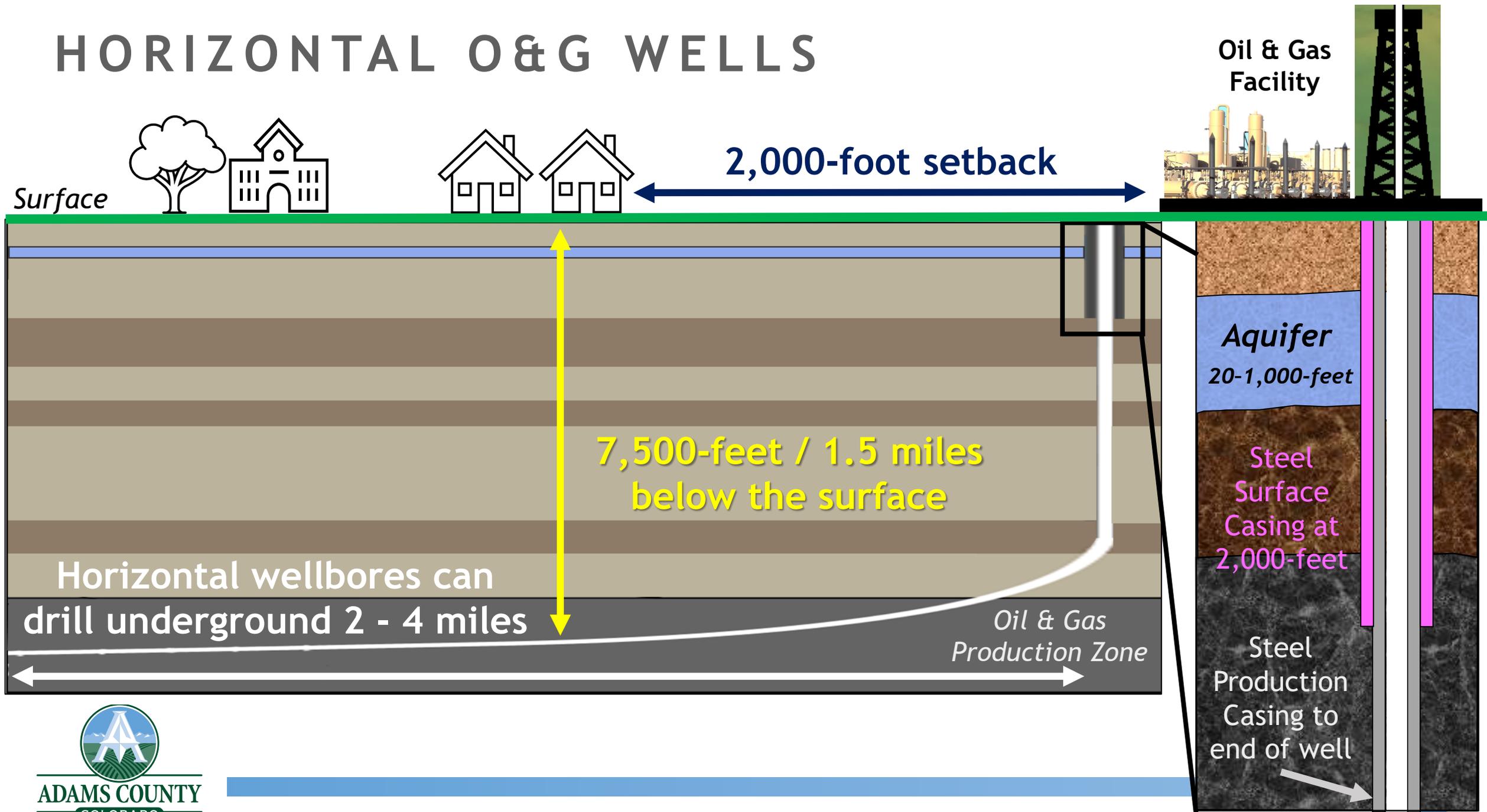
850 active wells
(including orphan wells)

2,800 plugged &
abandoned wells

Active Wells

OIL & GAS REGS 101

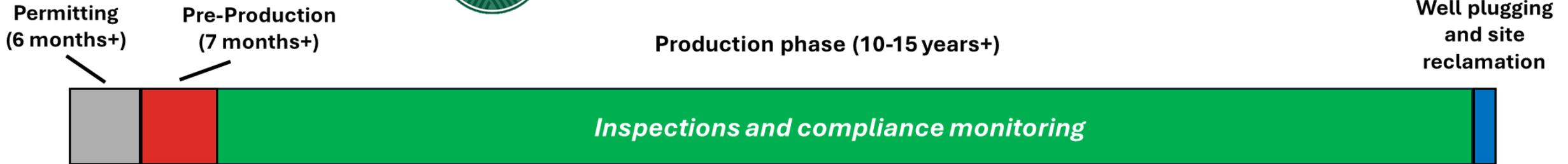
HORIZONTAL O&G WELLS



LIFECYCLE OF AN O&G WELL



Life cycle of a new horizontal well



*** To scale ***

Pre-Production Process (7 months)



**Estimations for an average sized facility. Timing can vary on a myriad of site-specific factors including permitting, equipment availability, well length/depth/count, environment or wildlife factors, and time of year.*

The potential for adverse off-site impacts from oil and gas development primarily occur during the pre-production phases of development. This includes, among others, possible impacts related to air quality/emissions/pollution, noise, traffic/access, water quality/usage, wildlife/habitat, environment, and safety. Adams County Development Standards and Regulations (DSR) were adopted to avoid, minimize, and mitigate impacts from oil and gas by siting facilities in a manner that is protective of public health, safety, and welfare.

REGULATORY AUTHORITY

Air Quality / Emissions:

State: Air Quality Control Commission (AQCC) primarily addresses air quality and emissions via that agency's Regulation 7 and 26, requiring:

- ✓ Air quality monitoring via an approved plan (AQMP)
- ✓ Air Pollution Emissions Notice (APEN) permit with emissions thresholds set by EPA, and requires emissions potential calculations, environmental justice reports, and air pollution modelling.
- ✓ Oil and Natural Gas Annual Emission Inventory Reporting (ONGAEIR) to the Air Pollution Control Division (APCD) with a public dashboard of reports.
- ✓ Annual Leak Detection and Repair (LDAR) reporting and repair requirements

Energy & Carbon Management Commission (ECMC) addresses cumulative impacts to air resources including NO_x and Greenhouse Gas Intensity targets, sets requirements for certain operations, and restricts venting and flaring during production operations.

County: General air quality protection provisions focused on monitoring that can be above state standards.

Air Quality/Emissions:

- AQCC/APCD/ECMC/State agencies
- Adams County (very limited)

Surface Impacts:

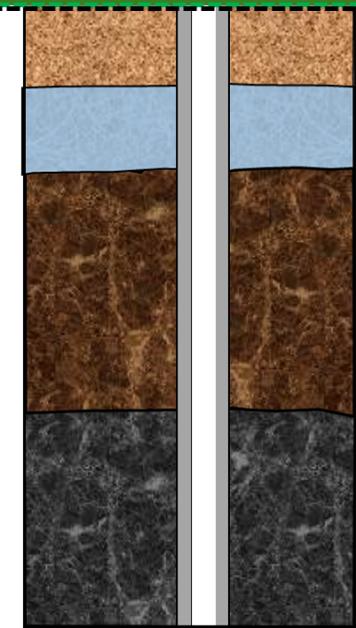
- Adams County
- ECMC / State agencies



Oil & Gas Facility

Subsurface:

- ECMC / State agencies



REGULATORY AUTHORITY

Surface Impacts:

Surface impacts addressed through a dual and co-equal regulatory authority between local governments and the ECMC

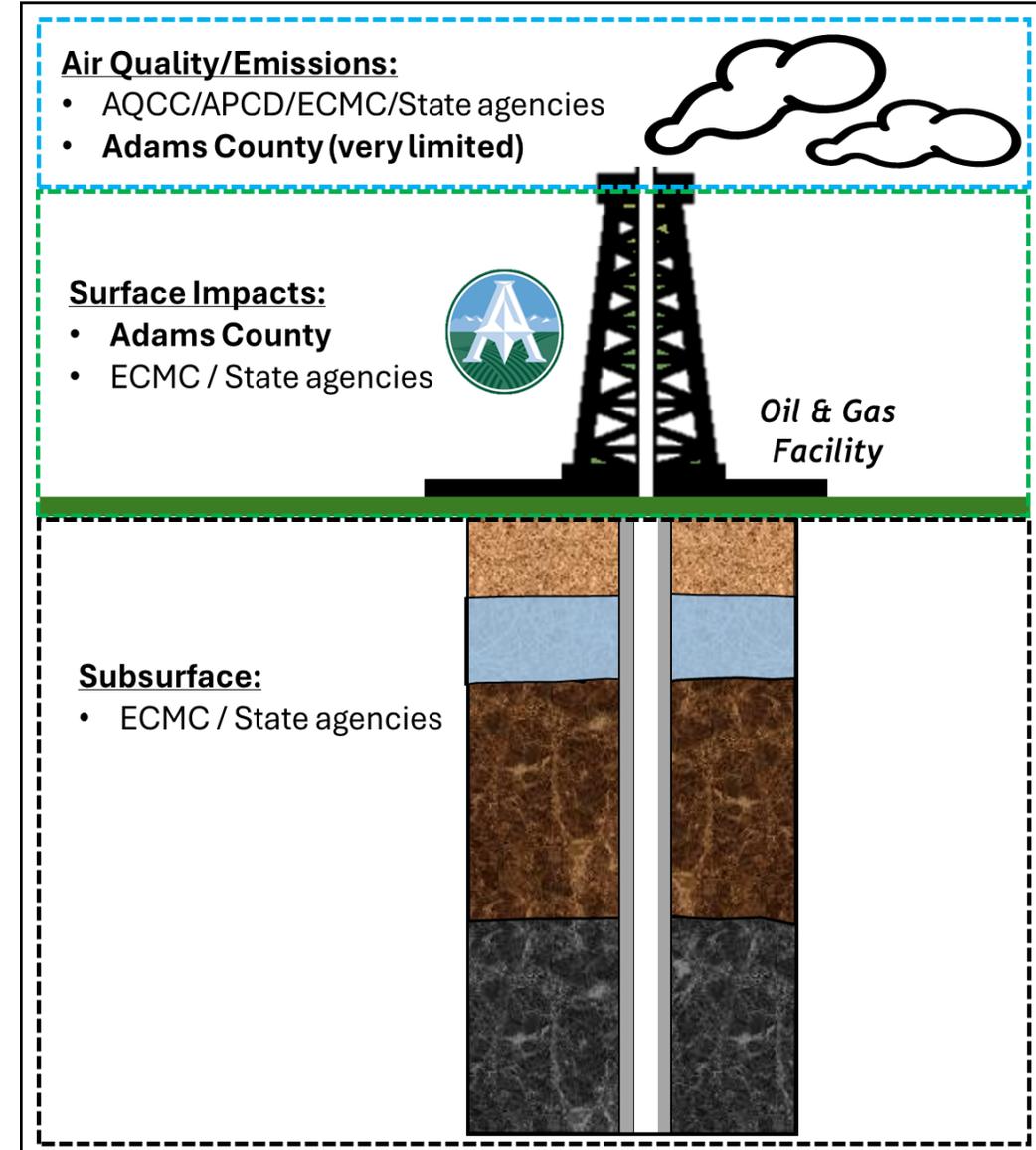
County: Evaluates impacts through our Oil & Gas Facility (OGF) permitting process. The County has sole authority over traffic impacts and haul routes. The County process includes consultation and coordination with all relevant state agencies.

State: ECMC reviews state permits concurrently with the County and maintains much of the enforcement authority for certain issues and complaints. CDPHE and Colorado Parks and Wildlife (CPW) provide recommendations to ECMC during permitting to address potential public welfare/health, environmental justice, and wildlife impacts.

Subsurface:

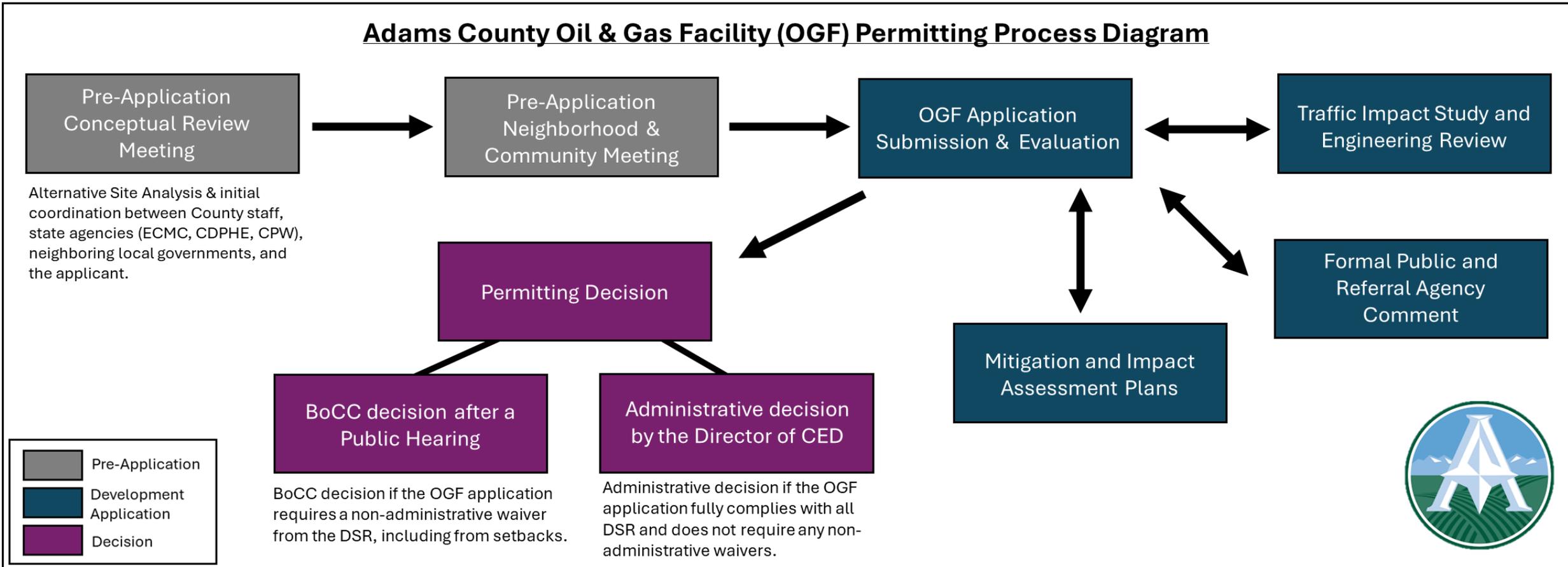
State: has sole regulatory authority over subsurface O&G operations. ECMC regulations address:

- ✓ Wellbore integrity
- ✓ Subsurface pressure monitoring
- ✓ Drilling and completion permits
- ✓ Wellbore collision prevention
- ✓ Plugging and reclamation
- ✓ Groundwater monitoring and sampling



COUNTY OGF PERMIT PROCESS

Adams County Oil & Gas Facility (OGF) Permitting Process Diagram

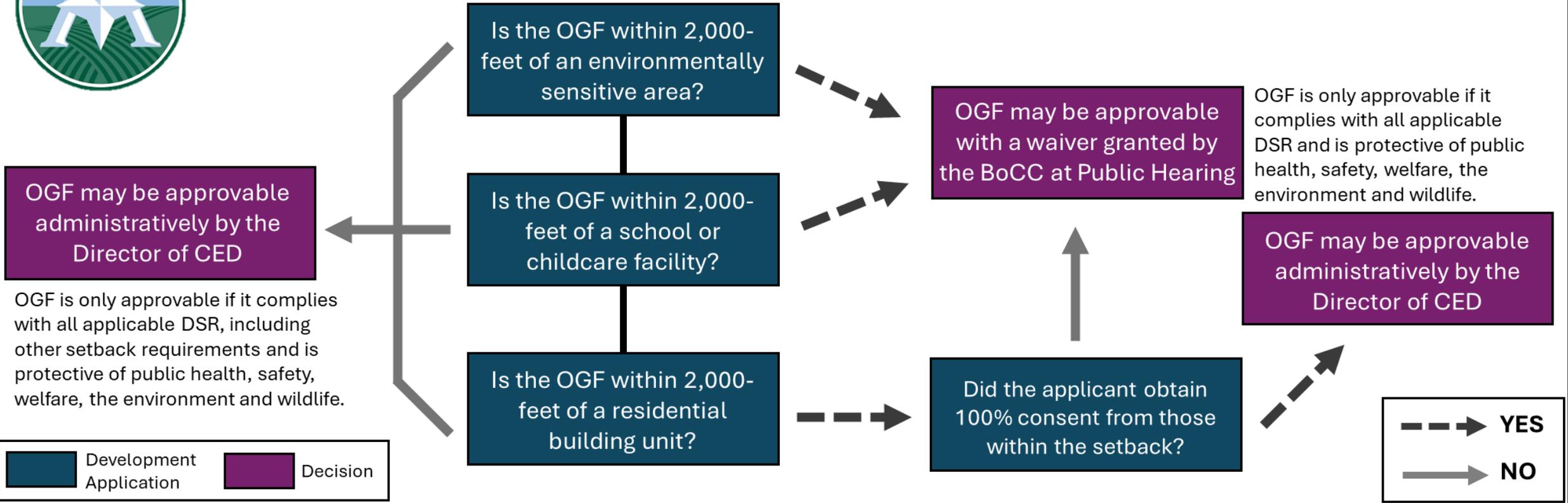


- Adams County adopted OGF regulations in September 2019, amended them in July 2021 after the Mission Change Rulemaking at the ECMC (formally COGCC)
 - ✓ After passage of SB19-181 - Local Government authority of off-site surface impacts
 - ✓ Adams County was the first jurisdiction to enact its own regulations

COUNTY SETBACK WORKFLOW



Adams County Oil & Gas Facility (OGF) Setbacks Workflow



SUBSTANTIALLY EQUIVALENT DETERMINATION FOR SETBACK WAIVERS

In granting waivers from setback requirements, the BoCC must determine if the OGF demonstrates **substantially equivalent protections** that are equal or more effective to avoid, minimize, or mitigate potential adverse impacts than the setback distance. The BoCC may consider:

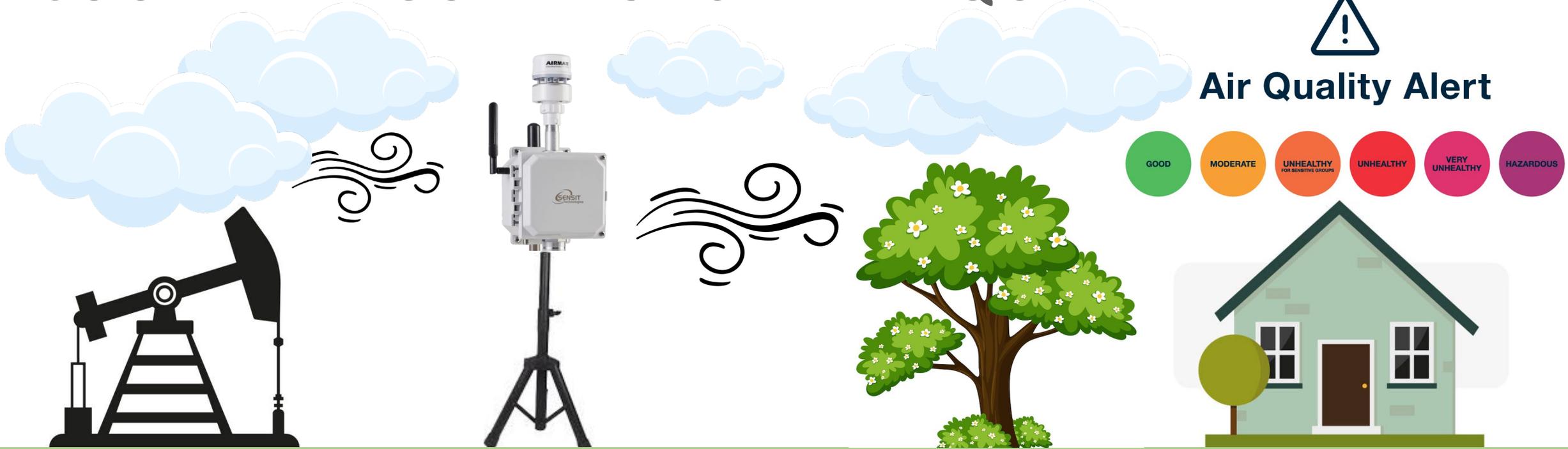
- ✓ Proposed best management practices, control measures and technologies, and facility design
- ✓ Location, nature, and size of the facility and proximity of receptors
- ✓ Duration and intensity of operations
- ✓ Compatibility with surrounding and future land use
- ✓ Level of consent or waivers obtained from landowners or residents within the setback

REQUIRED IMPACT ASSESSMENT PLANS

OGF permit applicants must submit over 12 mitigation and impact assessment plans that demonstrate compliance with the DSR and avoid, minimize, and mitigate the potential for off-site adverse impacts to public health, safety, welfare, the environment, and wildlife resources including:

- ✓ Noise
- ✓ Odor
- ✓ Dust
- ✓ Light
- ✓ Visual Aesthetics and Landscaping
- ✓ Emergency Preparedness & Spill Prevention and Response
- ✓ Cumulative Impacts
- ✓ Environment and Wildlife
- ✓ Water Quality and Protection
- ✓ Stormwater and Drainage
- ✓ Traffic
- ✓ Community Outreach and Engagement

COUNTY REGULATIONS – AIR QUALITY



Air Quality Alert



Mitigation / BMPs the County can require:

- Highest potential for air quality impacts occur during pre-production operations, for those living within than 1,000-feet.
- Most likely pollutants released from O&G facilities are BTEX, VOCs, and Toxic Air Contaminants. These, if released, typically occur at concentrations below CDPHE Health Guideline Values
- Air quality monitoring is required at all locations statewide

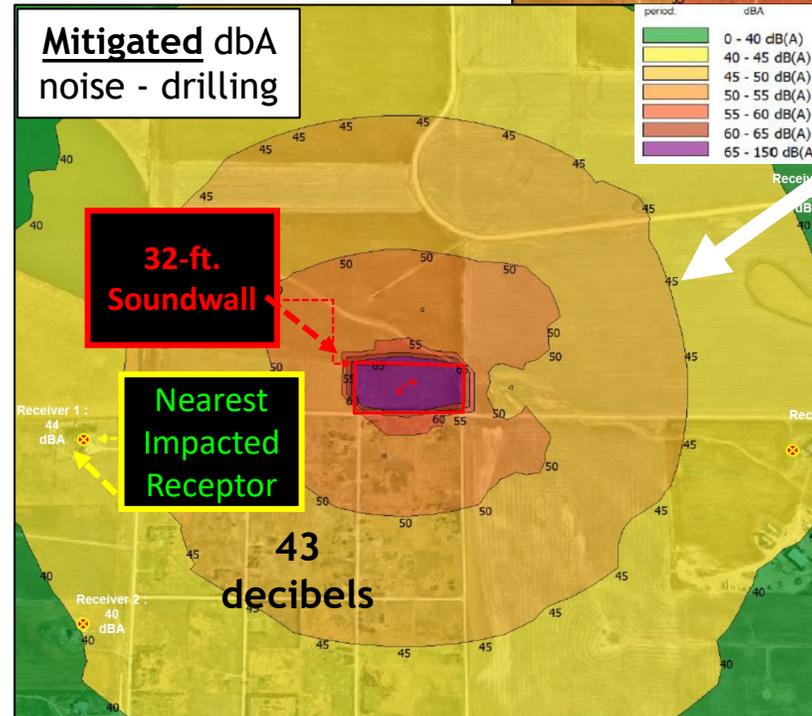
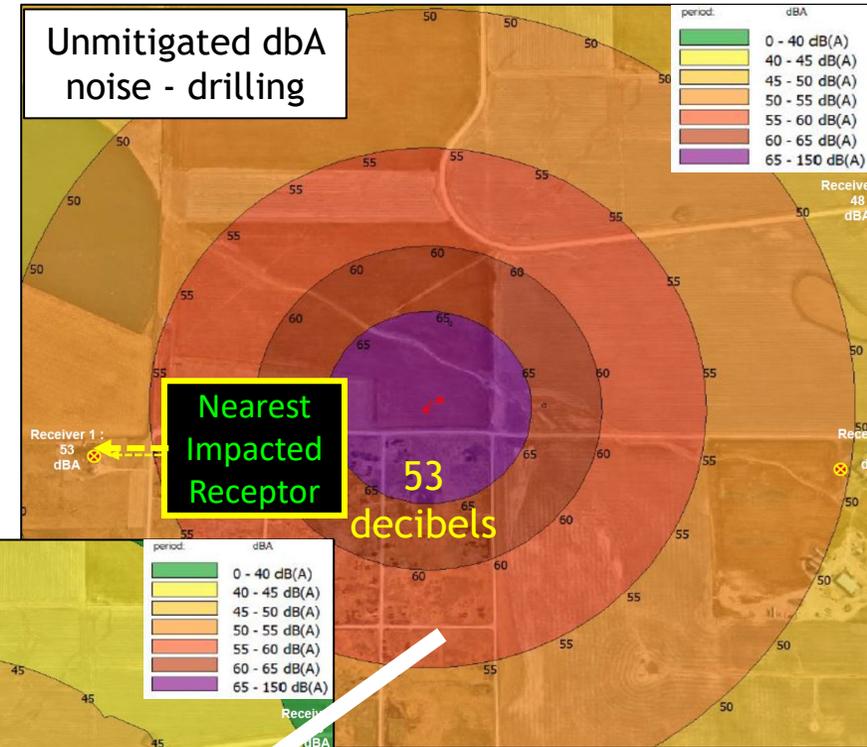
- The DSR allows for necessary and reasonable control measures, above state requirements, and often include:
 - ✓ Additional air quality monitors/sensors
 - ✓ Longer monitoring periods (1 year vs 6-months)
 - ✓ Automatically-triggered whole air canister sampling for VOCs and BTEX
 - ✓ Electrification of drilling rigs and engines
 - ✓ Tankless facilities

COUNTY REGULATIONS - NOISE

- Operators are required to conduct an ambient noise study in the area and submit a Noise Mitigation Plan that addresses both high and low frequency noise (dba and dbC) during drilling and fracing operations.
- Operators must comply with the lower allowable noise levels in the DSR when the OGF is near a zoning designation boundary.
- Potential for noise impacts are greatest during completions and drilling, significantly reduced during the production phase.

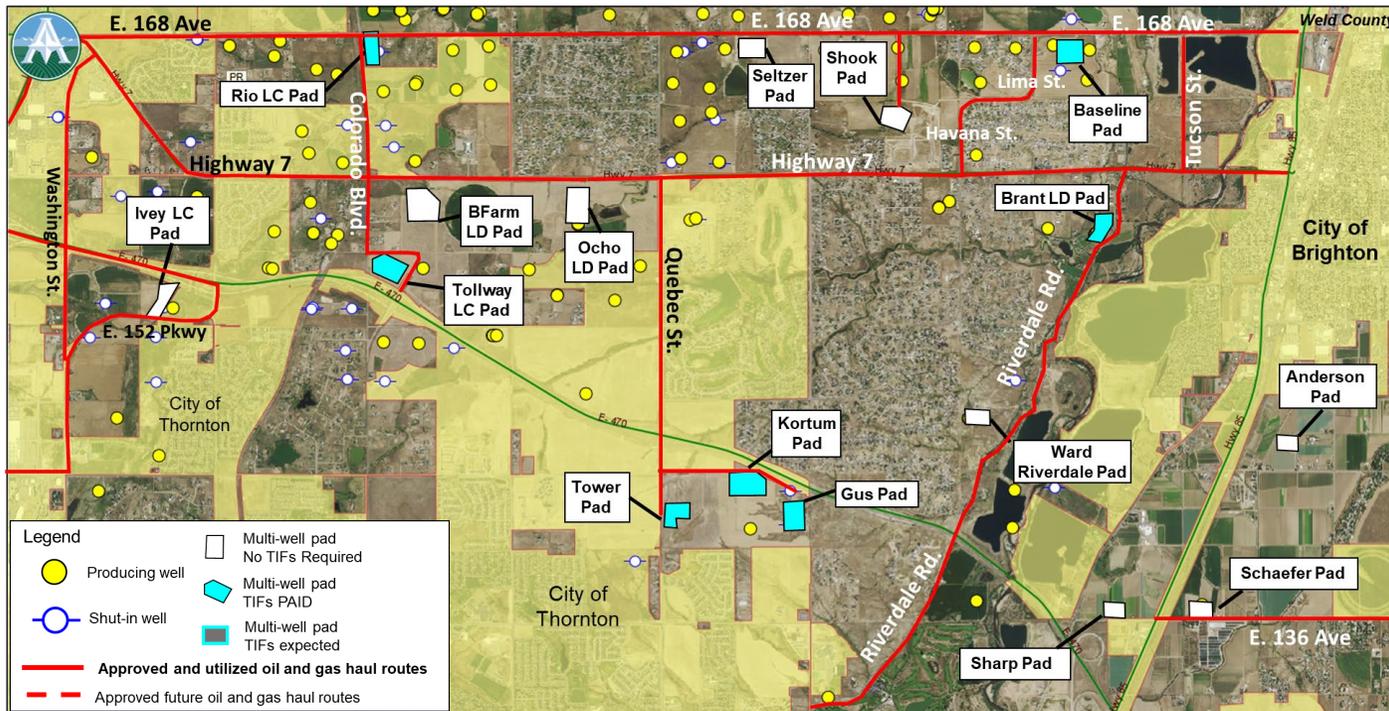
Mitigation / BMPs the County can require:

- Electric drilling rigs
- Use of quiet frac fleet engines
- Installation of soundwalls around the site during drilling and completion operations
- Continuous background noise monitoring during pre-production



Example noise model data submitted by an applicant

COUNTY REGULATIONS - TRAFFIC



Utilized Haul Routes Map

- 75%+ of all O&G traffic occurs during site construction and pre-production operations and typically last 6-9 months. Traffic during long-term production operations significantly decreases (100-200 truck trips per day, reduced to 2-6 per day).

- O&G Traffic Impact Fees (TIFs) were implemented by the BoCC after a 3rd party traffic impact study and a public process in 2018.
- O&G TIFs are required to recover incremental costs associated with impacts to County road networks including:
 - ✓ Damage and reconstruction
 - ✓ Increased road maintenance
 - ✓ Paving of unpaved roads
- Amount of the TIF assessed depends on
 - ✓ Number of permitted wells
 - ✓ Location of the OGF
 - ✓ Level of connection to pipelines
- TIFs range from \$3,300-\$36,500 per well in the west and \$13,300-\$61,800 per well in the east

COMPLIANCE MONITORING & INSPECTIONS

Oil & Gas Facility Inspections

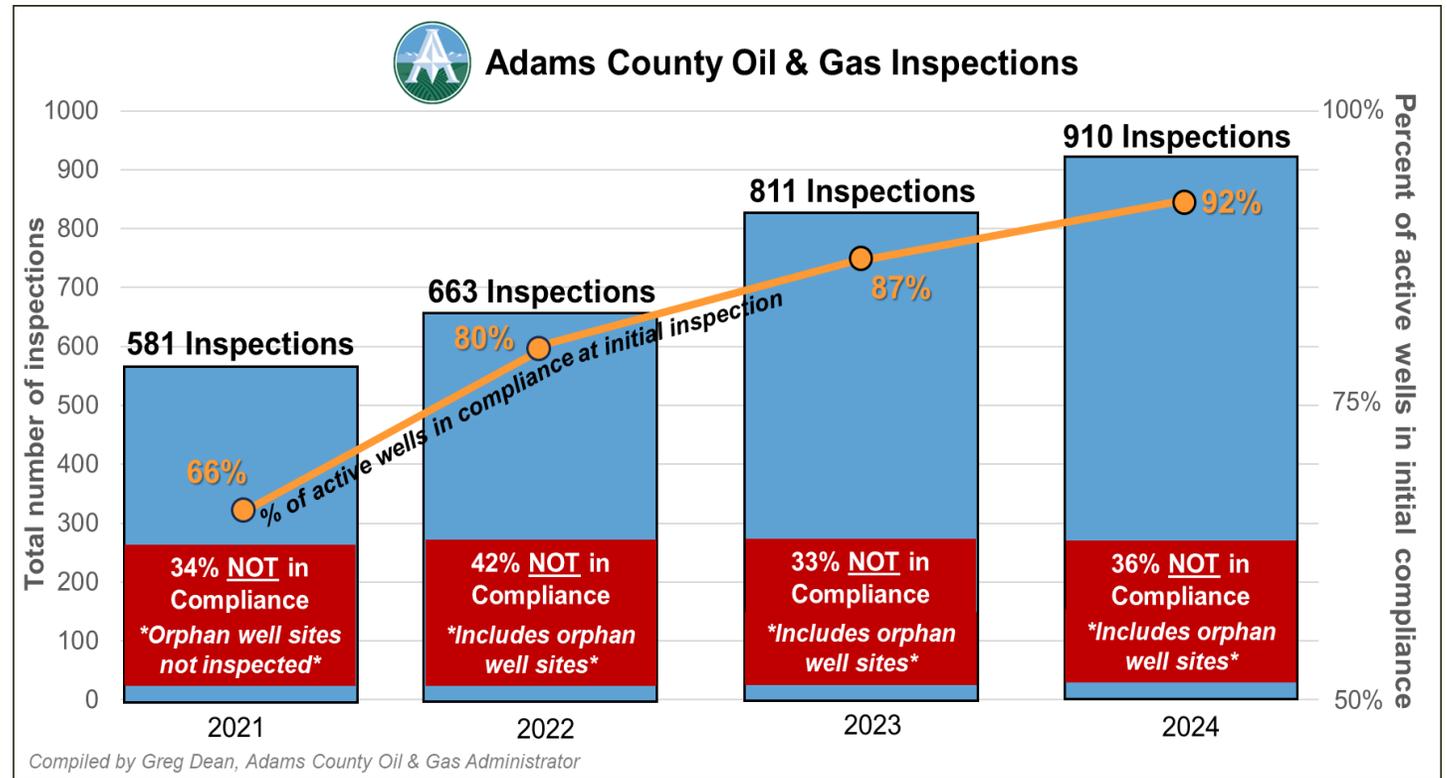
- The County has 2 full time inspectors and have access to oil and gas sites via an IGA with the ECOM
- The County conducts various types of oil and gas inspections including:
 - ✓ Routine annual / proactive / billable
 - ✓ Complaint-based
 - ✓ Compliance follow-up
 - ✓ Site status / active operations
 - ✓ Orphan well site



County-owned OPGAL Gas Imaging Camera, sound-level meter, and PID Sensor

Air Quality Compliance Monitoring

- Staff evaluates all state air quality monitoring plans and provides comments and feedback to APCD
- Staff reviews monthly air quality monitoring reports for exceedances and data quality
- County receives alerts if there are any automatically-triggered air quality events



STATE RULEMAKINGS

The County has participated in nearly a dozen state-level rulemakings as either as a formal party or as part of a local government coalition in the past several years. The County advocates for robust and reasonable regulations that avoid or reduce adverse impacts to residents and resources. These included:

Energy and Carbon Management Commission (ECMC)

- ✓ Mission Change (setbacks, permitting, venting, and operations)
- ✓ Financial Assurance
- ✓ Cumulative Impacts and community engagement

Air Quality Control Commission (AQCC)

- ✓ Air quality monitoring (Reg 7)
- ✓ Ozone precursor emissions (Reg 7)
- ✓ Midstream (Reg 7, 25-27)
- ✓ Priority Toxic Air Contaminants (Reg 30)
- ✓ Air Toxics Reporting and Health Based Standards (Reg 3, 7, and 30)

Public Utilities Commission (PUC)

- ✓ Pipeline Safety and Leak Detection and Repair standards
- ✓ Pipeline mapping and information sharing

Through our ardent participation, the County has been successful at getting numerous proposals and recommendations adopted into state-wide regulation. The County is participating in several upcoming rulemakings at the AQCC and other agencies to further advocate for more protective regulations.

