

GAS DRILLING PROGRAM REPORT

2010

Planning and Zoning Commission



Produced by the Community Development
and Planning Department

Written by:

Darren Groth, Gas Well Coordinator

Contributions from:

Maria Carbajal, Planning Manager

Jim Parajon, Director

Victor Vandergriff, P&Z Chairman

5/19/2010

TABLE OF CONTENTS

STATEMENT OF COUNCIL DIRECTION.....	PAGE 3
P&Z COMMISSION DIRECTIVE.....	PAGE 3
PROCESS INPUT AND CONTEXTUAL	
INFORMATION	PAGE 4
<u>Gas Drilling Process.....</u>	PAGE 6
Notifications.....	PAGE 6
Setback and Petitions.....	PAGE 8
SUP Time Periods.....	PAGE 10
Platting and Site Boundaries.....	PAGE 11
<u>Gas Drilling Site Condition.....</u>	PAGE 13
Fracing.....	PAGE 13
Landscaping and Fencing.....	PAGE 16
Remediation.....	PAGE 18
<u>Gas Drilling Operations.....</u>	PAGE 20
Road Damage.....	PAGE 20
Transportation.....	PAGE 22
Bonding.....	PAGE 24
Flowback.....	PAGE 26
AREAS OF CONSIDERATION.....	PAGE 27
Compliance and Enforcement.....	PAGE 27
Noise.....	PAGE 27
APPENDIX.....	PAGE 28
Minutes from P&Z Meetings.....	PAGE 29
Town Hall Meeting Notes.....	PAGE 40
Gas Drilling City Comparison.....	PAGE 42

STATEMENT OF COUNCIL DIRECTION

The City Council directed the Planning and Zoning Commission (P&Z) to conduct a review of various aspects of the City's gas well drilling program. At the February 16, 2010 Work Session, City Council directed P&Z to review various aspects of the City's gas well program and report its findings. City Council discussed various elements during that meeting for the Commission to examine. Those elements include:

- **Process Issues:** Specific Use Permit (SUP) notifications, SUP time limits and petitions, and drill site boundary requirements;
- **Site Conditions:** Fracing, landscaping, fencing, and site remediation; and
- **Operations:** Road damage fees, transportation routing, bonding, and gas well flowback.

The P&Z met regularly since receiving Council's directive in February and held five work sessions. They accepted both public comment and industry representative input at four of those work sessions. A town hall meeting, facilitated by Council Member Capehart, also provided an opportunity for public input to assist P&Z in their review.

The P&Z will receive this report for their review during the May 19, 2010 meeting. A follow-up work session is planned for May 26, 2010 to continue the review of the report and it is anticipated that the P&Z will forward the report to the Council following the May 26 meeting.

PLANNING AND ZONING COMMISSION DIRECTIVE

Chairman Vandergriff pointed out that the City Council would be the policy maker and that the Planning and Zoning Commission would need to identify the issues for Council's consideration. He suggested a reporting format of:

- Identifying the issues in a matrix style;
- Outlining COA current practices;
- Clear comparisons to other cities for benchmarking; and
- Comments for consideration or a list of ideas and how they may interrelate.

Staff Direction

- Provide information, not a recommendation;
- Make comparisons with other areas; and
- Provide any applicable recent studies that are available.

PROCESS INPUT AND CONTEXTUAL INFORMATION

Process Input

Following City Council's direction, the Planning and Zoning Commission (P&Z) convened for three work sessions to devote time researching topics related to Arlington's gas drilling program. Gas drilling processes was the topic of the first meeting on March 24, 2010. During the next two meetings held on March 31 and April 7, 2010, staff presented topics related site conditions and site operations, respectively. The summary presentation during P&Z's April 14, 2010 work session reviewed each of these topics and allowed for further discussion. The Process Input section describes each of those weekly topics presented to P&Z in the same order addressed during the work session meetings.

In addition to the P&Z work session meetings, City Staff held four weekly meetings with various representatives from gas drilling companies currently doing business in Arlington (the Industry). The same discussion points were raised during the Industry meetings and the input staff received is also included in this report. Public comment was also incorporated into the report based on the comments received at the P&Z work sessions and the District 2 Town Hall meeting held on April 8, 2010.

Municipal input for this project was received a variety of ways as staff obtained information from local cities. Ordinance requirements were identified by thorough examination of other jurisdiction's natural gas drilling and production regulations. Staff reviewed the online ordinances and in some instances used the language verbatim from those ordinances. Staff followed the online research with phone calls and email messages to contact employees from the various municipalities to learn additional policy requirements and gain clarity of the ordinance stipulations. City staff also initiated gas drilling round-table discussions with employees from those municipalities to further refine the details provided in this report. The jurisdictions represented in these discussions are Arlington, Burleson, Denton, Euless, Fort Worth, Grand Prairie, Hurst, Mansfield, and Southlake. Ongoing discussions are scheduled to occur monthly.

Contextual Information

Sustained gas drilling activities in the Barnett Shale first occurred in the early 1980s. The wells were drilled vertically and were not as productive as the horizontal wells of today. As horizontal drilling technology improved, urban gas drilling increased due to this new ability to extract gas from underneath properties hundreds of feet away. The City of Arlington adopted its first Gas Drilling and Production (GDP) ordinance in 2003, Number 03-120, due to the increased interest in urban gas drilling within the city limits. Ordinance 05-113 was passed on December 20, 2005 and revised the existing gas drilling ordinance. The revision was intended to address more urban concerns with gas drilling because prior to that date most activity occurred in sparsely populated rural communities. It was not until March 3, 2006 that the City received its first gas well permit application. The first permit was issued in June 2006 and horizontal drilling officially began in Arlington on July 18, 2006 when the MITX 1H well was spud.

Only seven gas well permit applications on three different sites were submitted in 2006, but the City quickly discovered the need to once again revise the GDP ordinance. The number of permit applications was projected to surpass initial expectations and the existing ordinance did not include many of the externalities associated with drilling, i.e, on-site appurtenances, pipelines, compressor stations, mud tanks, and similar secondary concerns. As a result, the drafting process for another ordinance revision began in June, 2006 and Ordinance 07-074 was finally adopted on October 23, 2007.

Ordinance 07-074, as amended, is the current regulation for gas drilling in Arlington. The latest amendment to the GDP ordinance occurred in January 2010 (Ordinance Number 10-012) to state archived documents will be in electronic format. The number of gas well permit applications grew from 7 in 2006, 40 in 2007, 55 in 2008, 68 in 2009 and 52 in 2010 through four months; however, other than minor revisions, the ordinance has not changed from 2007. The new industry in Arlington did not bring inherent knowledge and required city leaders and staff to learn about the drilling process. Initial presentations by the oil and gas industry classified this activity as a temporary use that would not produce long-term impacts.

With a temporary classification, land development concerns were generally not required until a later date associated with completion of the final gas well on the site. Technological advances in the drilling process, knowledge gains by city staff and the general public, and understanding of some externalities associated with drilling and their concerns all contribute to the need for another examination as to whether the current GDP ordinance is adequate. This use is not temporary in nature and should evoke development requirements comparable to other industries in the city. As knowledge is gained through time and stage advancement of urban drilling, it is becoming clearer how future development near a gas well site may not be feasible until the activity is removed and the site restored.

Operators indicate a need to rework, fracture stimulate, change or replace tubing, and haul produced water off-site until a well is plugged and abandoned. These needs require adequate space to maneuver on the well site and force the operator to maintain a large enough space inside the perimeter to perform these activities. The result is a large industrial site that will undergo ongoing maintenance, well activity, and site transportation for approximately 20-30 years and may not reach the final production stage of the last well for nearly the same time period. A rise in the number of recent applications for additional wells on existing drill sites indicates how drilling may not cease for several years after the initial well is drilled. Site restoration will not occur until production levels for each well make operating the well uneconomical.

With site restoration activities occurring decades in the future, land use patterns will be required to develop around the existing drill sites. Easements, rights-of-way, and future development must all be considered when assessing a proposed gas well site because the typical life span of a site may exceed the scope of a municipal Comprehensive Plan. As a result of each concern mentioned above, the City Council directed P&Z to review the City's gas well drilling program and make recommendations for the long term success of Arlington.

Gas Drilling Process

Several topics were presented for discussion during the first P&Z work session meeting. City of Arlington staff members identified what the City's current process is and proposed changes to strengthen those processes. The next few paragraphs further detail each process topic and includes how other municipalities address these concerns, industry comments related to each topic, public input received from Arlington citizens, and recommended considerations.

1. Notifications

The City of Arlington requires two stages for issuing a gas well permit. The first stage requires operators to obtain the appropriate zoning for gas drilling use and the second stage is the permitting application, review, and issuance. Since adoption of Ordinance 07-071 in October 2007, appropriate zoning is defined as a Specific Use Permit (SUP) for gas drilling use. Property owner notifications (PONs) for the SUP stage are mailed in accordance with Chapter 211 of the Texas Local Government Code (LGC). The Texas LGC stipulates that:

"Before the 10th day before the hearing date, written notice of each public hearing before the zoning commission on a proposed change in a zoning classification shall be sent to each owner, as indicated by the most recently approved municipal tax roll, of real property within 200 feet of the property on which the change in classification is proposed."

Adhering to the rules in the Texas LGC, the City mails PONs to property owners within 200 feet of a requested SUP's boundary.

The second stage also requires the City to mail PONs to adjacent property owners. The Gas Drilling and Production Ordinance states each surface property owner within 600 feet of the proposed well site shall receive notice. The increased distance informs more citizens of the proposal and allows increased public participation. The differing PON distances for the zoning and permitting stages informs dissimilar neighboring groups of the various activities. As a result, citizens attending a public hearing for the second stage to provide input may miss the first public hearing for the zoning stage and witness a permit application for an already approved drill site.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Property Owner Notifications
Fort Worth	1000 ft, multiple wells; none for subsequent wells
Grand Prairie	1,000 ft of proposed well
Mansfield	600 ft of proposed well

Industry Comment

Increase the SUP notification distance to 600 feet. Distance should be measured from the zoning [SUP] legal description provided. If protected uses are affected by a site, 60% waivers must be obtained during the SUP stage. Waiver distance should be measured from the well zone. The waivers should run with the lot, parcel, or tract for the life of the pad site. The waivers would no longer be needed when applying for a gas well permit. If waivers are required at the SUP stage, they will not be required at the permit stage.

Public Input

Require notifications to at least 1,000 feet for each stage. Setback reduction letters and support petitions should be signed without monetary payment. Do not allow setback reductions to less than 600 feet—adhere to the ordinance prescribed 600-foot standard.

P&Z's Consideration

The increased permit notification distance suggested by staff is supported by input received from both the Industry and the public. The concurring opinions suggest enlarging the notification distance to 600 feet. Staff recommends a consistent notification distance set at 600 feet for both the zoning and permitting stages. The distance should continue to be measured from the boundary of the site identified by legal description submitted during the zoning stage.

DRAFT

2. Setbacks and Petitions

During the SUP process, a Petition of Opposition for the zoning change may be submitted for properties within a 200 foot distance. If property owners representing 20 percent or more of the acreage in that area submit a letter of opposition to the zoning change, a super majority vote by the City Council is required to approve that SUP. If a setback reduction is requested by an applicant during the Gas Well permit process, all property owners within a 600-foot radius must be contacted by the drill site operator and at least 60 percent of those within that radius must support a reduction for the gas well case to be forwarded to City Council for action. If the Petitions of Support do not represent 60 percent of the property owners, a super-majority (7 member) vote by City Council is required to approve the Gas Well Permit. The proposed change would require the setback reduction requests to be submitted during the SUP stage and would adhere to current conditions and measurements. The PON distance would be increased to 600 feet and the setback reduction requests processed during the SUP stage.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Setback Distances
Fort Worth	600 feet from protected uses, Council can reduce to 300
Grand Prairie	500 feet from protected uses, Council can reduce to 300
Mansfield	600 feet to subdivision unless all owners consent; 600 feet to un-platted residential, public building, institution, school, day care or commercial building unless all owners consent; and 1000 feet to hospital, nursing home or Law Enforcement Center

Industry Comment

If protected uses are affected by a site, 60 percent waivers must be obtained during the SUP stage. Waiver distance should be measured from the identified 'well zone' area.

Public Input

Public comment was accepted as testimony at the work sessions, via email, and during the April 8, 2010 District 2 Town Hall meeting. The comments related to setback distances and the City of Arlington's petition processes are listed below.

- Petitions to reduction the 600-foot setback distance should include a prohibition that does not allow gas well companies paying for signatures.
- Increase the percentage of property owners required to support a setback reduction from 60 percent of owners to somewhere between 75-100 percent.
- Setbacks should be measured from the pad site not the well bore.
- Many individuals attending the Town Hall meeting wanted the gas well setback to be at least 600 feet from houses, possibly 1,000 feet.
- Citizens seem to agree 300 feet is too little.
- Do not allow setback reductions; adhere to the 600-foot standard.

P&Z's Consideration

Processing setback reductions during the zoning stage would more accurately reflect future drilling plans on each pad site. The applicant would be required to identify a drilling zone and all drilling must take place within the identified area. Any planned wellbore outside the identified drilling zone will require an SUP amendment. The setback distances will be measured from the boundary of the drilling zone and property owner support for the reduction during the zoning stage will apply to the site. Once a setback distance is reduced, each permit will not undergo another setback reduction.

As stated above, the current process allows reduced setback distances below 600 feet. The intent of the current ordinance was to increase the setback distance from 300 feet to 600 feet. Setback reductions were allowed to no less than 300 feet, however, in those instances where an appropriate location could not meet the 600-foot stipulation. The reduction allowance enabled already identified sites to move forward after the ordinance revision and also provided a way to still allow a drill site in the event a proposed well did not meet the protected use setback distance on the same property owner's land. Initial City permit applications were predominately submitted for drill sites in rural settings. The setback distance reduction process and 60 percent support threshold were both instituted under the presumption two of three rural property owners could support a lesser distance without requiring 100 percent consent.

The initial setback reduction allowance was not intended for urban settings nor written to impact a vast multitude of property owners for each proposed drill site. As a result, another consideration is whether additional setback reduction parameters are necessary for urban gas wells. Should rental properties be considered equally if the property owner's support does not accurately reflect his or her level of drilling impact? In addition, should commercial properties be included in the calculation of property owners or only properties identified as a protected use?

3. SUP Time Periods

Currently Gas Drilling use SUPs expire one year after the date of City Council approval unless a gas well permit is issued and drilling commenced. One extension of not more than one year from the date of expiration may be administratively granted by the director of the Community Development and Planning Department upon written request showing good cause for an extension. After drilling activity commences on the first well, the SUP is indefinitely valid and remains on the property as long as it is an active drill site. The proposed change would set a time limit on the SUP’s validity.

The time limit restriction provides the City an opportunity to learn site specific details regarding the drilling process to date, current and future site conditions or land plans, ordinance compliance, and well progress from the operator at an established interval. As land use patterns and neighborhood plans develop for various areas of the city, an in-depth periodic review may be necessary. The SUP time limit enables the City to review the impact to traffic and roadways; assess development and redevelopment potential; secure safety from fire, panic, and other dangers; and facilitate the adequate provision of transportation, water, sewage, schools, parks, and other public requirements.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	SUP Timing
Fort Worth	No Zoning Component
Grand Prairie	No zoning Component
Mansfield	The SUP authority to drill expires in 2 years after approval if no drilling activities have taken place, and 5 years after approval if drilling has occurred on a site. The City Council may reduce the expiration period to less than 5 years as a condition of the SUP.

Industry Comment

The SUP and first gas well permit to be approved by City Council. All other permit requests approved administratively and/or by City staff (Planning Director). Allow for an appeal process to the City Council if there are disagreements from stipulations imposed by staff. Administrative approvals will streamline the timeline in which the wells could be drilled.

Public Input

No specific time period comments were received from the public during this process.

P&Z's Consideration

After expiration, even with an active drill site, the operator would go before City Council to update the site status. Additional considerations offered were to make SUP’s valid for five years, with operators of existing sites being required to update City Council regarding on-site conditions after the five years. If a time limit is placed on the site, gas drilling can remain as an approved use; however, if operations continue past five years, the development must adhere to common infrastructure requirements, e.g., sidewalks, easements, landscaping, driveways, etc.

4. Platting and Site Boundaries

Entire property boundaries could be included in the SUP, thus helping to enforce landscaping standards and streetscape installation. Plat requirements could ensure adequate infrastructure for adjacent development, identify access easements, and promote orderly development in the City.

Drill site development currently is not required to go through a platting process. According to Section 3.01B the City's Subdivision Regulations, "the City shall issue no permits for any construction activity or allow any public improvements for a development until a plat is approved and filed of record." The need for platting ensures adequate infrastructure for development, identifies access easements for lots, and promotes orderly development in Arlington.

The SUP boundary is currently identified by a metes and bounds legal description and permits a drill site to occupy a portion of a larger property—a doughnut hole effect. The 'hole' enables drill site operators to claim adjacent zoning is similar to the drill site and the surrounding property is undeveloped. Landscape standards in the City's Zoning Ordinance are based on the site's adjacent zoning or development.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included in the following tables. The City of Denton's platting process is highlighted between the platting and boundary tables. In addition, a process comparison chart for additional Barnett Shale communities is provided in the Appendix.

City	Plat Development Requirements
Fort Worth	Platting not required; Site Plan submitted with permit application.
Grand Prairie	Platting not required; Site Plan submitted with permit application.
Mansfield	Site plan, landscape and irrigation plans, vehicular routing plan, pipeline routing map, grading and utility plans required with SUP and gas well application. Special requirements such as right-of-way dedication or utility easements usually determined at time of SUP

In the City of Denton, "Any person who proposes drilling and gas production of natural gas on a tract of land located within the corporate limits or within Division 1 of the City's Extraterritorial Jurisdiction, and is not required by [the City's Development Code] to prepare a preliminary plat or final plat, shall prepare a Gas Well Development Plat." This example shows how other municipalities already support the benefits derived from the platting process.

City	Drill Site Boundaries
Fort Worth	Defined as the area used for drilling, development and production, and all operational activities associated with gas production. At the time the operator submits an application for a single well permit, the operator may also request a Multiple Well Site Permit for drilling future wells. Site boundary must include all wells and the setback measurements shall be from the boundary line of the pad site.
Grand Prairie	Drill site means the premises used during the drilling or re-working of a well or wells located there and subsequent life of a well or wells or any associated operation.
Mansfield	Established by SUP with a metes and bounds description of each surface use (drill site, frac pond, road, etc.). The zoning boundary must include all area that is disturbed such as graded slopes.

Industry Comment

In lieu of platting, a covenant should be placed on the entire lot or tract the gas well site is located on. The covenant should be for landscaping requirements placed on a site, due to adjacent protected uses or proximity to major thoroughfares. The covenant should cease to exist upon the development, platting, or sale of the property for future development. Covenant provisions would be required on all new surface use leases dated xx/xx2010. Operator would make a good faith effort to obtain such covenants on existing surface use leases, but cannot guarantee surface owner's consent. If a surface lease or property owner does not allow the installation of landscaping on their property, allow for the operator to pay into a "tree fund". The denial of installing landscaping on a leased property must be obtained in writing, and from the current owner, or his assigned agent.

Public Input

Setbacks should be measured from the pad site not the well bore. Boundaries could follow current parcels and tracts instead of the current metes and bounds description. Direct platting input was not received during this process; however, during prior zoning or permitting cases, citizens have previously expressed concern over the potential for future development at locations occupied by a drill site.

P&Z's Consideration

An entire property included within the SUP boundary will enforce landscaping standards outside drilling pad sites and streetscaping would be installed per City Ordinance. A platting requirement would insure adequate infrastructure for development, identify access easements for future lots, promote orderly development in Arlington, and be consistent with existing Subdivision Regulations.

Gas Drilling Site Conditions

Several topics were presented for discussion during the second P&Z work session meeting. The next few paragraphs detail site condition topics and include how other municipalities address these concerns, industry comments related to each topic, public input received from Arlington citizens, and recommended considerations.

1. Fracing

Frac ponds are lined pits used to store fresh water for fracture operations. Fracing, short for fracture stimulation, is the process of injecting water, steam, or gas into a natural gas well to improve natural gas recovery. All wells in the City of Arlington to this point were fraced with water. The water used for fracing is typically provided from the municipal water supply via fire hydrants located near the drill site.

The water rate used for fracing varies per operator, but is often close to 100 barrels per minute – a barrel is 42 gallons. The municipal water supply rate from a fire hydrant, however, is typically around 1,000 gallon per minute (gpm). The entire fracing process for one well utilizes approximately four million gallons of water, or approximately 12 acre feet. An acre-foot of water is considered to be the planned annual water usage for a typical family of five. Fracing one gas well utilizes a comparable amount of water that would supply 60 citizens each year. This amount of water is typically used within 7-10 days during the fracing process.

To ensure the operator is able to frac at the rate required to break open the shale, several storage methods have been devised to hold water. The most common method to hold additional water is utilizing an on-site frac pond. The area required for a frac pond is included in the boundary of an SUP site and the size is based on the available supply rate on the municipal system. If the municipal supply provides 1,000 gpm and the fracing need is 4,200 gpm, a water deficit is made up by the water storage. The size of the storage pond would increase if the municipal water supply could only provide 500 gpm because the deficit is larger and more storage is needed to equal the fracing rate.

Another water storage method is the frac tank. These tanks are hauled to the site and store water to make up the deficit caused by the limited water supply rate, similar to an on-site frac pond. In lieu of the on-site frac pond, an operator may also choose to utilize an off-site frac pond and transport the water to the drill site via above ground temporary water lines. The City recently devised a process to regulate the temporary water lines and use of this option may increase since the drill site footprint is reduced if on-site water storage is not necessary.

Different areas of concern arise for the City depending on the method used. Frac ponds are generally not aesthetically pleasing, require ongoing maintenance, and could be hazards. The frac tanks require numerous additional roadway trips for each frac because a truck hauls the tank to the site and then leaves and also returns to haul the tank from the site. If the number of tanks required to frac is high due to a limited municipal water supply rate, the additional number of truck trips could easily exceed 400 trips—100 tanks and four trips per tank. The temporary water lines must connect to an existing water storage area and necessitate crossing roadways to connect to the drill site.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Fracing Operation Requirements
Fort Worth	<p>Operation is governed by the rules below.</p> <ul style="list-style-type: none"> • All operations shall be conducted during daytime hours. • At least 48 hours before operations commence, the operator shall notify the Gas Inspector and post a sign at the entrance of the well site advising the public of the date the operations will commence. • Flowback operations are exempt from work hour restrictions, but subject to noise restrictions. • A watchman is required at all times. <p>Frac ponds require a permit from the City and approval from:</p> <ul style="list-style-type: none"> • Fire Department in order to address the location; • Water Department for sewer line and water line review; • Transportation and DPW for thoroughfare and floodplain; • Planning and Development for forestry review. <p>Fresh water wells may be used in compliance with state law. It shall be unlawful to drill a gas well within 300 feet of existing fresh water wells unless waived by the Property Owner.</p>
Grand Prairie	<p>All formation fracturing operations shall be conducted during daylight hours unless the operator has notified the inspector that fracing will occur before or after daylight hours to meet safety requirements. Air, gas, or pneumatic drilling shall not be permitted.</p>
Mansfield	<p>Work hours limited to daytime hours only. No increase allowed for generated noise levels over daytime decibel limit.</p>

Industry Comment

The Industry's comments were provided via email on April 29, 2010. The submitted recommendation is to create a "Tier/Type" system for frac pond designs in accordance with the table below.

Tier	Location of Pond	Typical Pond Characteristic	Fencing/Landscape
1	Adjacent to right-of-way (ROW) or protected uses	Design as a water feature	6-foot black vinyl coated chain link fence, informal planting around pond, street trees
2	Adjacent to ROW, not adjacent to protected uses	Design as a water feature	6-foot black vinyl coated chain link fence and street trees
3	Not adjacent to ROW or protected uses	Design to maximize water capacity and not a water feature	6-foot black vinyl coated chain link fence, no landscape required

Public Input

The public has expressed interest and concerns regarding the safety and maintenance of the frac ponds concerns over stagnant water pools as ideal breeding grounds for mosquitoes. Public safety is also a concern and fencing of some sort should be installed around the perimeter of the pond.

P&Z's Consideration

The frac ponds should be designed as a feature with restoration time limits and requirements for annual maintenance standards. Perimeter fencing around the pond should be allowed for safety concerns expressed by the operators. A consideration should include setting time limits for site restoration, streetscape standards, perimeter fencing aesthetic controls and alternative screening in addition to fencing, pond maintenance even when not fracing, and criteria for end-of-life restoration. Alternative water storage methods should be encouraged to reduce the number of frac ponds in the city. Pond designs should adhere to the Tiered levels described under Site Condition section Number 2, Landscaping and Fencing, of this report.

DRAFT

2. Landscaping and Fencing

The Gas Well Ordinance currently requires that within 30 days after completion of the final well, all operation sites shall be completely enclosed by a solid masonry wall and vegetation. There are no specific landscape requirements, unless stipulated as part of the Specific Use Permit and/or Permit process.

Fences are currently not required on drill sites during initial drilling as long as 24-hour on-site supervision is provided. A secured entrance gate containing shall be provided. All gates are to be locked when the operator is not within the site.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Landscaping and Fencing
Fort Worth	25% minimum retention and < 25% of same species 25% minimum evergreen species 75% located between site and protected uses/ROW
Grand Prairie	Landscaping required at street frontages Shrubs around site and fences must sufficiently screen
Mansfield	A site must be enclosed with: A wrought iron fence with double row of dense evergreen plantings, to form a solid screen that is at least eight feet tall at the time of planting; or A screening wall of at least 2 complimentary masonry construction materials with non-dwarf variety shrubs planted 3-foot on center, with a 3-foot minimum height at planting and a mature height at least 6 feet. Masonry construction material means brick or natural or manufactured stone, laid up unit by unit and set in mortar and that are at least two inches thick.

Industry Comment

The Industry's comments were provided via email on April 29, 2010. The submitted recommendations identify their preferred option to screen both the pad sites and frac ponds. The recommendation for frac pond screening follows the "Tier/Type" system previously identified in Section 1 (Fracing) of the Gas Drilling Site Condition Topics.

Pad Sites:

Street trees will be required along the right-of-way for pad sites except in areas which are not visible from public rights-of-way or are located in industrial or heavily commercial areas. Limits of the street trees should be the same distance as the limits of the pad adjacent to the nearest right-of-way. If trees are not allowed due to surface use lease requirements, allow for:

1. Payment into a tree fund for the number of street trees required; or
2. Allow trees to be planted within city right-of-way.

Frac Ponds:

Follow "Tier/Type" system for frac pond design.

Public Input

Landscaping and masonry wall isn't done for many years. Need nice fencing and landscaping. Pruitt site has no fencing or landscaping after two years.

P&Z's Consideration

A tiered factor should be considered for landscaping, fencing, and frac pond designs. Landscape requirements would include streetscaping specifications and all landscaping should be installed within 30 days after spudding the first well on the site. The tiers are based on existing zoning criteria for industrial uses. In addition to up-front installation, erection, or design; these requirements should be maintained by the drill operators from the time of installation until the site is restored. Three tiers should be utilized and are defined below.

- **Tier I:** used when drill sites are within 600 feet of a protected use. Requirements include a masonry wall or similar treatment, with maximum 75 percent opacity around the drill site, a 40-foot transitional buffer around the property, a 10-foot enhanced streetscape setback, and frac pond designs incorporate these areas as a site feature.
- **Tier II:** used when drill sites are located in or adjacent to commercial business areas or zoning districts. Requirements include decorative wrought iron fencing with masonry columns, a 20-foot transitional buffer around property, a 10-foot enhanced streetscape setback, and frac pond designs incorporate these areas as a site feature.
- **Tier III:** used in industrial areas or for secluded properties when compatible zoning districts surround the drill site. Requirements include a minimum fencing material standard of dark green or black colored, vinyl-coated chain link, a 0-10 foot transitional buffer around the property, a 10-foot streetscape setback, and no frac pond design standards.

3. Remediation

After a well is completed or plugged and abandoned, the Operator shall clean the drill site or operation site including the frac pond, complete restoration activities and repair all property damage caused by such operations to be completed within 60-days.

Whenever abandonment occurs to the requirements of the Railroad Commission of Texas (RRC), the Operator so abandoning shall be responsible for the restoration of the well site to its original conditions as nearly as practicable, in conformity with the regulations of the Gas Well Ordinance. All wells shall be abandoned in accordance with the rules of the RRC; however well casings shall be cut and removed to a depth of at least ten feet below the surface, no buildings shall be built over the abandoned well.

The RRC Site remediation Section utilizes the State Managed Cleanup Fund in coordination with the RRC District Offices to clean-up pollution of abandoned oil and gas sites. Funding for the program comes from regulatory fees, permit fees, and bond fees paid by the Industry. An abandoned site becomes a candidate for state cleanup when the responsible party fails or refuses to take action, or is unknown, deceased, or bankrupt. Cleanup prioritization is based on public health, safety, and the protection of the environment. The respective RRC District Office inspects for compliance with the requirement to clean and restore a site. If no action is taken by the responsible operator, the State cleans the site and finds the responsible party for reimbursement.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Site Remediation
Fort Worth	After the well has been completed or plugged and abandoned, the operator shall clean the site, complete restoration activities and repair all damage to public property caused by such operations within 60 days.
Grand Prairie	Whenever abandonment occurs pursuant to the requirements of the commission, the operator so abandoning shall be responsible for the restoration of the well site to its original condition as nearly as practicable.
Mansfield	Within 60 days of abandonment of a drill site, the well must be plugged and the site shall be cleaned and cleared of all material and equipment, holes or excavations filled, and the land graded and returned to its original condition including replanting of vegetation to match the surrounding area.

Industry Comment

No specific remediation comments were submitted by the Industry.

Public Input

[The City] should look at drill sites as long term operations.

P&Z's Consideration

Include a pre-drilling assessment of the proposed site to identify the current environment and conditions. Once the well is abandoned, within 60 days, restore the site to the same land use and land cover classification as identified in the pre-drilling assessment. If site grading is required, the operator must also perform this activity within 60 days after well abandonment. Site equipment and all infrastructure improvements should be removed from above and below the ground surface. Any appurtenances the operator requests to remain should be identified prior to site restoration activities and must be approved by the Director of Community Development and Planning. The appurtenances, if remaining, should be clearly identified on an as-built site plan.

DRAFT

Gas Drilling Operations

Several topics were presented for discussion during the third P&Z work session meeting. The next few paragraphs detail site operations topics and include how other municipalities address these concerns, industry comments related to each topic, public input received from Arlington citizens, and recommended considerations.

1. Road Damage

The road damage fee should be paid by the Operator to the City prior to the commencement of any activity under the Gas Well Permit. The road damage fee is based on the Road Damage Assessment Study. The road damage fee is calculated based on the access land miles for the appropriate road type, the assessment per lane mile, and the number of lane miles included in each gas well permit.

If the road damage fee continues, an operator could still be charged for the cost of repairs when the operator's trucks cause specific damage such as knocking over a street light or crushing a curb or shoulder, but only if the calculation used for the road damage fee does not include the cost to repair the damage.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Road Damage
Fort Worth	Bond or letter of credit required.
Grand Prairie	Road maintenance agreement.
Mansfield	A Road Damage Remediation agreement is required. Minimum fee collected is \$5,000 per well. Maximum fee is \$30,000 per well.

Industry Comment

Reevaluate the current unit numbers and continue using the same method and process for the assessment of a road damage fee.

Public Input

Gravel is being accumulated on side roads and is dangerous, notably to children on bicycles. One man lives near Bardin/Bowen Rd site and can hardly get around because of the truck traffic; he said [operator] is not living up to their lease. Gas well access roads need to be paved as is required of other industrial sites. Shaker needs to be placed between drill site and access road.

P&Z's Consideration

Roadway Damage Fees need to be re-evaluated in regards to calculations. A 2007 study resulted in a fee collection average of 200 dollars per well. The study assumes outdated figures for both construction costs and trips generated per each stage. A consideration is to incorporate the existing method of collecting an upfront fee with an annual assessment of the road condition index. An update to the existing study will provide more accurate figures and should be instituted with the understanding these figures need to be updated regularly to reflect precise trip numbers and changes in construction methods, practices, and costs.

The City currently maintains an overall condition index (OCI) of each roadway. The OCI number represents the condition rating of a road segment. This number is critical in providing analysis such as condition maps and future Public Works and Transportation work plans. The upfront fee, similar to the current process, would reflect the OCI of the transportation route associated with the gas well permit. On the permit anniversary date, the same time as the annual inspection, the OCI is reviewed and assessed to determine whether roadway deterioration occurred that exceeded the average annual deterioration recorded prior to utilizing the approved transportation route for gas drilling traffic.

DRAFT

2. Transportation

Vehicles in excess of three tons associated with drilling should be restricted to such streets designated as either truck or commercial delivery routes wherever capable. The City Council may restrict hours of operations and routes traveling through a designated school zone. Prior to forwarding a gas well permit application to Council, Staff reviews the plan and works with the applicant to direct traffic along the most feasible route. The impact to city roadways is minimized because transportation routes utilize identified truck routes and state or federal highways. Once an application is submitted, the City also coordinates a review with the affected independent school district (ISD) to learn how the proposed operation will impact nearby schools and school zones. The ISD input is used to either avoid certain roadways or restrict traffic times.

The transportation route is finalized at the permit stage. The operator is required to utilize identified truck routes, avoid school zones, and adhere to the time restrictions as set forth by City Council. Staff meets with the operator prior to issuing a gas well permit to discuss the approved transportation route and all other permit conditions.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Traffic Routing
Fort Worth	Vehicles in excess of 3 tons are restricted to streets designated as either truck routes or commercial delivery routes. All routes must be approved by the Gas Inspector before the permit is issued. The Inspector has the authority to require an alternate route to minimize the impact to surrounding uses.
Grand Prairie	Vehicles in excess of 3 tons are restricted to streets designated as either truck routes or commercial delivery routes.
Mansfield	Route is approved as part of the SUP zoning. Deliveries for site construction, mobilization/demobilization of the rig, and well servicing limited to daytime hours.

Industry Comment

Include language in ordinance to allow for administrative approval of changes to approved transportation routes. Route changes are sometimes needed because of construction/improvements to existing roadways and required changes by state agencies.

Public Input

Gravel is being accumulated on side roads and is dangerous, notably to children on bicycles. One man lives near Bardin/Bowen Rd site and can hardly get around because of the truck traffic; he said [operator] is not living up to their lease. Gas well access roads need to be paved as is required of other industrial sites. Shaker needs to be placed between drill site and access road.

P&Z's Consideration

Transportation routing should be preliminarily addressed during the SUP stage. The SUP assessment will help identify concerns over proposed roadways and allow citizen comments during the public hearing to help assess localized traffic patterns. The specific route should be finalized during the permit application review and include input received during the SUP process. In addition to public input, staff should also consider road construction, detours, deteriorated roadway conditions, public improvement plans for a section of roadway, and any other unforeseen condition when reviewing the transportation route. Once approved by City Council, a mechanism should be in place to amend the transportation route if the above described events occur outside the review time of a submitted permit. The industry proposes administrative approval.

In addition to the concerns over the traffic routing, citizen feedback provided anecdotal concern over the site access roads. The sites are currently allowed to utilize a gravel or limestone access road that creates dust and debris concerns. The most frequent complaint received by the City regarding gas wells is over dust in the air or mud and debris on the roadways. Typical industrial uses pave their site access road with asphalt or concrete to minimize the amount of generated dust or roadway debris. Current Texas Department of Transportation requirements often force the operator to utilize a gravel roadway with a mud shaker. The City of Arlington, however, does not have a similar stipulation and could approve a paved access road.

DRAFT

3. Bonding

Prior to issuance of a Gas Well Permit the Operator shall provide a security instrument in form of a bond or irrevocable letter of credit. The principal amount of the bond or letter of credit shall be \$50,000 dollars for any single well. Reduction of the bond to \$10,000 can be requested after completion of the well. A Letter of Credit shall be issued by a reliable bank authorized to do business in Texas. Since each bond is held per well, the release of any individual bond currently requires site restoration activities even if additional wells are still in operation on the site.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Bond Requirements
Fort Worth	<u>Drilling Stage</u> \$150,000 between 1-5 wells \$50,000 for each well over 5 <u>Production Stage</u> Up to 75 wells: \$100,000 75 to 150 wells: \$150,000 More than 150 wells: \$200,000
Grand Prairie	Number of producing wells and blanket bond amount. Up to 75 wells: \$100,000 75 to 150 wells: \$150,000 More than 150 wells: \$200,000
Mansfield	Established \$100,000 for single well on pad; \$200,000 for multiple wells. Surety bond, letter of credit, or certificate of deposit may be used.

Industry Comment

Allow for the use of a self-insured policy, allow for a blanket bond for all wells sites for each operator, or create a tiered system for bond requirements. A \$50,000 single-well bond with the option to have a blanket bond in the amount of \$200,000 for an unlimited number of pre-production wells is a good standard. Cap the bond amount at \$1.0 million for all wells for each operator. A tiered proposal recommendation could look something like this:

1. One site or one well: \$50,000 (minimum bond requirement for an operator drilling their first well on a new site).
2. One site or 1-10 wells: blanket bond of \$150,000.
3. Combination of sites greater than 1 or well count greater than 10: Maximum blanket bond per operator of \$250,000 (once an operator exceeds 10 wells, or adds their second site, the maximum blanket bond requirement is triggered).

Public Input

No specific details regarding bonding were provided.

P&Z's Consideration

A risk assessment analysis would identify adequate bond totals that will be properly assessed either per well, site, or operator based on the calculated risk of each. If road damage and complete site restoration is included in the bond, then these activities should be included in the assessment of City risk. In the event individual bonds are still required per well, the City is liable to hold multiple bonds and an available release should be provided for abandoned wells.

Costs

Approximate \$6 million bond: affects credit rating and ability to insure

Blanket Bond

Identified amount per operator and based total on well numbers

DRAFT

4. Flowback

The flowback stage is typically performed after the fracing of a well. Fracing consists of pumping into the formation very large volumes of fresh water that generally has been treated with a friction reducer, biocides, scale inhibitor, and surfactants, and contains sand as the propping agent. Prior to fracing, temporary bridge plugs are placed in the wellbore between each stage. Once the fracing process is complete, a smaller rig drills through the plugs and allows gas to flow through the perforations and up the steel casing. After the plugs have been drilled out, the well is allowed to flow naturally. This stage is considered the well flowback.

Other Municipalities

The three municipalities sharing the longest border adjacent to the City of Arlington are included below. A process comparison table for additional Barnett Shale communities is provided in the Appendix.

City	Flowback
Fort Worth	Allowed 24/7
Grand Prairie	Operations to recover fluids used during fracture stimulation shall be performed during daylight hours only unless the inspector approves such operations during non-daylight hours
Mansfield	No increase allowance for noise over daytime decibel limit.

Industry Comment

Allow flowback operations 24/7 by Ordinance if operators provide required notices.

Public Input

No specific details regarding flowback operations were provided.

P&Z's Consideration

Allow flowback operations to occur 24/7 and maintain the same decibel level increases allowed during drilling. Clearly stipulate in the Ordinance that when a location requires additional on-site water storage, e.g., if activity is within a neighborhood or closer than 600 feet to a protected use, the operator must specify how traffic will be mitigated during overnight or restricted hours when providing notice to the City.

Areas of Consideration

During the P&Z work sessions, additional discussion topics were introduced to the Commission. The two most common discussion matters, Compliance and Enforcement and Noise, are included below. These items were repeatedly discussed and should be evaluated to address public concern.

Compliance and Enforcement

- Current Procedure
 - Pre-activity meetings prior to each stage
 - Notifications from operator to City prior to work
 - On-site inspections
 - Annual inspection of each Gas Well Permit
 - Operators cited for violations of approved City ordinances
 - Citizen Everest, phone, and email responses within 24 hours
- Consideration
 - Increase enforcement and oversight of each gas well facility
 - Evaluate current enforcement tools, i.e. financial penalties

Noise

- Current Procedure
 - Pre-drilling ambient report submitted with permit application
 - Increases over ambient noise level allowed
 - 3 dB nighttime; 5 dB daytime; and 7 dB fracing
 - Continuous monitoring if within 600 feet of protected uses
 - Reports emailed to City daily
- Considerations
 - Increased penalty for noise violations
 - Continuous monitoring required for every drill site
 - Reporting required to be in 1-minute intervals with overages explained
 - Include ordinance requirements regulating pure tones and low frequency noise

APPENDIX

Exhibit 1

Minutes from Planning and Zoning Commission Meetings

Exhibit 2

Town Hall Meeting Notes

Exhibit 3

Gas Drilling Ordinance Comparison Table

DRAFT

EXHIBIT 1

Minutes from Planning and Zoning Commission Meetings

March 3, 2010 Work Session Minutes

MINUTES

WORK SESSION

PLANNING AND ZONING COMMISSION

COUNCIL BRIEFING ROOM

101 WEST ABRAM STREET

**March 3, 2010
4:00 P.M.**

The Planning and Zoning Commission of the City of Arlington, Texas convened in work session on Wednesday, March 3, 2010, in the Council Briefing Room of the Municipal Building, 101 West Abram Street, Arlington, Texas, notice of said meeting being posted as prescribed by Chapter 551, V.T.C.A., Government Code, with the following members present, to wit:

Victor Vandergriff	*	Chair
Edward Gutierrez	*	
Jeffrey Pokrifcsak	*	
Connie Ruff	*	
Charla Vinyard	*	
Kevin McGlaun	*	
Michael Forbes	*	
Andrew Piel	*	

Absent:

Stacie Stewart	*
----------------	---

Staff Present:

Jim Parajon	*	Director, Community Development & Planning
Maria Sayas Carbajal	*	Planning Manager/Development
Kathy Zibilich	*	Assistant City Attorney

Chair Vandergriff called the work session to order at 4:03 p.m. and stated that the purpose of the meeting was to conduct the following items of business:

Gas Well Discussion

The City Council had requested the Commission take a look at specific areas of gas well drilling in Arlington, in particular, land and operation issues. Mr. Parajon gave a Power Point presentation on Natural Gas Program Issues. The City Council had been given the same presentation in February.

Key components of the presentation were:

- Senior Citizen Property Tax Exemptions
- Business and Personal Property Taxes
- Agricultural Exemptions Related to Gas Well Drilling Sites
- Pipelines
- Road Damage Fees
- Frac Ponds
- Specific Use Permit Process and Notifications
- Noise
- Landscaping
- Green Completion
- Air Quality
- Enforcement and Compliance

Mr. Parajon pointed out that the public might not know the difference between the trucks operated by gas well companies and the pipeline trucking companies. Gas well company trucks are prohibited from using certain residential streets and roadways while pipeline company trucks need to be where the lines are being laid.

Roadway Damage Fees need to be re-evaluated in regards to calculations. A 2007 study resulted in a fee of \$200 per well. The cost of repairs of damages to roadways far exceeds that amount.

Frac ponds are lined pits used to store fresh water for fracture operations. Recommendations include treating the pits as design features with time limits and annual maintenance.

Specific Use Permit Processes currently let SUPs expire after one year unless drilling has commenced with no expiration after the first well is drilled. Time limits could be set and boundaries could follow current parcels and tracts instead of the current metes and bounds description. Notification petitions could be increased to 600 feet with a setback reduction petition required at the SUP stage.

Noise violation penalties could be increased with reporting done at one minute intervals.

Landscaping could require Streetscaping in addition the current procedures and those requirements might be expected earlier in the drill site development process. Green Completion relates to the flaring and venting of the wells. More research may be needed to know how it works and the effects on the environment.

Overall, the Texas Commission on environmental Quality (TCEQ) currently studies emissions from gas production and an urban study focus is planned for Arlington and Fort Worth. Current compliance and enforcement procedures are working well and the Fire Department has effective emergency response plans in place.

Chair Vandergriff stated that the Council had asked the Commission to:

- Provide them with information, not a recommendation
- Make comparisons with other areas
- Provide any applicable recent studies that are available
- Avoid the environmental issues and stay with land uses only

It was suggested that the Commission not meet with industry members individually, but all hear the same presentations from the industry as a group during the month of March. Attendance and participation would be very important as well as staying on topic during work sessions. Gas well issues would be presented in sequential order on agendas for the benefit of industry members and residents who might want to attend the meetings. A smaller work group would be formed to decide on the topics and meeting format.

Mr. Parajon suggested three categories for upcoming meeting agendas:

- Site issues such as landscaping
- Operational issues such as frac ponds and water use
- Road damages and impact associated with trucking

Guest speakers from the gas well industry would be invited to present information and answer questions. Input from area residents could be considered as well. It is possible that a packet of good practices could be available to the Council after the April 7, 2010 work session meeting.

It was suggested that Roger Venables with Real Estate Services provide information to the Commission on the monetary worth of gas well production to the City as a whole.

Future Meeting Dates

- a. Special Planning and Zoning Commission Work Session Meetings, March 24, 2010 at 4:00 p.m. and March 31, 2010 at 4:00 p.m. to discuss Gas Well Issues
- b. Monthly bus tour on March 26, 2010
- c. Planning and Zoning Commission Meeting, April 7, 2010
- d. Monthly bus tour on April 16, 2010

There being no further business to come before the Commission, the work session was adjourned at 5:22 p.m.

NOTE: Taped recordings and minutes of all Planning and Zoning Commission work sessions are a matter of public record and are kept on file in Community Development and Planning, 101 West Abram Street, Arlington, Texas. Any Commissioner or interested party has the right to review these tapes and minutes in Community Development and Planning.

MINUTES

SPECIAL WORK SESSION GAS WELL ISSUES

PLANNING AND ZONING COMMISSION

COUNCIL BRIEFING ROOM

101 WEST ABRAM STREET

March 24, 2010
4:00 to 6:00 P.M.

The Planning and Zoning Commission of the City of Arlington, Texas convened in work session on Wednesday, March 24 2010, in the Council Briefing Room of the Municipal Building, 101 West Abram Street, Arlington, Texas, notice of said meeting being posted as prescribed by Chapter 551, V.T.C.A., Government Code, with the following members present, to wit:

Victor Vandergriff	*	Chair
Edward Gutierrez	*	
Jeffrey Pokrifcsak	*	
Connie Ruff	*	
Charla Vinyard	*	
Kevin McGlaun	*	
Andrew Piel	*	
Stacie Stewart	*	

Absent:

Michael Forbes	*
----------------	---

Staff Present:

Jim Parajon	*	Director, Community Development & Planning
Maria Sayas Carbajal	*	Planning Manager/Development
Darren Groth	*	Gas Well Coordinator
Jason Grimm	*	Professional Engineer
Kevin Charles	*	Landscape Administrator
Justin French	*	Planning Project Manager I/Development
Jennifer Ramirez	*	Planner/Development
Douglas Cooper	*	Planner/Development
Roger Venables	*	Real Estate Services
Stuart Young	*	Real Estate Services
Kathy Zibilich	*	Assistant City Attorney

Chair Vandergriff called the work session to order at 4:04 p.m. and stated that the purpose of the meeting was to conduct the following items of business:

Gas Well Discussion

Mr. Parajon introduced Roger Venables, Real Estate Services, to the Commission and guests stating that the next three meetings would cover gas drilling processes, site issues, and operational issues, with a summary to be given in a fourth meeting. The topics for the first discussion of processes would include notifications, petition processes, and time limits.

Mr. Venables gave a Power Point Presentation previously seen by City Council on January 26, 2010. The presentation covered the City as a mineral owner, as a taxing entity, and as a regulatory authority, as well as a vendor supplying water to the gas drilling operations. For fiscal year 2010, the City currently averages \$700,000.00 per month in royalty receipts.

Natural gas production in the City is still in the early stages in terms of the City's mineral interests. Twenty percent of the City's leased mineral acres are designated for production. Royalty receipts had a significant increase between 2008 and 2009, most notably the taxable value of the mineral interests within the City. The properties with agricultural exemptions retain that exempt status when the property becomes a drill site. The Railroad Commission filings report an increase in mineral acres which have been unitized for drilling purposes. Gas drilling and production as a permitted use has been approved on 66 sites comprised of 312 acres.

The City's roll in pipeline regulation pertains to how and where the pipelines cross public rights-of-way and public land. License agreements are used to insure that gas pipelines are not in conflict with other utilities. License fees are assessed for mapping and coordination with pipeline companies to guarantee updated insurance and bonding.

Mr. Groth continued with the presentation stating that the number of applications had increased since 2006 with 90 gas well permit applications expected in 2010. Many of these activities are on existing drill sites as drilling operators apply for additional permits year after year.

Currently as applications for a zoning change are received by the City, Property Owner Notices (PON's) are sent out to all homeowners within 200 feet of the pad site. When an applicant applies for a drilling permit, the distance for notifications is increased to 600 feet. The proposed change would increase the 200 foot notification radius to 600 feet for zoning changes as with drilling applications.

In regard to Petitions; during the Specific Use Permit (SUP) process, there is a Petition of Opposition for the zoning change within the 200 foot distance. If 20 percent or more of the acreage representatives in that area submit a letter of opposition to the zoning change, a super majority vote by the City Council is then required for that SUP. If a setback reduction is requested by an applicant during the Gas Well permit process, all property owners within the 600 feet radius must be contacted by the drill site operator and at least 60 percent of those within that radius must approve of the reduction for the gas well to be drilled. If the Petitions of Support are below 60 percent, a super-majority vote by City Council is required for

the Gas Well Permit. The proposed change would require that the setback reduction requests be submitted during the SUP process with the same conditions and measurements.

Currently SUP's expire after one year with a possible extension of one year with administrative requirements for each site. After the first well is drilled, there is no longer any expiration date and the SUP will stay with the property as long as it is an active drill site. The proposed change would set a time limit on the SUP process. After expiration, even with an active drill site, the operator would go before City Council to update the site status.

Entire property boundaries could be included in the SUP, thus helping to enforce landscaping standards and streetscape installation. Plat requirements could ensure adequate infrastructure for adjacent development, identify access easements, and promote orderly development in the City. Mr. Groth presented a Municipal Comparison with neighboring cities regarding zoning, notices, and setback distances and processes.

Additional considerations offered were to make SUP's valid for five years, with operators of existing sites being required to update City Council regarding on-site conditions after the five years. Discussion could be held concerning platting or increasing the SUP area to specify the property lines.

Cliff Mycoskie and Jacob Sumpter with Mycoskie, McInnis, and Associates, Inc. presented the Commission with a packet of recommendations from MMA as well as Chesapeake, Vantage Energy, and Titan Operating regarding proposed changes to the City's Gas Well Ordinance.

Kimberly Frankland, 2708 Augusta Lane, Arlington, 76012, addressed the Commission stating that she felt that gas drilling was development of property and should be treated as any other development or business in the City. She thought that it should be platted with easements and liked the proposal of increasing the notifications to 600 feet.

George Schlemeyer, P.O. Box 122138, Arlington, 76012, offered to share his expertise as a veteran of the oil and gas industry with the Commission.

Mr. Groth demonstrated how to access the City's website and the link to the Gas Well Drilling Site for the Commission, the citizens, and the industry representatives.

Future Meeting Dates

- a. Special Planning and Zoning Commission Work Session Meetings, March 31, 2010 and April 14, 2010 at 4:00 p.m. to discuss Gas Well Issues
- b. Monthly bus tour on March 26, 2010
- c. Planning and Zoning Commission Meeting, April 7, 2010, including further Gas Well Discussion
- d. Monthly bus tour on April 16, 2010

There being no further business to come before the Commission, the work session was adjourned at 5:35 p.m.

NOTE: Taped recordings and minutes of all Planning and Zoning Commission work sessions are a matter of public record and are kept on file in Community Development and Planning, 101 West Abram Street, Arlington, Texas. Any Commissioner or interested party has the right to review these tapes and minutes in Community Development and Planning.

DRAFT

MINUTES

SPECIAL WORK SESSION GAS WELL ISSUES

PLANNING AND ZONING COMMISSION

COUNCIL BRIEFING ROOM

101 WEST ABRAM STREET

**April 14, 2010
4:00 P.M.**

The Planning and Zoning Commission of the City of Arlington, Texas convened in work session on Wednesday, April 14, 2010, in the Council Briefing Room of the Municipal Building, 101 West Abram Street, Arlington, Texas, notice of said meeting being posted as prescribed by Chapter 551, V.T.C.A., Government Code, with the following members present, to wit:

Victor Vandergriff	*	Chair
Jeffrey Pokrifcsak	*	
Kevin McGlaun	*	
Connie Ruff	*	
Andrew Piel	*	
Stacie Stewart	*	
Edward Gutierrez	*	

Absent:

Charla Vinyard	*
Michael Forbes	*

Staff Present:

Jim Parajon	*	Director, Community Development & Planning
Maria Sayas Carbajal	*	Planning Manager/Development
Darren Groth	*	Gas Well Coordinator
Jason Grimm	*	Professional Engineer
Justin French	*	Planning Project Manager I/Development
Jennifer Ramirez	*	Planner/Development
Douglas Cooper	*	Planner/Development
Kevin Charles	*	Landscape Administrator
Kathy Zibilich	*	Assistant City Attorney

Chair Vandergriff called the work session to order at 4:04 p.m. and stated that the purpose of the meeting was to conduct the following items of business:

Gas Well Discussion

Mr. Groth gave a Power Point presentation summarizing the previous three work sessions regarding Drill Site Processes, Site Conditions, and Site Operations in the City. Through discussions and feedback, the Tiered Classification of the pad sites was identified for change. Tiers are based on zoning and requirements are to be constructed up front and maintained by the drill operators. Suggested were:

Tier I, possibly used where drill sites are adjacent to residential areas, could require a masonry wall or similar treatment around the site, a 40-foot transitional buffer around the property, a ten foot enhanced streetscape, and ponds as a design feature.

Tier II, where drill sites are adjacent to commercial areas, could require wrought iron fencing with masonry columns, a 20-foot transitional buffer around property, a ten foot enhanced streetscape, and ponds as a design feature.

Tier III, in an industrial area, could require vinyl coated chain link fencing with a zero to ten foot transitional buffer around the property, a ten foot streetscape, and frac pond standards.

Suggested Ordinance revisions included:

- Specific Use Permit (SUP) expiration dates
- Definition of a site boundary
- Flowback activity allowed 24/7

Suggested policy changes included:

- Notification distances and neighborhood meetings prior to the SUP
- Use of easements in lieu of platting
- Use of temporary water lines
- Requirement of access drive paving
- Removal of major equipment when site is dormant

Items suggested for additional review from the Commission were:

- Road damages and the fees involved
- Bonding requirements per site

Other cities in the area have higher notification distances and there was discussion on sending notifications at the SUP stage as well as making all notice distances equal. A risk assessment of bonding was suggested using information from other cities. The City assesses the costs of repairs so it was suggested that benchmarks of existing road conditions be taken before site work begins, with periodic re-assessments and negotiations with drill operators thereafter. The Commission compared bonds and fees for road repairs. Bonds are currently \$50,000 per site and subject to be called during their time frame at the City's discretion. Fees are collected and remain in place long after bonds expire when roads may develop problems and need repair. There was much discussion on how to prove damages by drill operations and the road damages possible during the various stages of a drill operation. A combination of bonds and per bore fees, higher than currently assessed, was suggested. It was noted that trucks hauling to a Tier III site might be using streets in Tier I and Tier II areas.

Chair Vandergriff pointed out that the City Council would be the policy maker and that the Planning and Zoning Commission would need to identify the issues for Council consideration. He suggested a reporting format of:

- Identifying the issues in a matrix style
- Outlining the COA current practices
- Clear comparison to other cities for benchmarking
- Comments for consideration or a list of ideas and how they may interrelate

He also asked for information on several additional cities not listed in an earlier comparison, as well as any additional recommendations from the Staff and responses from the Industry.

It was suggested that Citizen's questions might be used in compiling the list of issues and that, financially; the Citizenry may not be gaining as much as the City and the gas companies are. When notifications are mailed out, it was suggested that more information be included in those Property Owner Notices to explain to the public the details of the SUP, invite them to any potential neighborhood meetings, and increase communication with residents. General information is available on the City website and those who call the Community Development and Planning Department can have questions answered by Staff during business hours.

Meeting notes from the District 2 Town Hall Meeting on April 8, 2010, were given to the Commission as well as copies of an article from the Star Telegram published April 13, 2010, entitled "Arlington considers tighter rules for natural gas drilling".

Cliff Mycoskie with Mycoskie, McInnis, and Associates, Inc. presented the Commission with comments from MMA as well as industry representatives Chesapeake, Vantage Energy, Titan Operating, Range Resources, and Quicksilver Resources regarding the Staff's recommendations and proposed changes to the City's Gas Well Ordinance.

Todd Harshman, 5520 Silver Maple Drive, 76018, read a statement to the Commission regarding safety, property values, timelines, and quality of life. He asked that the Commission consider timelines, setbacks, landscape and streetscape standards, sound walls, frac ponds, reclamation, and notifications.

Bill Tillotson, 7704 Frio River, 76001, asked the Commission to consider the recent noise standards used in Mansfield. He compared velocity to speed in regard to sound and suggested that the City standards could be raised in order to protect residents from excessive noise levels.

Chair Vandergriff announced that the Commission would have the opportunity for additional service in the near future as they contribute input on the Economic Incentive Package in the City.

Future Meeting Dates

- e. Planning and Zoning Commission Meeting, April 21, 2010

There being no further business to come before the Commission, the work session was adjourned at 5:59 p.m.

NOTE: Taped recordings and minutes of all Planning and Zoning Commission work sessions are a matter of public record and are kept on file in Community Development and Planning, 101 West Abram Street, Arlington, Texas. Any Commissioner or interested party has the right to review these tapes and minutes in Community Development and Planning.

DRAFT

EXHIBIT 2

April 8, 2010 Town Hall Meeting Concerning Gas Wells

NOTES:

1. Noise
 - a. One thinks we need to revamp the gas well ordinance, especially related to noise levels. He said other cities have better ordinances and fines for not complying with a sound level should be raised to \$20,000
2. Emissions
 - a. One concerned about quality of air around the school
 - b. One person concerned about benzene.
 - c. Another said no benzene is released during drilling operations. He said it is only emitted when the gas is wet gas. Arlington's gas is dry gas.
 - d. Lady who works for gas company said VOCs (volatile organic compounds) are the real emissions culprit
 - e. Do we require recovery units on tanks?
3. Notification about gas well
 - a. One person wants notification to 1000'
 - b. Another wants more notification—even about *possible* well sites
 - c. A person said notification should be at least 600' and preferably 1000'
4. Pipeline
 - a. What can we do about pipeline companies?
 - b. Resident was not notified about a pipeline being installed behind her house, which resulted in ground shaking, big equipment, trucks, dust, etc. Wants to know who is notified and when?
 - c. Pipeline trucks are running down Ledbetter—a small country road.
5. Compressor Station
 - a. What are we doing about the noise levels at compressor stations? Do they use hospital mufflers?
6. Overall gas well regulations
 - a. Are we monitoring the rules and regulations we now have in place? How often? Who? These well sites (she is close to the Pruitt well) are filthy, trucks run all night, Ledbetter Rd is full of cracks, truck ended in ditch, etc. — who's watching?
 - b. Resident heard, just that night, loud noises and trucking. He said they also frac at night and said gas companies make so much money they don't care about the little penalty money we charge.
7. Petitions/Agreement to waive the 600' distance
 - a. Should be a prohibition against gas well companies paying for signatures.
 - b. Instead of 60% of owners, it should be 75%-100%
 - c. Another said it should be 80%-90%
8. Inspections
 - a. How many city staffers are employed to specifically inspect well sites?
 - b. How many complaints have there been concerning gas well operations?

- c. Can we hire inspectors? Let the gas companies pay for them. Could we have independent inspectors?
 - d. When and how often are inspections of wells and well sites?
9. Communication
 - a. Do we have a 24-hour hotline for gas well problems/emergencies?
 - b. What percent of complaints are valid?
10. Roads
 - a. Gravel is being accumulated on side roads and is dangerous, notably to children on bicycles.
 - b. One man lives near Bardin/Bowen Rd site and can hardly get around because of the truck traffic. He said Chesapeake isn't living up to their leases
 - c. Gas well access roads need to be paved as is required of other industrial sites.
 - d. Shaker needs to be placed between drill site and access road.
11. Miscellaneous
 - a. A penalty should be to shut down the operation for a day or so in addition to money.
 - b. Concern about the industrial look of Arlington and its future growth. We aren't holding any big areas for future development.
 - c. People can't sell their homes around the Pruett well, which has been up two years.
 - d. Pruett site has no fencing or landscaping after two years.
 - e. Look at drill sites as long term operations
12. Aesthetics
 - a. Landscaping and masonry wall isn't done for many years
 - b. Need nice fencing and landscaping
13. Distance of well to protected uses
 - a. Several seemed to want wells to be at least 600' from houses, one said 1000'
 - b. All who spoke on this subject seemed to agree 300' is too little
14. Process
 - a. Require notification to at least 1,000 feet
 - b. Require petitions to be signed without monetary payment
 - c. Do not allow setback reductions, adhere to 600-foot standard
15. Conditions
 - a. Use Mansfield noise model
 - b. Find a way to increase fines
 - c. Require access drive to be paved
 - d. Require removal of major equipment when activity not occurring
 - e. Require landscaping, etc. up front
 - f. Require pipeline companies to submit truck routing
16. Questions
 - a. Do we have a way to contact an inspector 24 hours per day?

GAS DRILLING PROGRAM REPORT



Gas Drilling Ordinance Comparison Table

City	Arlington	Fort Worth	Grand Prairie	Mansfield	Flower Mound	Grapevine	Southlake	Denton	Corinth
Zoning	Yes	No	No	Yes	Yes, for centralized facilities	Yes	Yes	Yes	Yes
Notifications	-200 ft for SUP -600 ft for GWP	-1000 ft, multiple -none for subsequent	-1000 ft of proposed well	-600 ft	-1000 ft of proposed well	-1000 ft	-1000 ft from proposed site	-SUP notices sent 200-500 feet from drill site	-1500 ft
Green Completions	-Not required	-Yes, Reduced Emission Completion	-Not required	-Not required	-Vapor recovery required for centralized facilities	-Not required	-Not required	-Not required	-Not required
Road Repair	-Fee based on mileage, road type and assessment	-Bond or letter of credit required	-Road maintenance agreement	-Repair Agreement; & -Remediation Fee	-Bond or letter of credit required	-Bond or letter of credit required	-Road Repair Agreement	-Road Repair Agreement	-Road Repair Agreement
Fracing Stipulations	-Daytime hours -unless Operator obtains permission for nighttime operations.	-Daytime hours -unless Operator obtains permission for nighttime operations -watchman required	-Daytime hours -unless Operator notifies if fracing before/after daylight hours for safety	-Pits filled and returned to prior state after drilling is complete	-Daytime hours -unless Operator obtains permission for nighttime operations	-Flowback during daylight hours -watchperson required -no venting directly to the atmosphere	-Frac ponds or surface fresh water ponds not permitted	-Daytime hours -unless Operator notifies if fracing before/after daylight hours for safety	-Daytime hours -unless Operator obtains permission for nighttime operations
Allowable Noise Levels	-5 dB increase during daytime hours -3 dB during nighttime hours -7 dB for fracing -5 dB for nighttime backflow -production shall not exceed ambient level	-5 dB increase during daytime hours -3 dB during nighttime hours -10 dB for daytime fracing -3 dB for nighttime flowback -pure tones considered	- 5 dB increase during daytime -3 dB during nighttime -10 dB for fracing -5 dB for backflow operations -pure tones considered -at nearest protected use	- 5 dB increase during daytime hours -3 dB during nighttime hours -10 dB for fracing -5 dB for backflow operations - Measured at nearest protected use	-70 dB for drilling 300 feet from residents between 7 a.m. and 9 p.m.; 56 dB between 9 p.m. and 7 a.m.; and 70 dB for daytime fracing -5 dB over ambient during daytime and 3 dB over ambient	-65 dB at 300 ft -85 dB for fracing	-100 ft from structure, cannot exceed ambient: a. more than 10 dB during fracing b. 5 dB during nighttime backflow c. 5 dB daytime or 3 dB nighttime for all other activities	-Internal combustion engines may be used in drilling operations if they have mufflers that will reduce noise to not more than 90 dBA at any point 300 ft from the boundary of the drill site or operation site.	-A noise management study/plan is required, and noise level permitted is dependent on the results of that study.
Landscaping	-Commercial standards w/ mitigation for removal -8' solid masonry wall after completion	-25% min retention < 25% of same species -25% min evergreen species -75% min located between site and protected uses or ROW	-Required at street frontages -shrubs around site and fences must sufficiently screen	-Fence options: 1) masonry, w/shrubs > 6 ft planted 3 ft on center; 2) concrete w/ shrubs; 3) earthen berm; 4) wrought iron w/ evergreen plantings; 5) combo from above; or 6) City Council stipulations	-Around structures associated w/ extraction, production, and transportation - w/in 45 days of production. Four options: 1) Vegetation 2) Natural and manmade screens 3) Fence screening 4) Escrow Funds	-Installed around the site and all fences to sufficiently screen -Shrubs > 3 feet and must have irrigation -Submitted to the DRC for approval	-8-foot masonry wall w/in 60 days of completion of the first well on the site -8-foot chain link fence around all equipment inside masonry wall -screening requirements as set forth in the zoning ordinance	-6 ft high solid screen fence is required for all well heads located within 500 ft of residential structures. -Buffer requirements dependent on adjacent zoning district.	-8 ft chain-link fence for well heads -masonry upon completion -Screening shrubs to complement architectural character of the surrounding neighborhoods. Shrubs required to be 3 ft in high. -Landscaping required along all
Setback Distances	-600 feet to protected uses, can be reduced by City Council to no less than 300 feet	-600 feet to protected uses, can be reduced by City Council to no less than 300 feet	-500 feet to protected uses, can be reduced by City Council to no less than 300 feet	-600 ft to subdivision; unless all owners consent -600 ft to unplatted residential, public building, institution, school, day care or commercial building; unless all owners consent -1000 ft to hospital, nursing home or Law Enforcement Center	-1000 ft to parks & residences w/o mineral interest -500 ft to residences w/ mineral interest -1000 ft to religious institution; public, hospital or school buildings -500 ft to other buildings and Env Sensitive Areas	-1000 ft from a park -1000 ft from a protected use -300 from any building	-1,000 ft from any habitable structure or property line of occupied school or hospital	-500 ft from residential structures unless a waiver is signed by owners of residential structures; within 250 ft to 500 ft , cannot be less than 250 ft.	-600 ft from Protected Use (residence, religious institution, hospital building, school or public park) unless a waiver is signed by owners of residential structures within 300 ft and affirmative vote by the City Council -cannot be less than 300ft.