

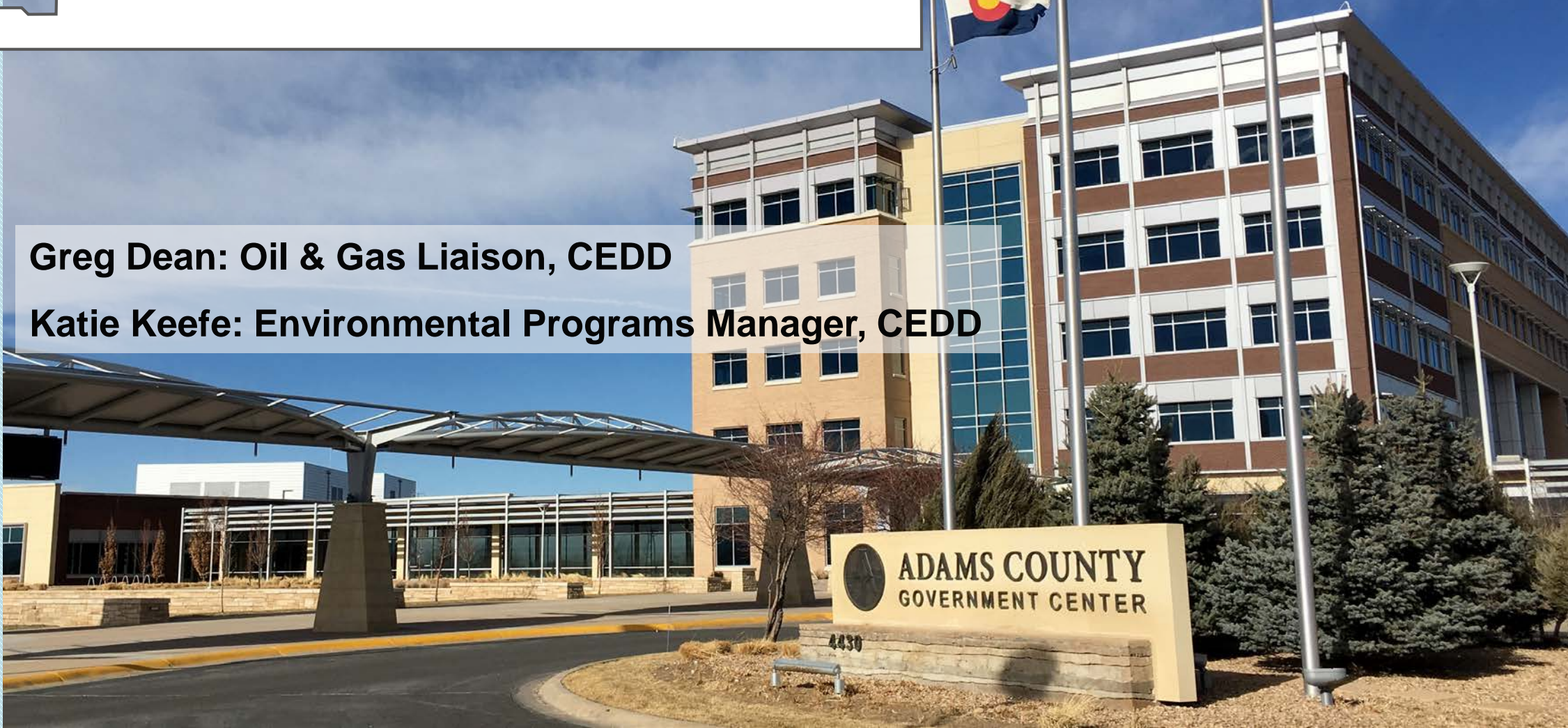


Ivey LC Pad Update

January 5, 2021

Greg Dean: Oil & Gas Liaison, CEDD

Katie Keefe: Environmental Programs Manager, CEDD





Ivey LC Pad Update

Agenda



Location of Ivey LC Pad



Timeline of Ivey Permitting



COGCC Director's Objective Criteria (DOC)



Adams County & Colorado Oil and Gas Conservation Commission (COGCC) Regulation Comparison

- **Setbacks**
- **Estimated Noise**

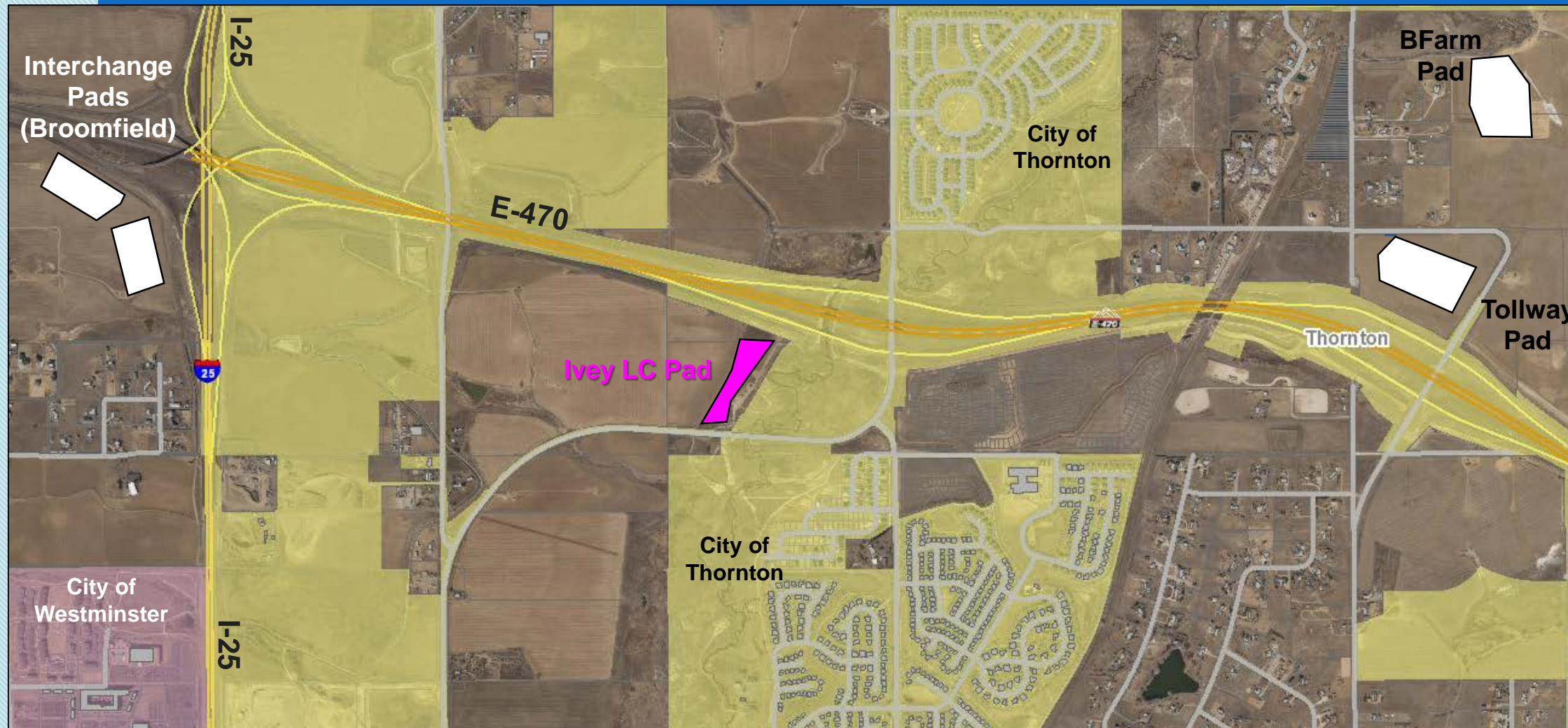


Summary of Best Management Practices (BMPs)



Ivey LC Pad Update

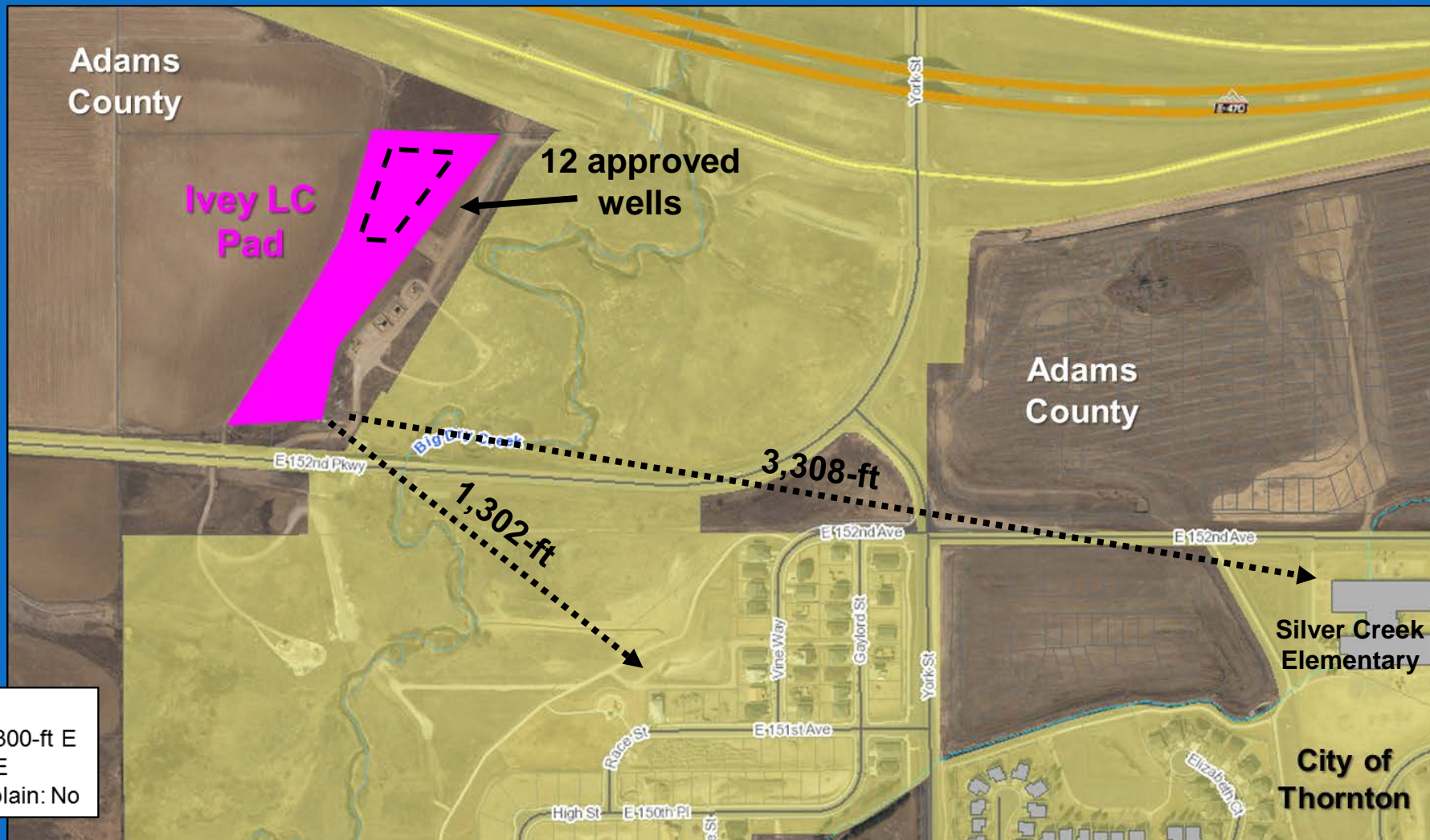
Location Map





Ivey LC Pad Update

Location Map

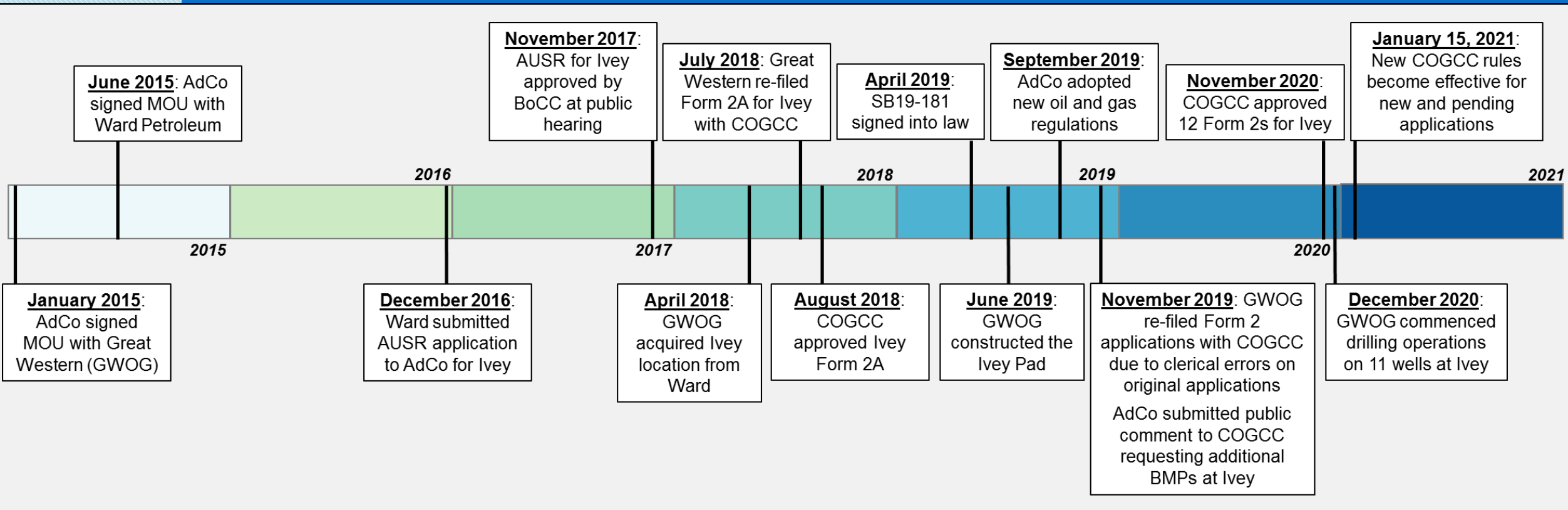


Nearest Home: 1,300-ft SE
Nearest School: 2,850-ft W / 3,300-ft E
Nearest Water Well: 1,075-ft NE
NRCO District: No Floodplain: No



Ivey LC Pad Update

Permitting Timeline





Ivey LC Pad Update

COGCC Director's Objective Criteria

Director's Objective Criteria (DOC)

DOC added a level of scrutiny and analysis on pending oil and gas permits to ensure protection of public health, safety, welfare, the environment and wildlife resources. DOC were created to serve as a framework for the future oil and gas regulations and to allow the COGCC to evaluate and review applications during the Mission Change rulemaking process to ensure compliance with the intent of SB19-181.

COGCC Director has approved **128 Form 2** (Drilling) permits under the DOC since the passage of SB19-181 (April 2019) in Adams County

DOC triggers at Ivey LC Pad included:

- Within 1,500-feet of a building unit and a jurisdictional boundary (Thornton)
 - Near a floodplain, sensitive water resource area, and wildlife habitat
 - Location included produced liquid storage in excess of 5,200 gallons
 - A local government requests additional consultation (AdCo)
- ✓ All DOC triggers were addressed with additional BMPs to the COGCC permit approvals



Ivey LC Pad Update

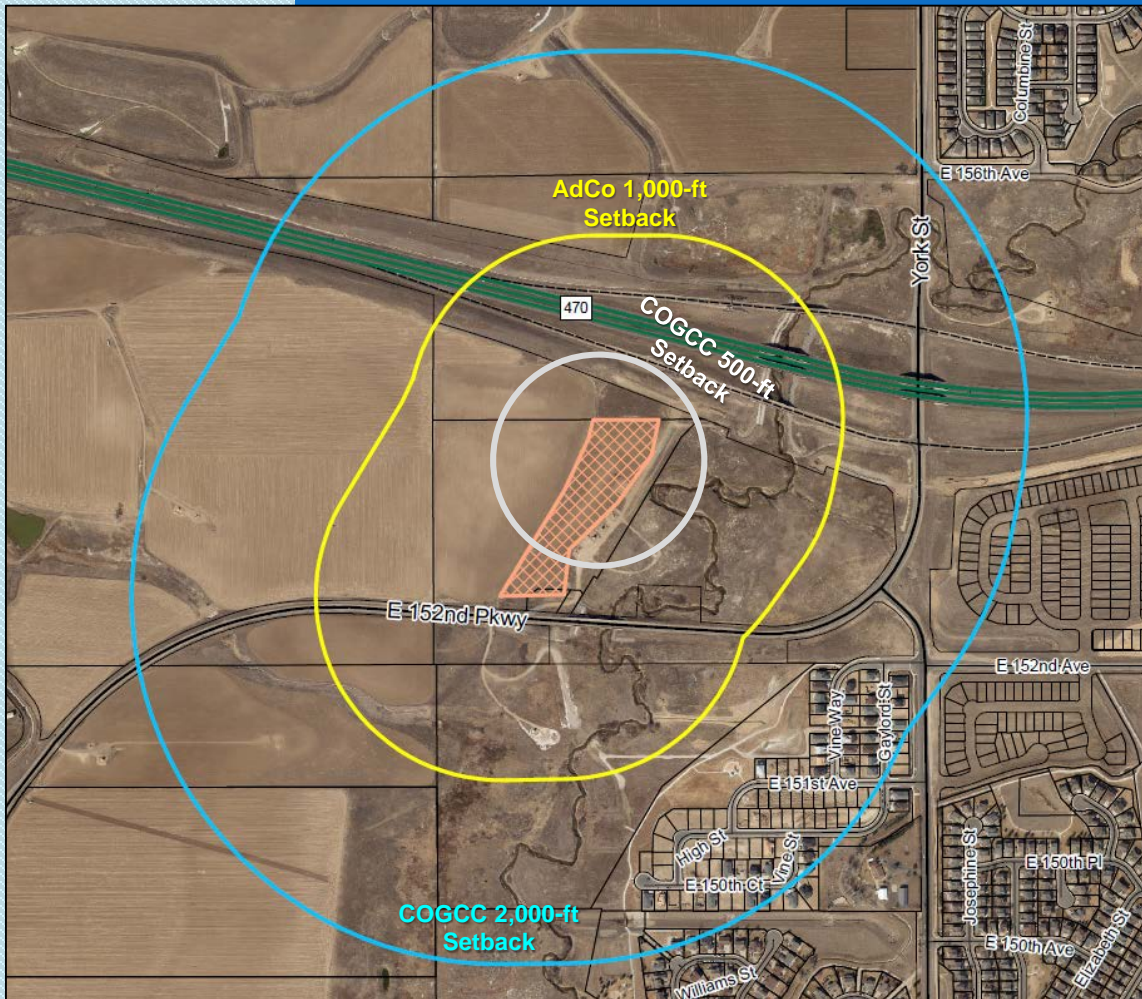
Rule Comparison

Impact	AdCo Regulations at Permitting	COGCC Rules at Permitting	Current AdCo Regulations	COGCC Rules effective January 15, 2021	Permit Conditions and BMPs at Ivey Site	Meets January 15, 2021 rules?
Setbacks	500-feet (same as COGCC at time of permitting)	500-feet from residences and school facilities	1,000-feet from residences, schools & environmentally sensitive areas	2,000-feet from residences and schools 1,000-ft from water wells & some water bodies	1,300-feet from nearest residence and 2,850-feet from nearest school /childcare center	No , but an Operator could still be granted an exception or waiver to these rules
Air Quality Monitoring	Not required	Not required	Required on site-specific basis	Not required	Air quality monitoring from drilling through the first 6 months of production	N/A
Noise	Same as COGCC	Various db(A) requirements based on land use, no db(C) restrictions	Same as COGCC, Baseline Noise Study required, and Continuous Noise Monitoring on site-specific basis	Requires continuous noise monitoring, lower maximum permissible noise in some areas, and AdCo determines land use designation for maximum noise at COGCC	Operator improved noise mitigation: 32-ft. sound walls around entire site vs. 24-ft walls, sound dampening equipment, and use of lower decibel electric engines	Partially , based on noise modeling - with mitigation, Ivey will meet new noise standards at residences to the SE/NE
Alternative Location Analysis	Not required	Not required	Required for all new applications	Required for locations within 2,000-ft of homes	Operators conducted ALA to move location from Wadley Farms site	Partially , did not meet all submission requirements of a formal ALA
Cumulative Impacts Evaluation	Not required	Not required	Not required	Required for all new applications	Analysis not formally conducted	No



Ivey LC Pad Update

Setbacks



Measure from:	AdCo Setback at time of permitting	COGCC Setback at time of permitting	Current AdCo Setback	COGCC Rules effective January 15, 2021	Ivey LC Pad Setbacks
Edge of the Pad	Not regulated	Not regulated	1,000-feet from residences, schools & environmentally sensitive areas	2,000-feet from residences and schools & 1,000 -ft from water wells & some water bodies	Residence – 1,300-ft SE (21 homes within 1,500-ft; 102 homes within 2,000-ft) School – 2,850-ft W (childcare); 3,300-ft E (Elementary)
Nearest wellhead	500-feet (same as COGCC at time of permitting)	500-feet from residences and school facilities	N/A	N/A – factors into the granting of exceptions	Residence – 1,580-ft SE School – 3,135-ft W (childcare); 3,585-ft E (Elementary)

**would require an exception/waiver to current AdCo rules & COGCC rules effective 1/15/21*

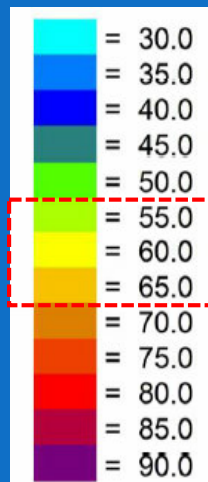
- Ivey Pad Site**
- Current AdCo Setback effective 09/03/2019**
1,000-ft from edge of pad to parcel boundary
- COGCC Setback effective 01/15/2021**
2,000-ft from edge of pad to a physical structure
- COGCC Setback at permitting**
500-ft from wellhead to a physical structure



Ivey LC Pad Update

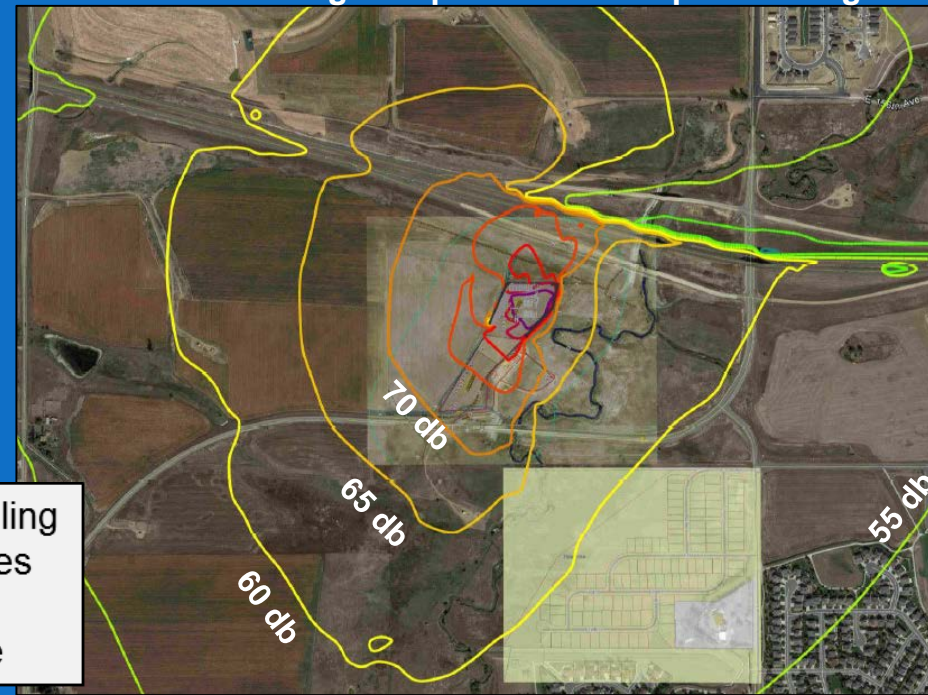
Estimated Noise

Noise during Drilling – with partial mitigation



*Mitigation included in modelling provided by the Operator does not include additional noise-related BMPs at the Ivey site

Noise during Completions – with partial mitigation



	Maximum Allowable Noise under COGCC rules at permitting	Maximum Allowable Noise under COGCC rules effective 1/15/20	Mitigated Modelled noise from Ivey Pad at residences (1300-ft)	Meets January 15, 2021 rules?
A-scale (high frequency)	70 dbA – daytime 65 dbA – nighttime Light Industrial zoning noise standard	65 dbA – daytime 60 dbA - nighttime Agricultural zoning noise standard	45-55 dbA – drilling 55-65 dbA - completions	Partially – will comply with dbA noise at 1,000-ft, no continual noise monitoring
C-scale (low-frequency)	Not regulated	65 dbC	55-60 dbC – drilling 60-65 dbC - completions	Partially – will comply with dbC noise at 1,000-ft, no continual noise monitoring



Ivey LC Pad Update

Summary of BMPs

BMPs in place, above regulation requirements at time of permitting

Adams County 2017 Permit BMPs:

- Quarterly neighborhood meetings
- Use of pipelines for transporting oil
- Reduced traffic and truck speeds on York St./E.152nd during peak school hours
- Deceleration and turning lane installation requirement
- Sound impact and modeling assessment study requirement

COGCC 2020 Form 2 BMPs:

- Air Quality Monitoring from drilling through the first 6 months of production
- Taller sound walls and other mitigation measures to further reduce noise
- Low odor mud
- More robust stormwater, spill prevention, and leak detection requirements

Operator additional BMPs:

- Location will comply with new Wellbore Integrity rules, which became effective on November 2, 2020
 - New requirements for protecting and isolating all groundwater-bearing zones
 - Increased requirements for regular pressure testing and monitoring
 - Enhanced blowout prevention equipment requirements