



Oil and Gas Development: Land Use Considerations

Planning Commission
January 14, 2014

Activity within Greeley city limits

◉ Working numbers

- 431 active wells
 - All require Use by Special Review
 - Equals about 800 ac (1.3 sq miles) surface (2.7%)
- 1,221 within city + LREGA
- 259 inactive wells
 - Includes 161 abandoned & 55 plugged/abandoned

◉ Generally clustered – multiple wells at each site

Economic Impacts

- New jobs create demand for housing
- Higher salary helps increase per capita and median household income
- New Noble Energy Schneider Energy offices creating 300-400 new jobs
- Weld County over 20,000 wells
- 40+% Weld operating revenue

Greeley FY	Tax revenue
2005	505,712
2006	441,280
2007	314,537
2008	599,446
2009	1,611,013
2010	450,831

Economic Impacts

2012 Realized Revenues to City of Greeley due to oil/gas:

Mineral royalty payments (city property)	\$230,000
Leasehold Payments	4,000
Sales & use tax receipts	180,000
Property tax	690,000
Severance tax	1,400,000
Federal mineral lease distribution	687,000
TOTAL – 2012 direct revenue to City	3,191,000

Economic Impacts (Projecting 10x increase in current City O&G activity)

Assumptions: 250 Horizontal Wells over 10 years in Greeley Area

- Well Cost: \$5M per well
- Total Capital Expense: \$1.25 Billion

Royalties from Production (Lifetime – approximately 20-25 years)

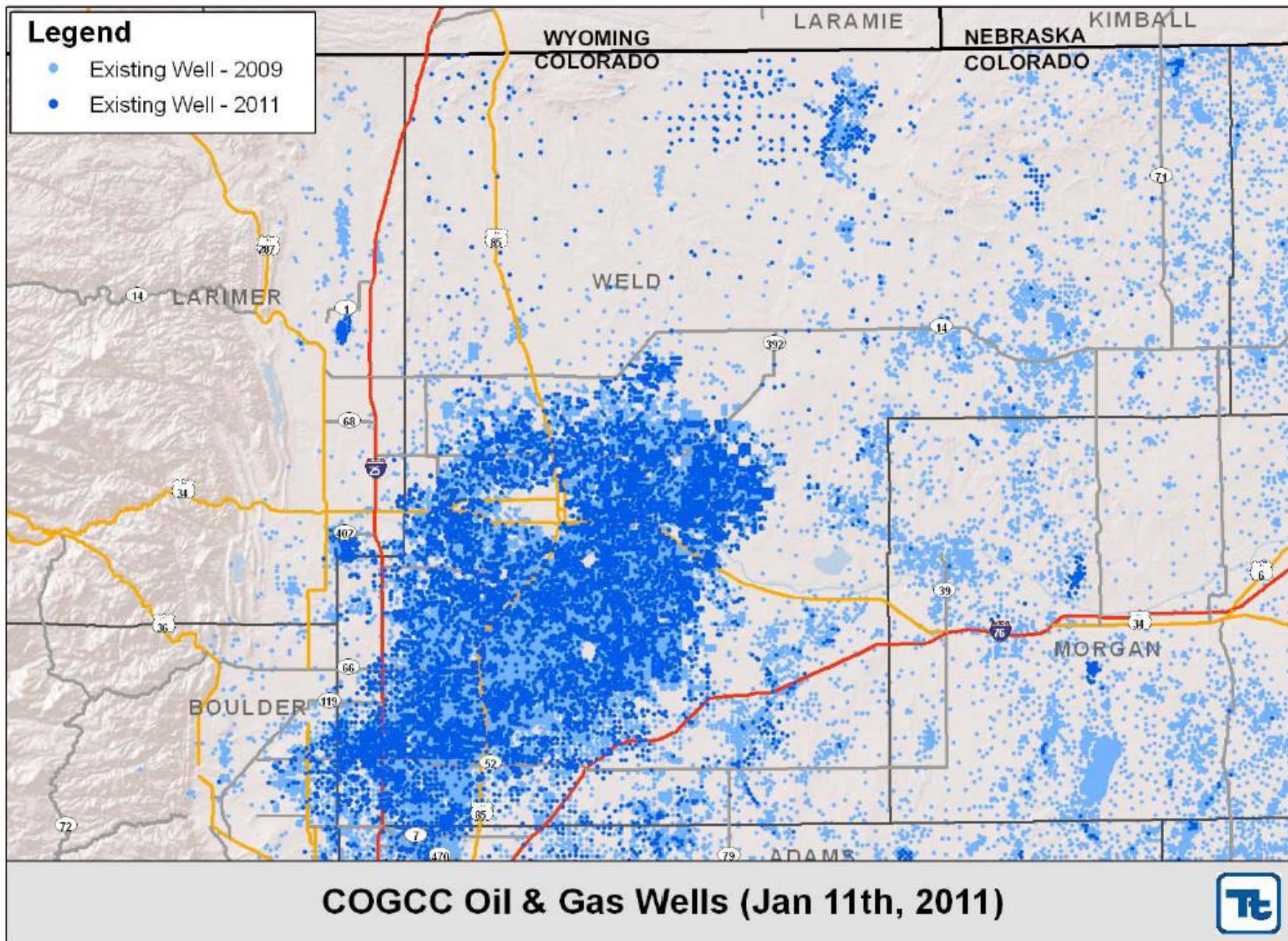
• University of Northern Colorado	\$ 22 Million
• Greeley Evans School District #6	\$ 21.6 Million
• Aims Community College*	\$ 21.5 Million
• City of Greeley	\$ 27 Million
• Private Owners (Res & Business)	<u>\$808 Million</u>
• Total Projected Royalties	\$900.1 Million

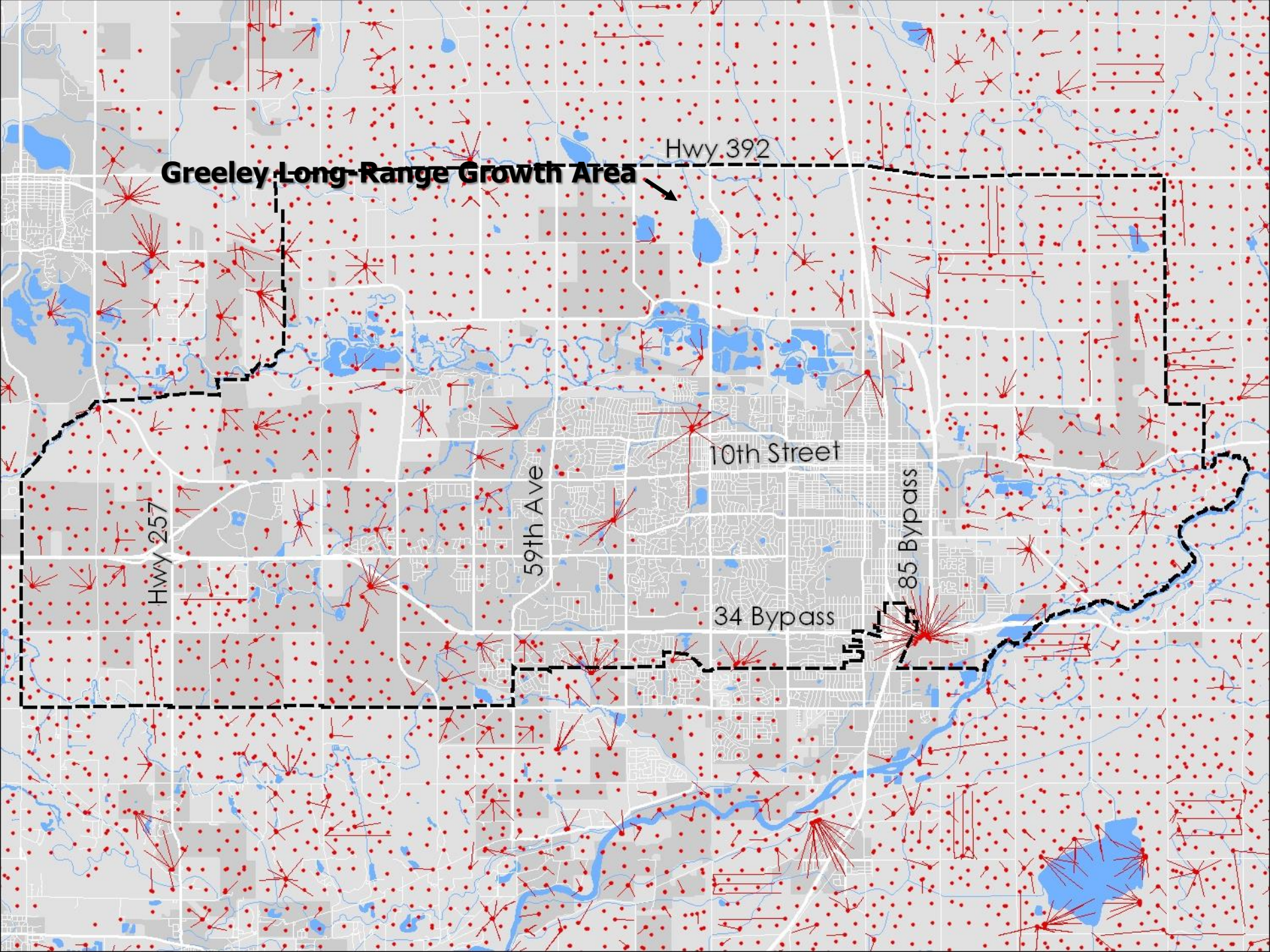
Taxes (Lifetime – approximately 20-25 years)

• Sales Tax (Greeley)	\$ 11.25 Million
• Sales Tax (State of Colorado)	\$ 9.06 Million
• Ad valorem Tax (on minerals)	\$360 Million
• Severance Tax (State collected/distributed)	\$ 45 Million
• Conservation Tax (COGCC collected)	<u>\$ 4.2 Million</u>
• Total Projected Taxes	\$429.5 Million

Employment/Jobs

- Primary Industry Jobs: 300



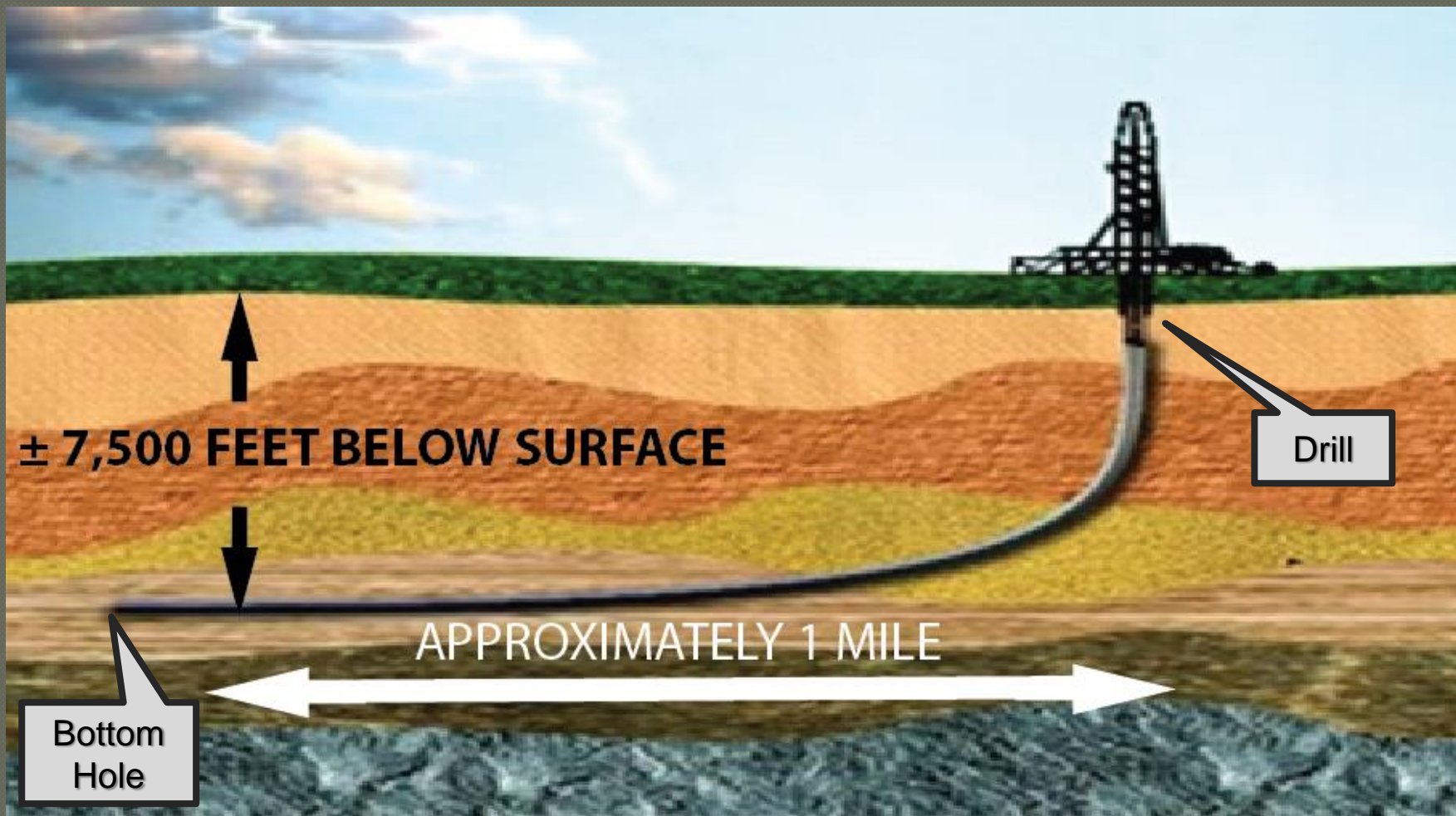


Drilling

How does oil and gas mineral extraction take place?

- Overview at

<http://www.northernoil.com/drilling-video>



Context

● Land use process

- Trained for all types of land use scenarios
- Regulations start with the general, go to specific
- Zoning, subdivision, site planning

● Public education process

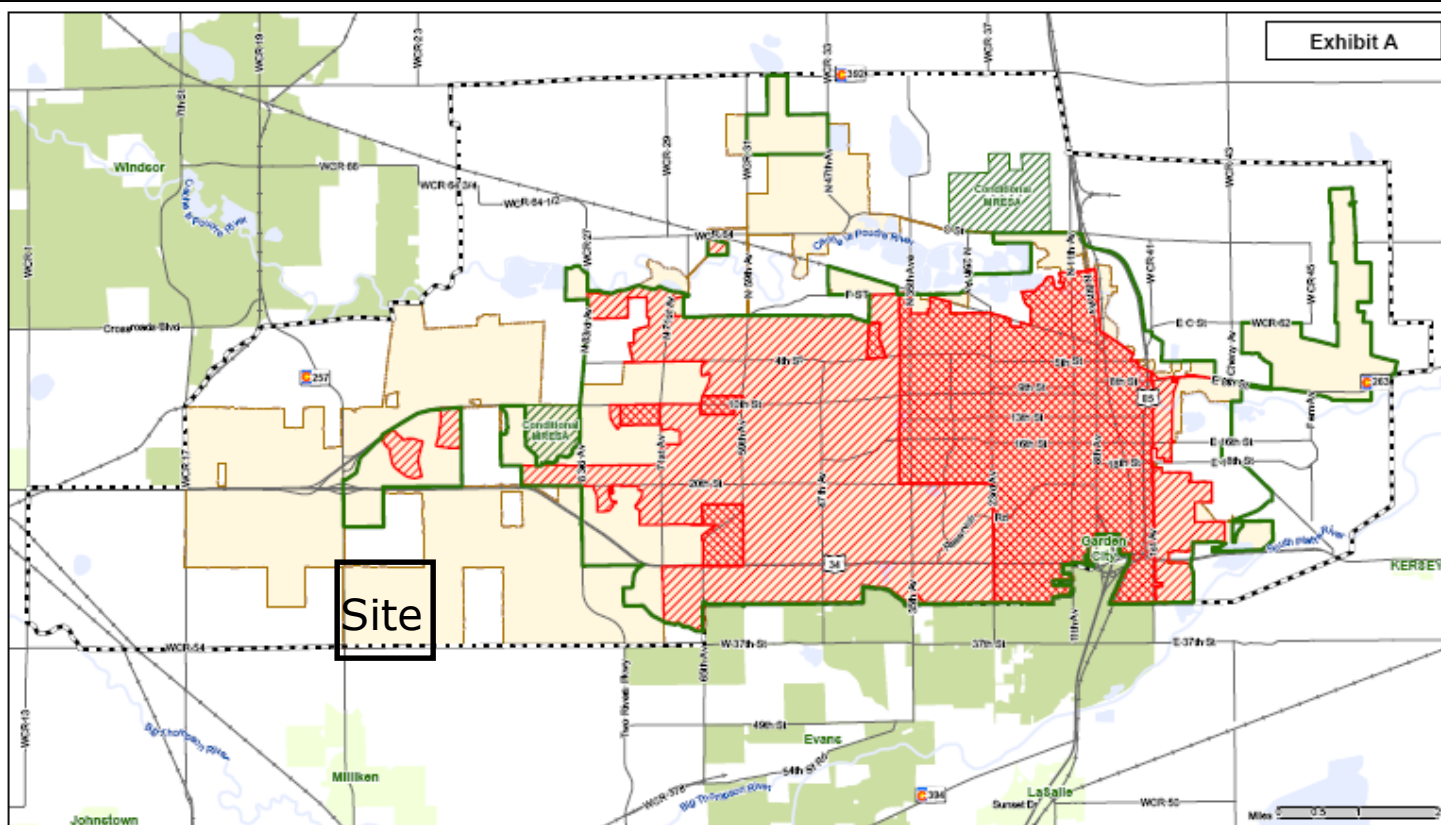
- Oil and gas mineral extraction process
 - Resource page on website
 - www.greeleygov.com/oilandgas

Jurisdictional Considerations

- Mineral extraction is exercising a private property right
- Mineral rights may or may not be severed from the surface property right
- Operations are regulated by the state
- Basic land & surface regulation is relegated to local government
- Handled in context of broader land use controls

Exhibit A

2008 Composite Service Area
Municipal Service Suitability Area (MSSA)



Created March 13th 2008
By Planning GIS



Long Range Expected Growth Area (LREGA)

Area within which community growth is expected for the next 20+ years and which encompasses all other growth and service areas.



Midrange Expected Service Area (MRESA)

Area with which adequate public facilities will be available with anticipated growth and implementation of a 5 year Capital Improvements Program.

Municipal Service Suitability Area (MSSA)



MSSA Full Service

Full range of municipal service currently available in this area as of January 2008.



MSSA Civic Improvement Area

Full range of adequate public services available at time of installation.

City Limits

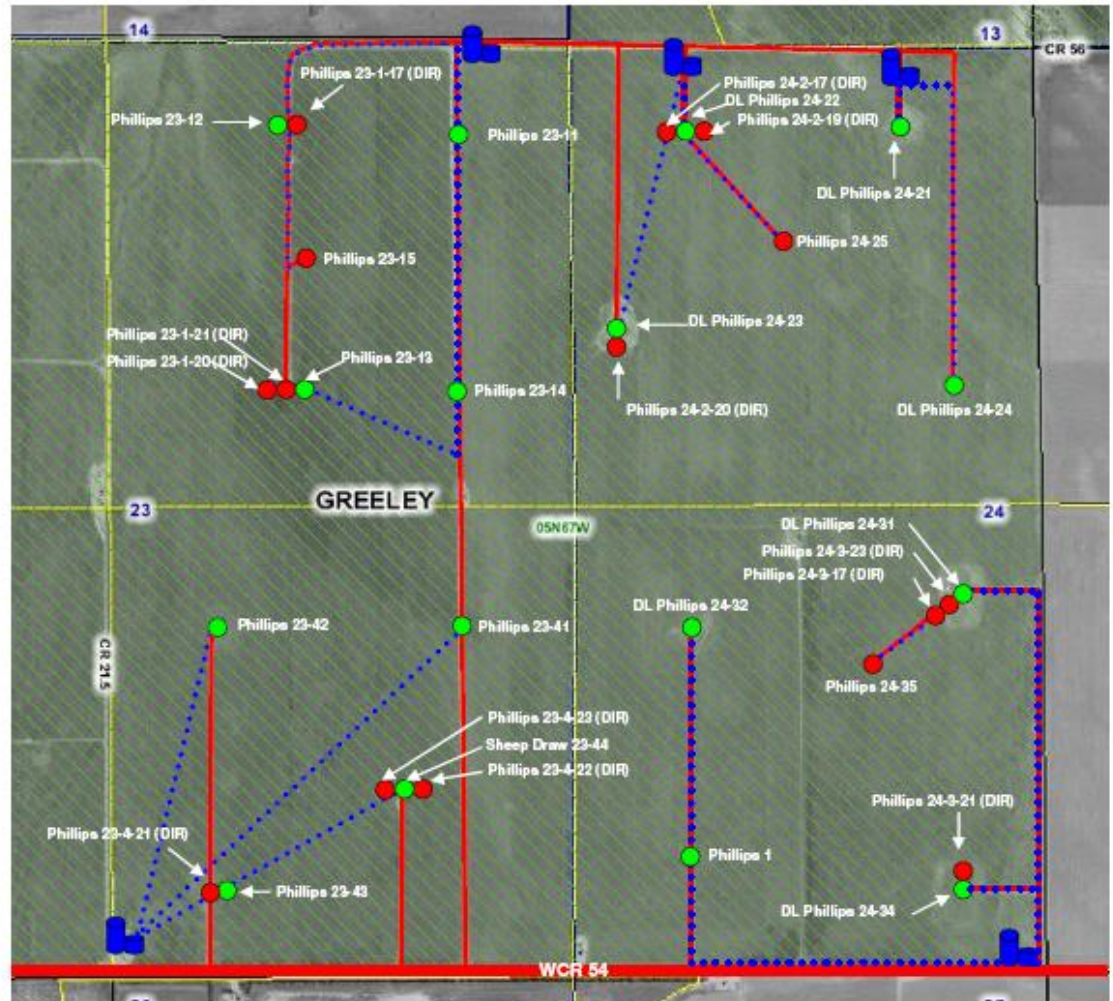



Greeley

Other Municipalities

Note:
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Considerations during the early site planning process

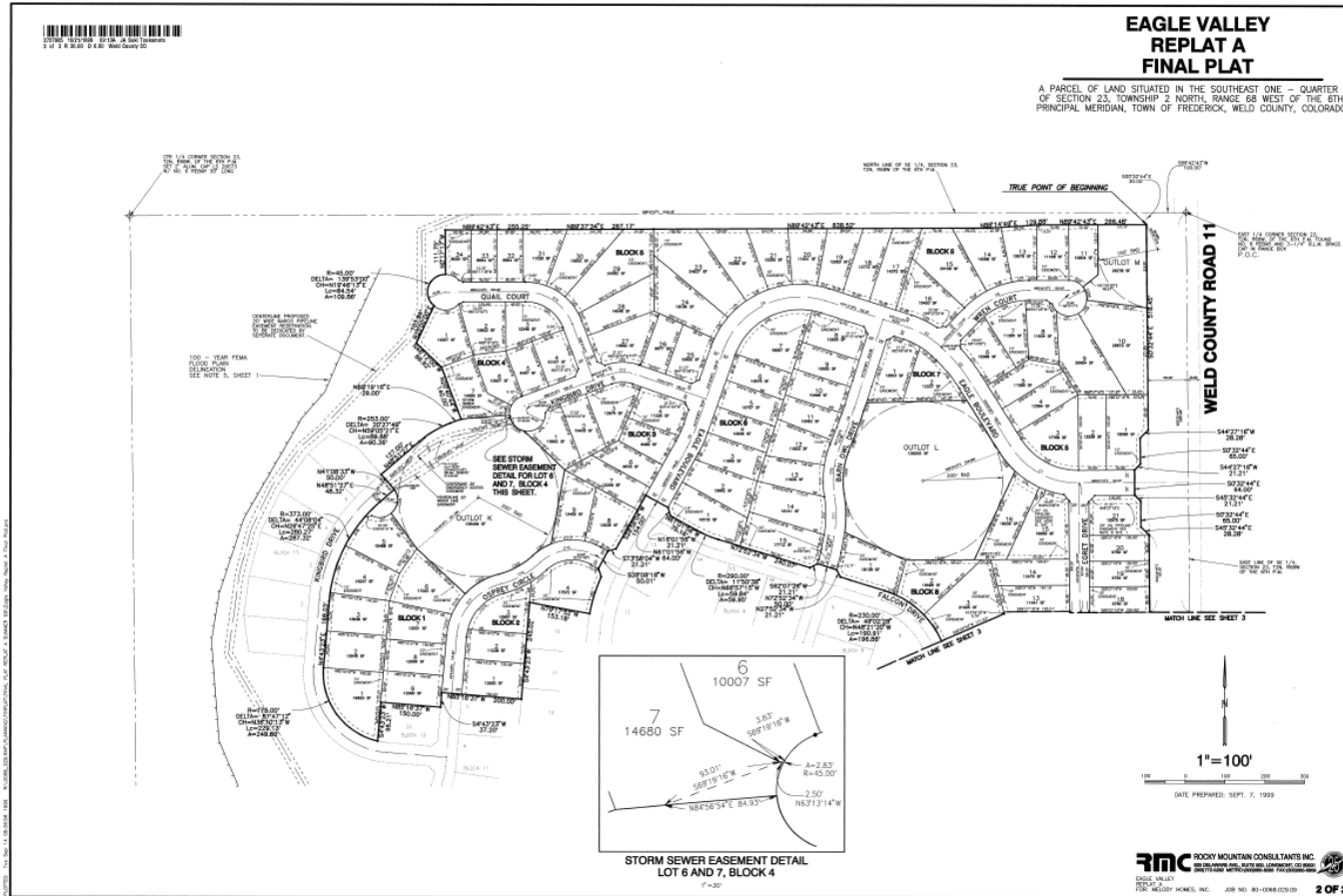


Access Road	
Flow Line	
Tank Battery	
Existing Well	
Proposed Well	

Site Considerations

- ◉ Colorado law sets rules for downhole spacing of wells
- ◉ Surface locations are different if drilling comes before vs. after surface development
- ◉ Spacing can change with a mutual Surface Use Agreement
- ◉ If drilling (or potential drilling) comes BEFORE development, then
 - Subdivision plats accommodate drilling windows (or Surface Use Agreement)
 - Or, if no objection from mineral owners, plat as desired

Example of a subdivision plat designed around oil/gas well locations (example is not in Greeley)



Site Considerations

- Notice must be provided to mineral owners at least 30 days prior to platting/surface development decisions (i.e., zoning, preliminary plan, USR)
- Key addition to state law to ensure mineral owners are notified of surface plans

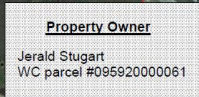
Site Considerations

- If drilling comes AFTER surface development in the area, then
 - Drilling facility must meet 500' setback (set by the State), OR per variance criteria set by State statutes
 - Some other setback might be allowed by local regulations

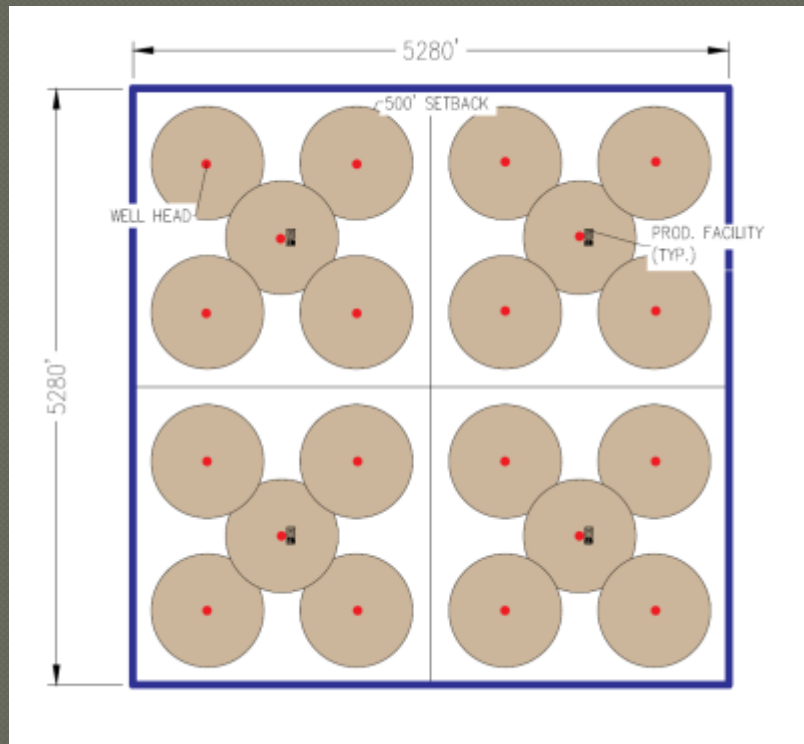
Site Considerations

● Greeley oil & gas setbacks

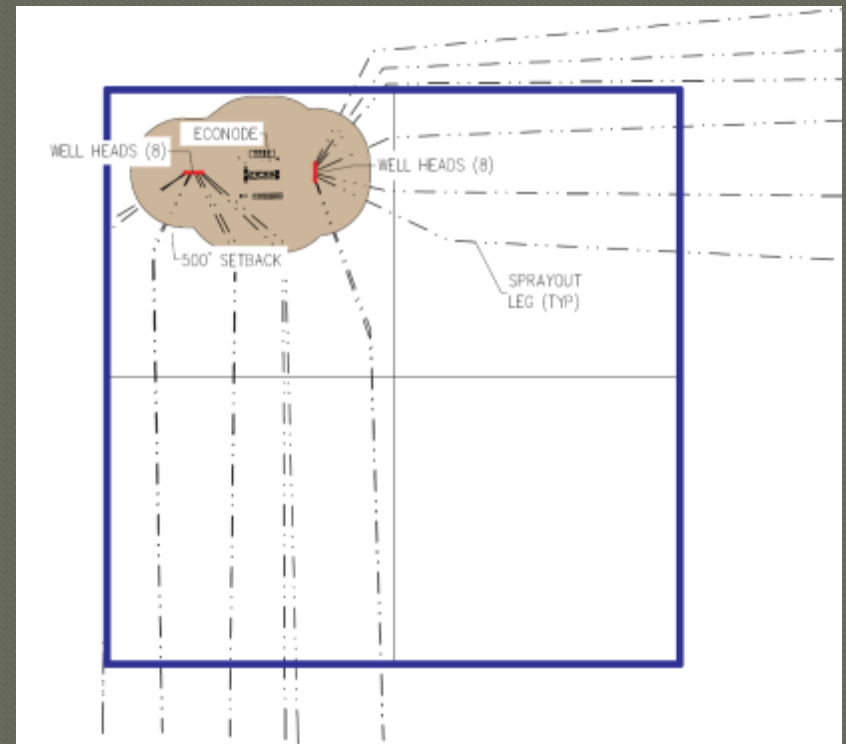
- 150' from roads, trails, railroads, and “low-density areas”
- 200' from occupied buildings (“high-density”)
- 350' from educational, hospital, etc. (“high-density”)
- Option for less (blast wall, etc.)



Vertical vs. directional in a section of land



**Vertical
Wells**



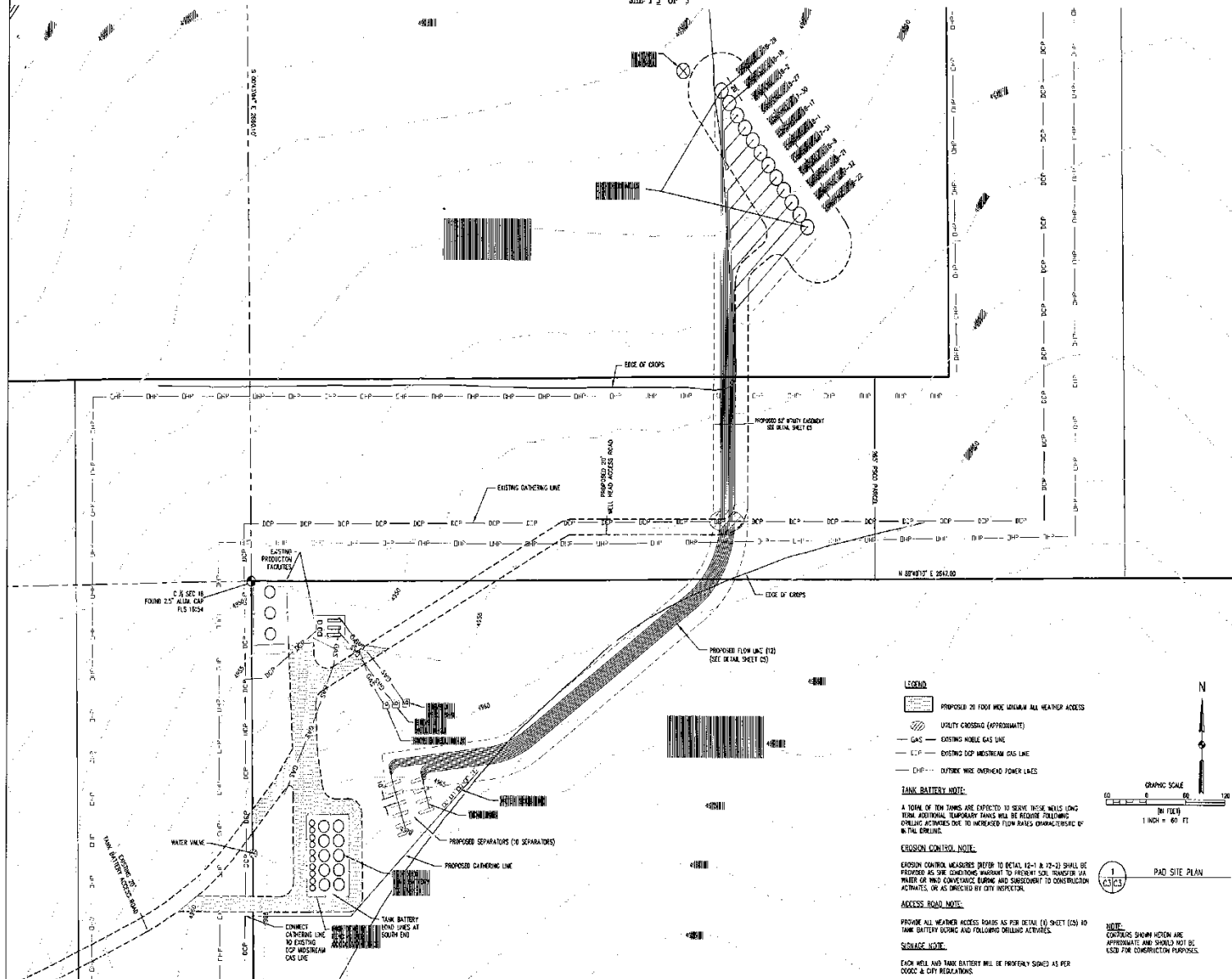
**Directional
Wells**

Site Considerations

- COGCC setback to 500' on August 1
- Other COGCC considerations:
 - Mitigation of impacts
 - Downhole monitoring
 - Coordination with state/fed (water/air)
 - Surface monitoring (drill setup, noise)
 - Chemical tracking/records management

LUNDVALL WELLS USR SITE PLAN

AN OIL AND GAS PRODUCTION FACILITY
IN THE NORTH EAST 1/4 OF SECTION 18, TOWNSHIP 5 NORTH, RANGE 66 WEST, 6TH P.M.
SHEET 12 OF 15



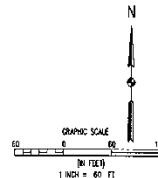
- LEGEND**
- PROPOSED 20 FOOT WIDE UNPAVED ALL WEATHER ACCESS
 - UTILITY CROSSING (APPROXIMATE)
 - GAS - EXISTING MOBILE GAS LINE
 - OIL - EXISTING ODP MIDSTREAM GAS LINE
 - WATER - EXISTING WIDE OVERHEAD POWER LINES

TANK BATTERY NOTE:
A TOTAL OF TEN TANKS ARE EXPECTED TO SERVE THESE WELLS LONG TERM. ADDITIONAL TEMPORARY TANKS WILL BE REQUIRED FOLLOWING DRILLING ACTIVITIES DUE TO INCREASED FLOW RATES CHARACTERISTIC OF INITIAL DRILLING.

CROSS-SECTION NOTE:
EROSION CONTROL MEASURES REFER TO DETAIL 12-1 & 12-2 SHALL BE PROVIDED AS SITE CONDITIONS WARRANT TO PREVENT SOIL TRANSFER VIA WATER OR WIND CONVERGENCE DURING AND SUBSEQUENT TO CONSTRUCTION ACTIVITIES, OR AS DIRECTED BY CITY INSPECTOR.

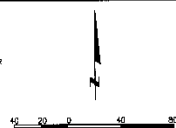
ACCESS ROAD NOTE:
PRIVATE ALL WEATHER ACCESS ROADS AS PER DETAIL 12-1 (SHEET 12) SHALL BE MAINTAINED DURING AND FOLLOWING DRILLING ACTIVITIES.

SCHEDULE NOTE:
EACH WELL AND TANK BATTERY WILL BE PROPERLY SIGNED AS PER ODOT & CITY REQUIREMENTS.



1
2312 PAD SITE PLAN

NOBLE ENERGY LUNDVALL WELLS USR SECTION 18, T-5-N, R-66-W, THE 6TH P.M. PAD SITE PLAN		REVIEWED BY: BASELINE DATE: 2/20/20 PREPARED BY: R. EDGING DATE: 2/20/20
CITY OF GREELEY FIELD COUNTY NOBLE ENERGY	REVIEWED BY: BASELINE DATE: 2/20/20 PREPARED BY: R. EDGING DATE: 2/20/20	REVIEWED BY: BASELINE DATE: 2/20/20 PREPARED BY: R. EDGING DATE: 2/20/20
SHEET 12 OF 15		



DESCRIPTION	BUFFER TYPE	LANDSCAPING INSE STANDARD	BUFFER WIDTH	BUFFER LENGTH	PLANT MULTIPLIER	LANDSCAPING REQUIRED	LANDSCAPING PROVIDED**
WEST PROPERTY LINE (ALONG 11TH AVENUE)	BUFFER TYPE C	3 SHADY TREES 2 ORNAMENTAL TREES/TYPE 3 SHRUBS 3 DECIDUOUS TREES 6 TYPE 2 SHRUBS 0 TYPE 1 SHRUBS	40 FEET	350 FEET	0.60	1 SHADY TREES 5 ORNAMENTAL TREES/TYPE 1 SHRUBS 7 DECIDUOUS TREES 1 TYPE 2 SHRUBS 0 TYPE 1 SHRUBS	0 SHADY TREES 5 ORNAMENTAL TREES/TYPE 1 SHR 2 DECIDUOUS TREES 1 TYPE 2 SHRUBS 19 TYPE 1 SHRUBS

*MEETS THE SCREENING INTENT OF THE REQUIRED BUFFER VAR

PLANT CODE. SEE SCHEDULE
FOR GENUS-SPECIES AND QUANTITYPLANT CODE, SEE SCHEDULE
FOR GENUS-SPECIES AND QUANTITY

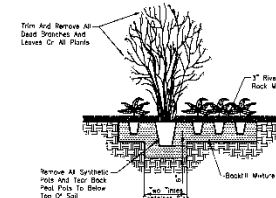
SEE SEEDING NOTES

CODE	SPECIES	COMMON NAME	SIZE	QUANTITY
DECEASED TREES				
PI	PINUS MUGHA	AUSTRIAN PINE	6'	13
RP	PIEDRA PRAVENS	COLORADO SPRUCE	6'	10
DECEASED TREES				
CR	CRUICANUS AMBIGUA	CRUICANUS NANTHORN	1-1/2' CALIPER	5
DECEASED SHRUBS				
JU	JUNIPERUS SABINA	BROADWOOR JUNIFER	5 GALLON	19
DECEASED SHRUBS				
PS	PRUNUS BESSEN	SAND CHERRY	5 GALLON	13

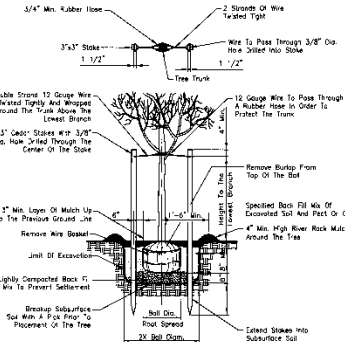
1. ALL LANDSCAPING WILL BE HAND IRRIGATED FOR 2 YEARS OR UNTIL LANDSCAPING BECOMES ESTABLISHED.
2. NO PLANT MATERIAL, WITH MATURE GROWTH GREATER THAN THREE (3) FEET IN HEIGHT SHALL BE PLANTED WITHIN POTABLE WATER, SANITARY SEWER, OR NON-POTABLE IRRIGATION EXISTENCES.
3. NO 5/8" DBS SHALL BE PLANTED WITHIN FIVE (5) FEET OR TREES WITHIN TEN (10) FEET OF POTABLE AND NON-POTABLE WATER METERS, FIRE HYDRANTS, SANITARY SEWER MANHOLES, POTABLE WATER, SANITARY SEWER, AND NON POTABLE IRRIGATION MAINS AND SERVICES.
4. TREES SHALL BE BALLED AND BURLAPPED.

1. NATIVE SEEDING SHALL BE "LOW GROW MIX" AS SPECIFIED IN TABLE 14.1.3.D(1) OF SECTION "4 VEGETATION AND IRRIGATION" IN THE CITY OF GREELEY'S STORM DRAINAGE CRITERIA AND

• VEGETATION AND IRRIGATION IN THE CITY OF WHEELER'S STORM DRAINAGE SYSTEM AND CONSTRUCTION SPECIFICATIONS



No Scale



No Scale

Evergreens Shall Be Staked With One-Blended Plastic Or Sufficient

[illegible]

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Fort Collins, CO 80525 970.226.0879 | F
www.ipa-inc.com

**LAMP RYNEARSON
& ASSOCIATES**

MINERAL RESOURCES, INC.
GREELEY, COLORADO

USE BY SPECIAL REVIEW
ISLAND GROVE DIRECTIONAL PROJECT
LANDSCAPE PLAN

job number-task
0210007.00
book page
date 4/21/2011
sheet 1 of 1

Development Code Criteria

- Chapter 18.56, Oil & Gas Operations
- USR §18.20.070
 - Comp Plan
 - Compatible with surrounding land uses
 - Site physically suitable
 - Traffic flow/parking
 - Cumulative effect of USRs in area

Typical Equipment



Typical
Tanks



Typical
Separators



Typical
Wellheads



Low profile tanks, landscaping



Standard tanks, industrial setting, battery of tanks & separators on group directional drill installation

Land Use Considerations

- Effects & opportunities from directional / horizontal
- “Leap-frog” concerns
 - Doubling setbacks (4.5 ac → 18 ac)
 - Conceptually, if no development within 500' of existing wells, 1/3 of future would be unbuildable

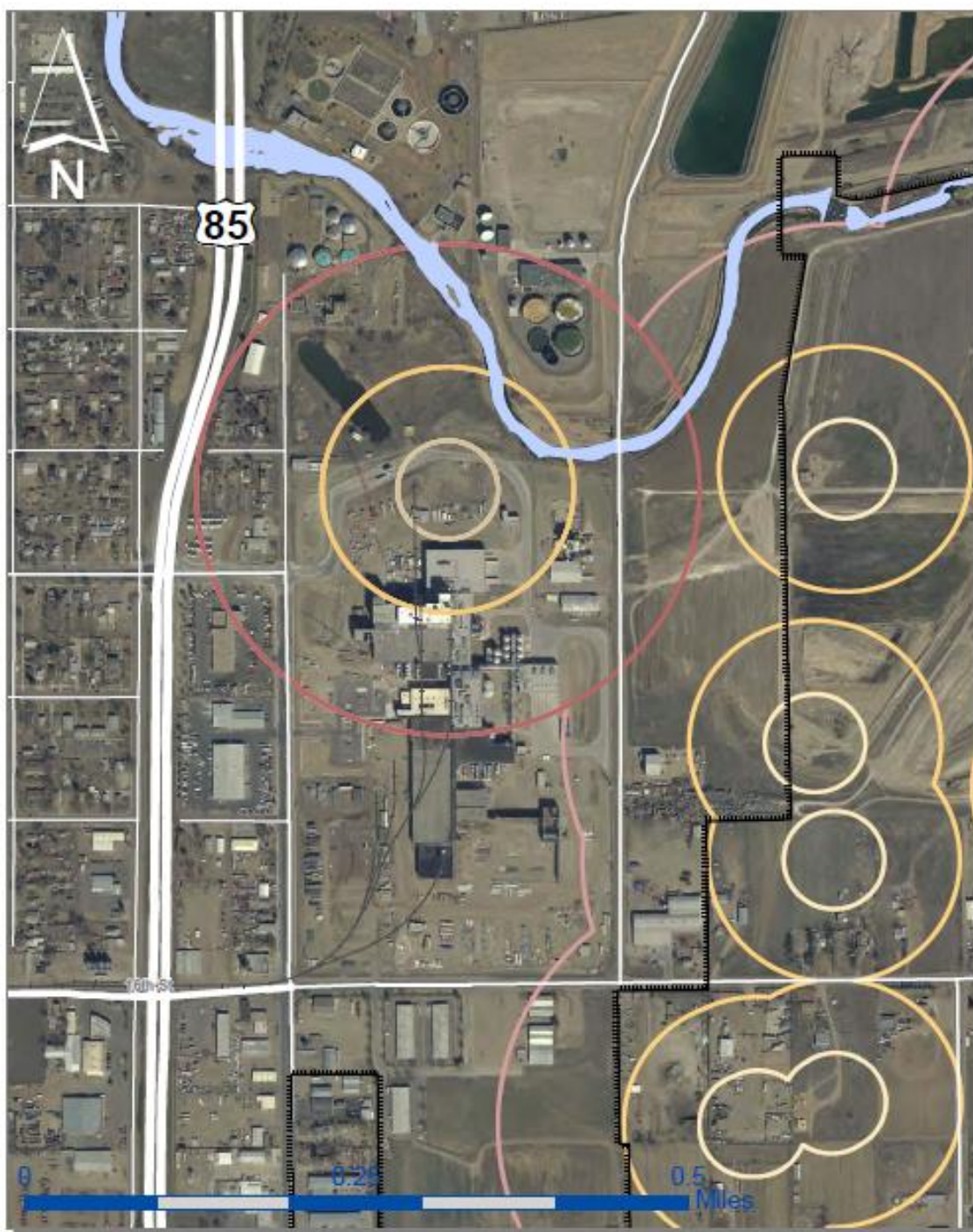


ORIGIN - Property Information Map

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Printed: Feb 29, 2012





LEPRINO IMPACT

Legend



Notes: Buffer areas are shown for every active well within the Long Range Expected Growth Area adopted by the City of Greeley. Active wells are those with COGCC status codes for permitted, drilling, shut-in, injecting, and producing.



Notes:
All planimetric data was digitized from aerial photographs dated 1987, 1992, 1995, 2000, 2005, and 2008. Updates are continual and data representations will change over time. This product is not necessarily accurate to engineering or surveying standards but does meet National Mapping Accuracy Standards (NMAAS). The information contained within this document is not intended to be used for the preparation of construction documents.

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350' Exception Zone



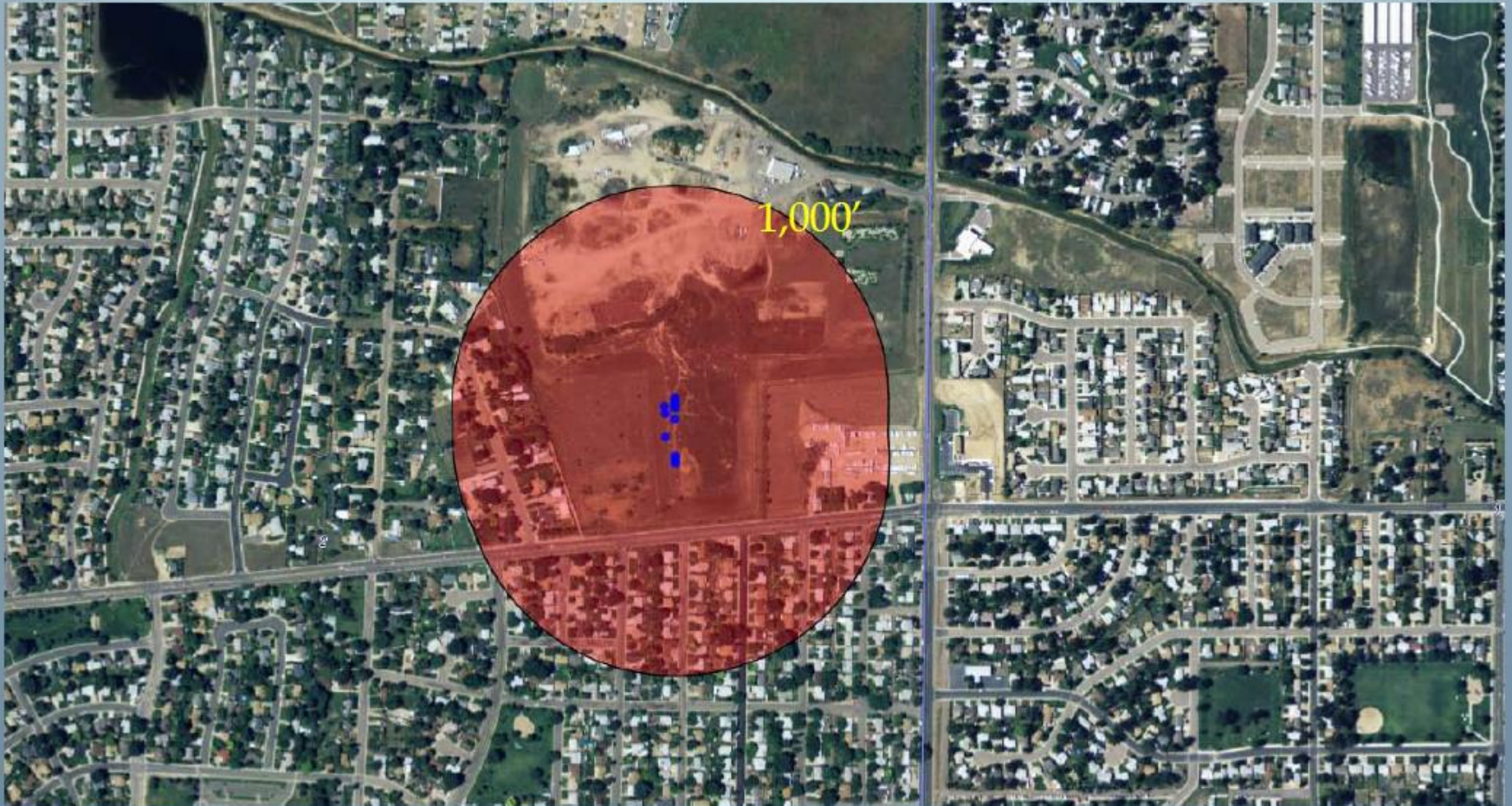
OIL & GAS CONSERVATION COMMISSION

500' Zone



OIL & GAS CONSERVATION COMMISSION

1,000' Zone



OIL & GAS CONSERVATION COMMISSION

Theoretical land use impacts

DATA SPECIFICS

Buffer Impact Area for active** well locations within the Greeley City limits

Buffer Distance	Acres	Sq. Mi.	% of City (47.25 sq. mi.)
Existing City (200')	828	1.3	2.7%
Proposed COGCC (500')	4,738	7.4	15.7%
Proposed COGCC (1000')	11,668	18.2	38.6%

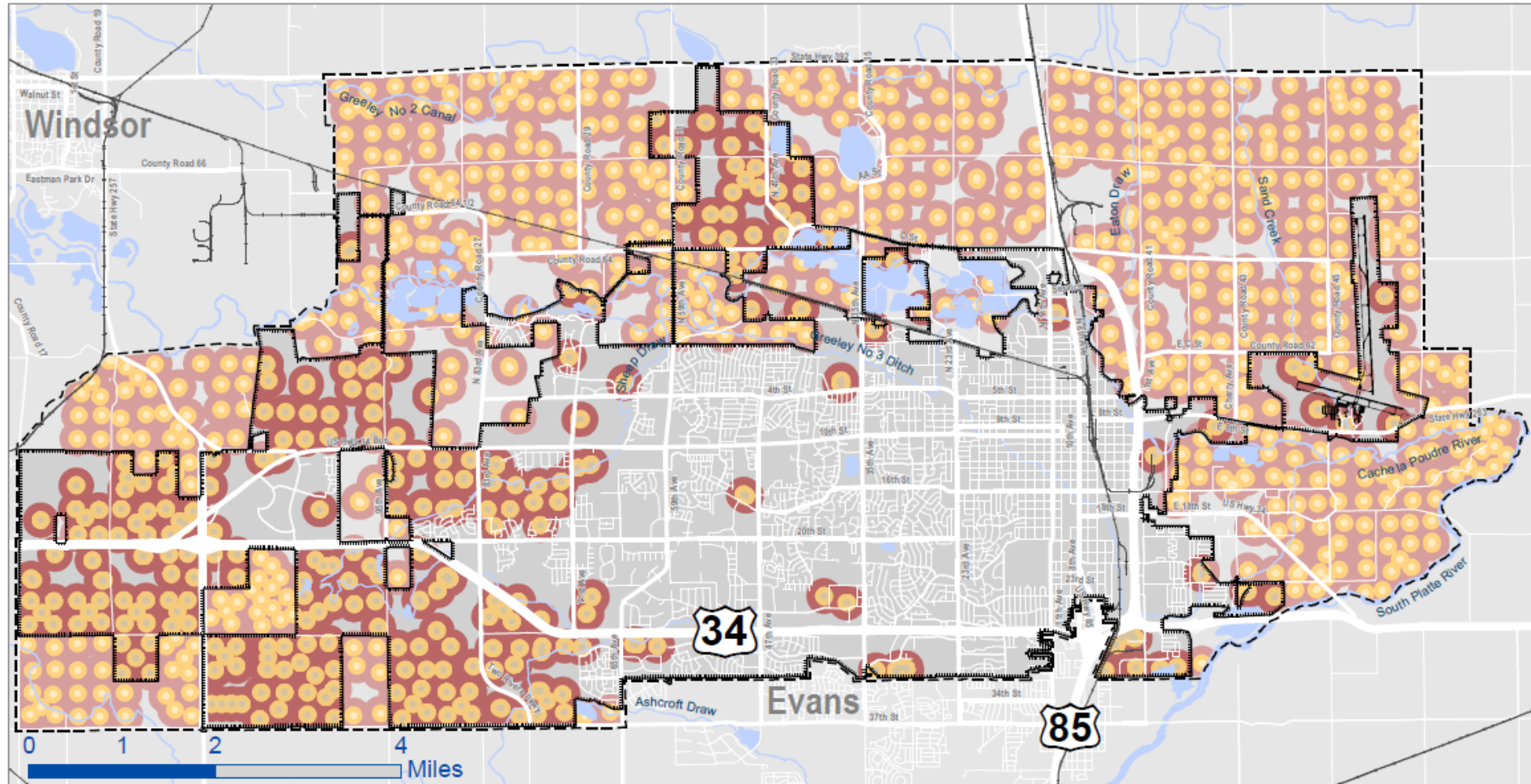
* Active wells are those with status codes for permitted, drilling, shut-in, and producing

** See attached map for visual representation

- Buffer Impact Area for active** well locations within the Greeley Future Growth Area – i.e., the Long Range Expected Growth Area (includes existing built City limits)

Buffer Distance	Acres	Sq. Mi.	% of LREGA (91.1 sq. mi.)
Existing City (200')	2,540	4.0	4.4%
Proposed COGCC (500')	14,923	23.3	25.6%
Proposed COGCC (1000')	36,157	56.5	62.0%

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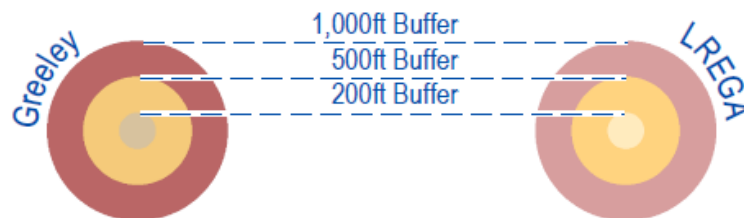


OIL & GAS BUFFER IMPACT

Legend



Created: 1/7/2013 By: Planning, GIS



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Common Questions

- Fracking impact on water quality
- Quantity of water used in fracking
- Disposal of fracking waste water
- Composition/environmental aspects of drilling fluids
- Forced 'pooling' arrangements
- Noise, traffic, air quality for adjacent properties
- Sub-surface degradation/impact on surface uses

Greeley – State MOU

- ◉ Memorandum of Understanding is a statement of intent
- ◉ Both parties acknowledge each others' role (*read: jurisdiction*) in regard to matters of joint interest (*read: regulation of oil/gas*)
- ◉ Level of State deferral

City Interest

- ◉ Local control on matters that are not state interest
 - Colorado Supreme Court ruling in 1992
 - Traditional function of local land use control
- ◉ Matters of State interest vs. matters of local
 - Not always easy to discern
 - A matter of administration
 - Working with mutual understanding & trust (through an MOU) creates better outcome

MOU Clauses

- ◉ Commitment to communication & coordination
- ◉ Recognize respective authorities
 - Of city: local land use code, including design & development standards
 - “Harmonize” such regulations
 - COGCC will defer to City, where existing plans

Other considerations?

- Staff research
- No conclusions
- Outreach plans for 2014
 - City Manager work program: Convene a Community Dialogue Regarding Oil and Gas Land Use

Brad Mueller

Director, Community Development Dept.

City of Greeley

brad.mueller@greeleygov.com

970-350-9786

Questions?

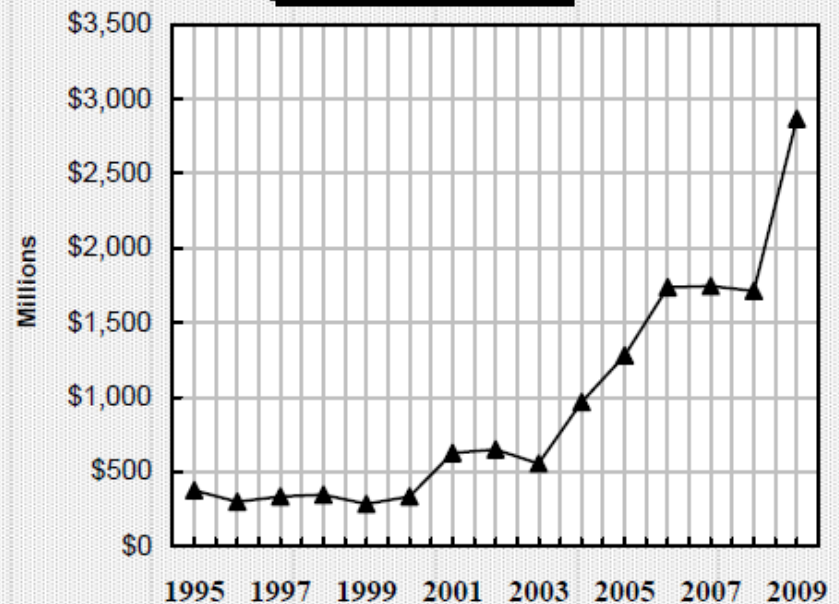


Weld County Oil and Gas Taxes

OIL AND GAS

<u>Years</u>	<u>Value</u>	<u>Change</u>
1995	\$375,435,010	
1996	\$297,691,990	-20.7%
1997	\$334,221,680	12.3%
1998	\$345,162,450	3.3%
1999	\$283,818,260	-17.8%
2000	\$334,270,140	17.8%
2001	\$624,037,760	86.7%
2002	\$649,020,570	4.0%
2003	\$553,638,730	-14.7%
2004	\$967,273,770	74.7%
2005	\$1,279,812,120	32.3%
2006	\$1,736,199,450	35.7%
2007	\$1,744,572,440	0.5%
2008	\$1,710,307,180	-2.0%
2009	\$2,868,050,190	67.7%

OIL AND GAS



Assessed Valuation

Tax Receipts