

Memorandum



CITY OF DALLAS

DATE July 27, 2012
TO The Honorable Mayor and Members of the City Council
SUBJECT Gas Drilling Briefing

On August 1, 2012, the City Council will be briefed on proposed changes to the Gas Drilling Ordinance. Mr. Terry S. Welch and Dr. Ed Ireland, Ph.D. will each present a point of view related to the proposed ordinance changes. The briefing materials are attached for your review.

Please let me know if you have questions or need additional information.

A handwritten signature in black ink, appearing to read 'Mary K. Suhm', written in a cursive style.

Mary K. Suhm
City Manager

Attachment

c: Thomas P. Perkins, Jr., City Attorney
Rosa Rios, City Secretary
Craig Kinton, City Auditor
Judge C. Victor Lander, Administrative Judge
A.C. Gonzalez, First Assistant City Manager
Ryan S. Evans, Assistant City Manager
Forest E. Turner, Assistant City Manager
Joey Zapata, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Stephanie Cooper, Assistant to the City Manager

A Balanced Approach to Urban Gas Drilling

Terry S. Welch, Esq.
Brown & Hofmeister, LLP

August 1, 2012

3 Major Issues

- **Decrease in setback distances**
- **Drilling in the floodplain**
- **Drilling in public parks**

Setbacks and Setback Variances

Establish drilling setbacks and variance distances that protect both public health and property rights

- **Scientific studies currently differ as to the effect of gas drilling/hydraulic fracturing on human health, and **doubt should be resolved in favor of public health and safety****
- **The closer gas drilling is allowed to protected uses through setback variances, the **“bar is set”** at that distance**

Establish drilling setbacks and variance distances that protect both public health and property rights

Flower Mound Experience

Total Number of Pad Sites Applied for:	22
Total Number of Pad Sites Approved:	19
Pad Sites Requiring Variances:	15

Almost 80% of the pad sites approved in Flower Mound since the inception of its gas drilling ordinance in 2003 obtained some sort of variance, the overwhelming majority of which were setback variances

Establish drilling setbacks and variance distances that protect both public health and property rights

- **The majority of drilling applications contained setback variances**
- **The City should anticipate most drilling applications will contain a variance request**

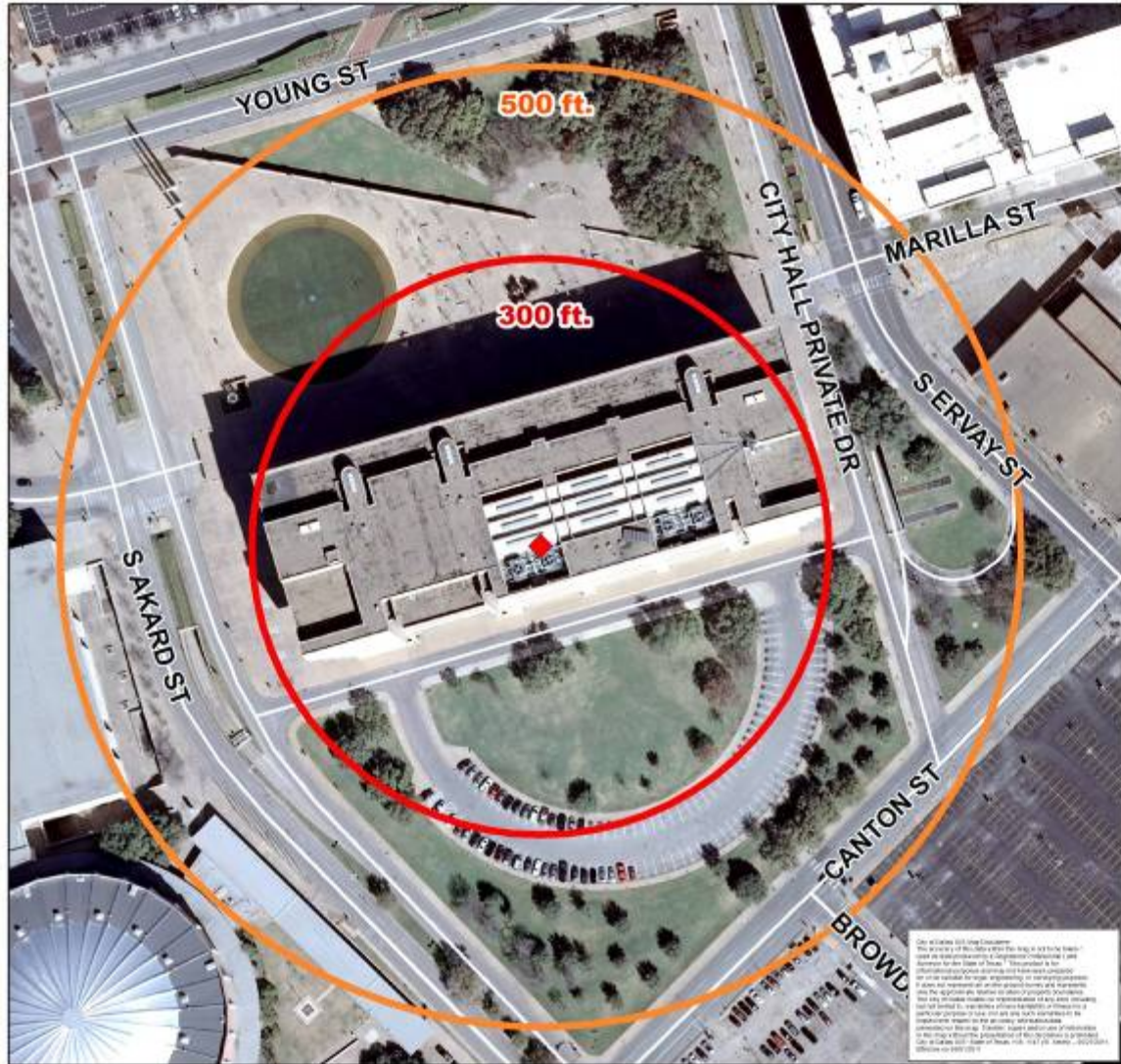
Establish drilling setbacks and variance distances that protect both public health and property rights

- **Allowing gas drilling nearer than 1,000-1,500 feet from residential areas has the potential to negatively impact residential property values**
- **In 2009 Flower Mound commissioned Integra Realty Resources to study the effect of gas drilling on residential property values**

Sample Pad Site



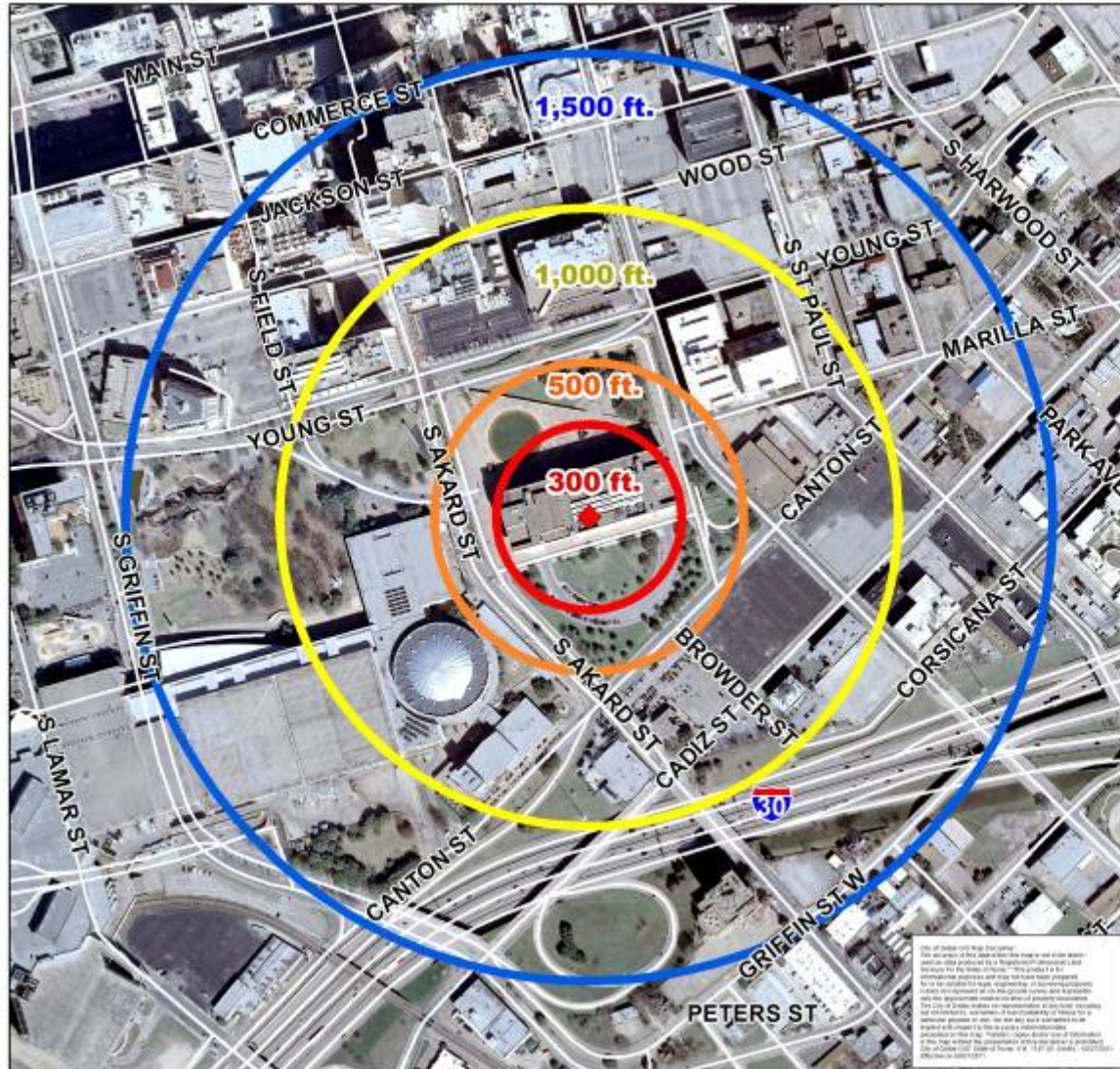
Imagine these setbacks at City Hall Plaza



Imagine these setbacks at City Hall Plaza



Imagine these setbacks at City Hall Plaza



Establish drilling setbacks and variance distances that protect both public health and property rights

Integra's Conclusions After Reviewing Sales Data:

■ ***Price-Distance Relationship***

- **Damages** indicated are -2% to -7%
- Dissipate at 1,000 to 1,500 feet

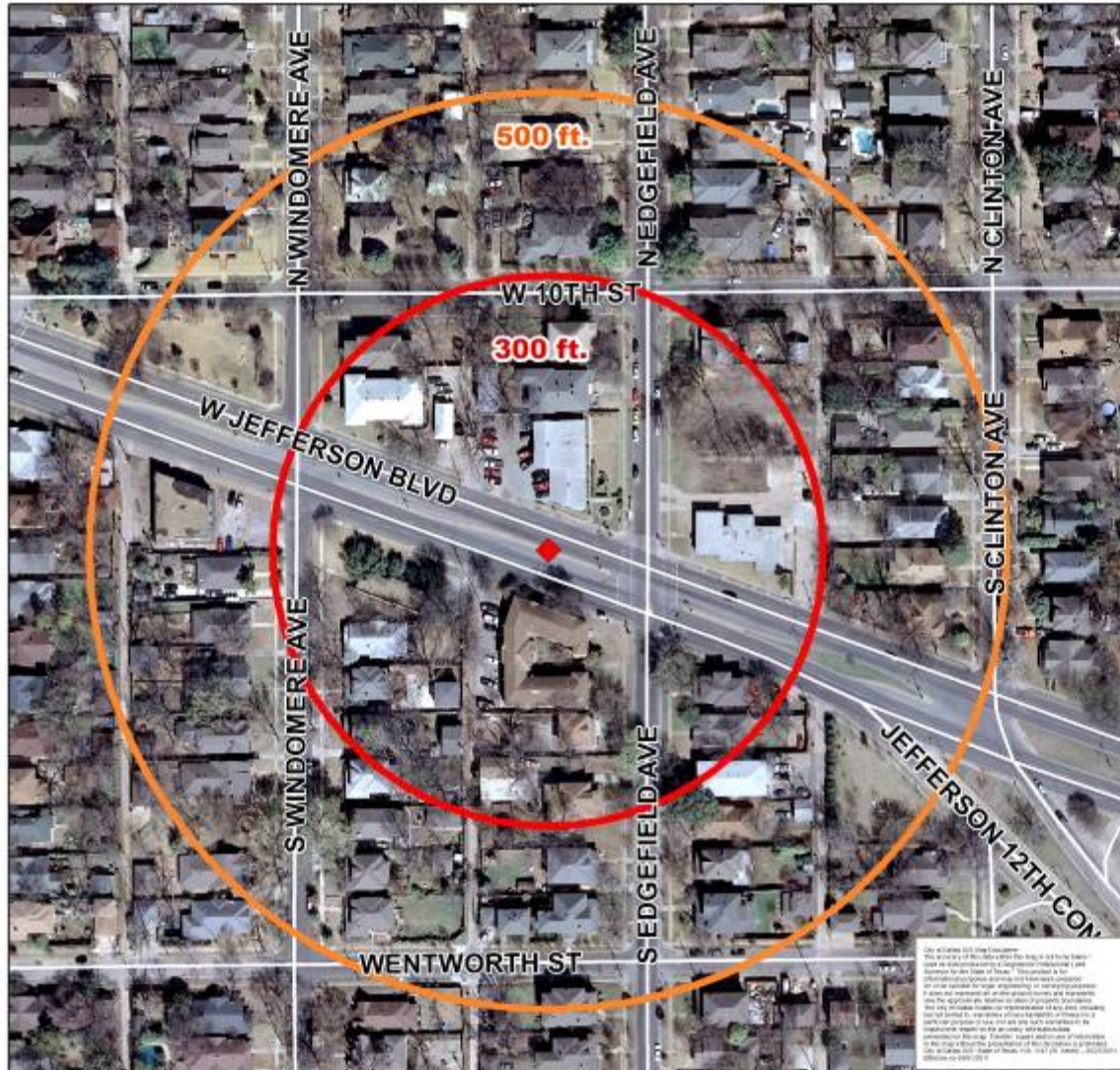
■ ***Sales Comparison***

- **Damages** indicated are -3% to -14%
- No damages past 750 to 1,000 feet
- Effect is near zero if a buffer is present

A Production/Drilling Site



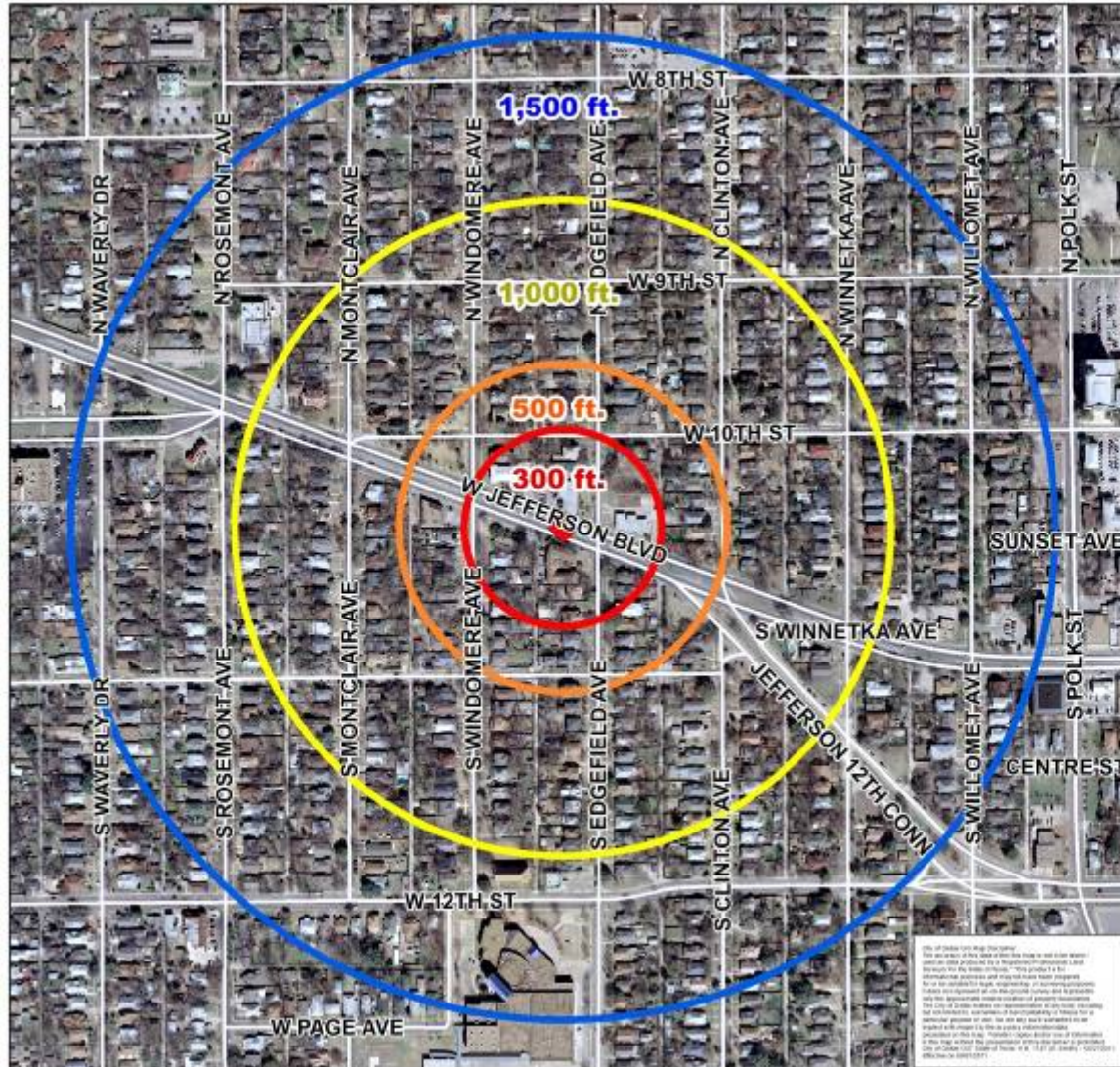
Imagine these setbacks in a Dallas neighborhood



Imagine these setbacks in a Dallas neighborhood



Imagine these setbacks in a Dallas neighborhood

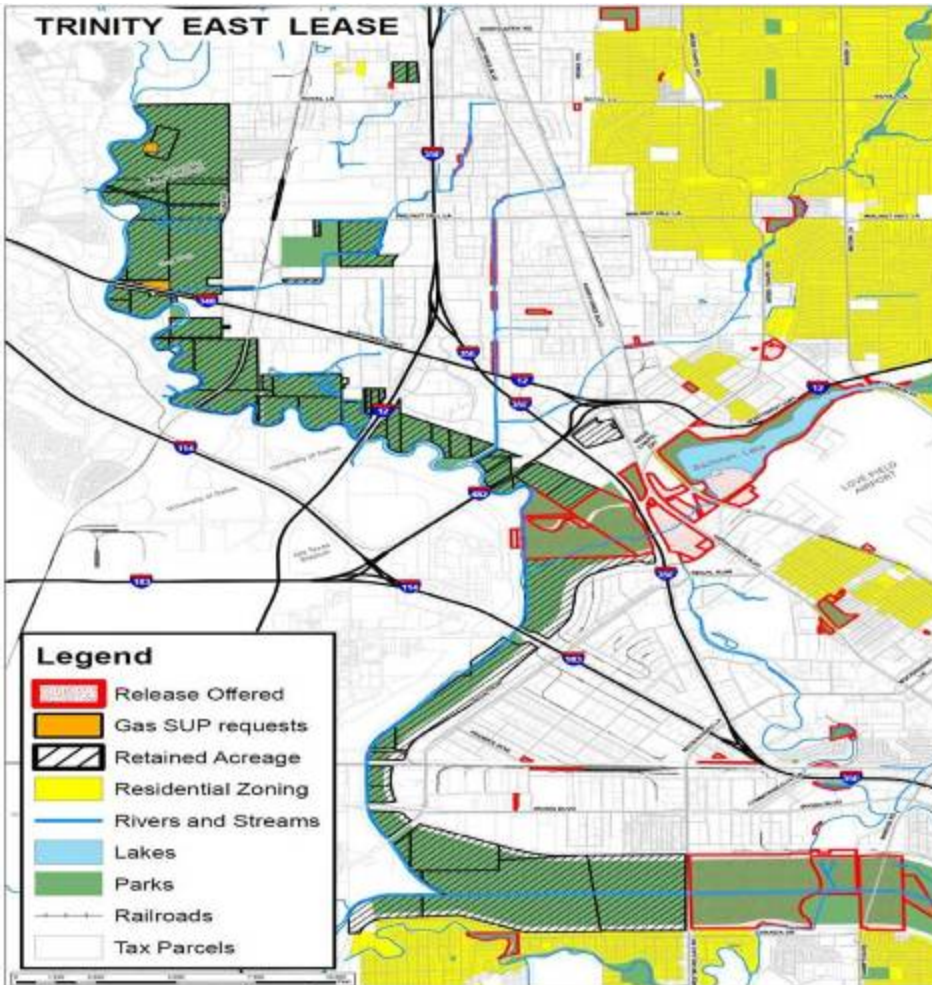


Drilling in the Floodplain

Prohibit Drilling in Floodplains

- Floodplains by definition are subject to flooding, and flooding of gas well sites may result in release of undisclosed hazardous chemicals, along with significant amounts of salt and hydrocarbons, into water channels
- Contamination of water may result in serious **health and safety risks**

Drilling in the Floodplain



Prohibit Drilling in Floodplains

- **UT Energy Institute concluded that surface spills are more prevalent with hydraulic fracturing than other oil and gas production**
 - The primary risk of **uncontrolled releases** is generally to surface water and groundwater resources
 - Hydraulic fracturing chemicals at the surface present a more significant risk above ground than as a result of injection in the deep subsurface
 - The more **toxic** the release is, the higher the risk if there is migration into surface water or groundwater to humans, animals or other receptors
 - Little information is available on the short- or long-term consequences of surface spills

Prohibit Drilling in Floodplains

- **Downstream property owners at risk**
- **Drilling in the floodplain would allow drilling in the Trinity River corridor**
- **Dallas development regulations currently allow landfills and electrical substations in the floodplain; however, those activities are subject to several existing federal water pollution prevention laws that gas drilling and hydraulic fracturing operations are exempt from.**
- **Therefore, comparing gas drilling to landfills and substations is not appropriate**

Drilling in Public Parks

Prohibit Drilling in Public Parks

- All parkland is **valuable** and a **limited public commodity**, and if drilling is allowed, that area may be diminished or effectively eliminated as parkland for decades
- Industrial uses of parkland are incompatible with traditional uses of park property and are inconsistent with the City's long-term planning goals

Drilling in Public Parks



Prohibit Drilling in Public Parks

- **Future uses of park property often not currently contemplated**
- **Passive park areas may become active park areas in the future**
- **Potential health effects of gas drilling on visitors to park areas**

Conclusion

If these concerns are later determined to be without merit, the City Council may amend its ordinances accordingly.

If these concerns are determined to be of merit after enactment of weaker provisions, it will be too late.

**Dallas Gas Drilling
Task Force:
A Balanced
Approach to Urban
Gas Drilling**

August 1, 2012

Introduction

The Gas Drilling Task Force spent many hours addressing all aspects of natural gas drilling operations. Most of the Task Force's final recommendations presented to the Dallas City Council in May 2012 were either unanimous or nearly so; however, there were several areas of concern about the final recommendations that were presented to the Council, and the undersigned Task Force members strongly urge the Dallas City Council to consider the alternative recommendations contained in this Balanced approach.

While there were differences of opinion on several key Task Force recommendations, one area of unanimity was our great appreciation of the leadership provided by Lois Finkelman as the Task Force chair and the incredible assistance provided by City staff members Kris Sweckard, David Cossum, Theresa O'Donnell, Tammy Palomino and many other City staff members. The work of the Task Force could not have been completed without them.

Dr. Ramon Alvarez
Senior Scientist, Environmental Defense Fund

Cherelle Blazer, Executive Director
You Can't Live in the Woods

Dr. David Sterling, Professor
Chair, Department of Environmental and Occupational
Health Sciences
Chair (Interim), Department of Epidemiology
School of Public Health
University of North Texas Health Science Center

Terrence S. Welch, Attorney
Brown & Hofmeister, LLP

EXECUTIVE SUMMARY

1. Establish more protective setbacks and variance distances that protect both public health and property rights

- Scientific studies currently differ as to the effect of gas drilling/hydraulic fracturing on human health, and doubt should be resolved in favor of public health and safety
- The closer gas drilling is allowed to protected uses through setback variances, the “bar is set” at that distance. In Flower Mound, 80% of drilling sites obtained variances, the majority of which were setback distance variances
- Allowing gas drilling nearer than 1,000—1,500 feet from residential areas has the potential to negatively impact residential property values

2. Prohibit drilling in the floodplain

- Floodplains by definition are subject to flooding, and flooding of gas well sites may result in release of undisclosed hazardous chemicals, along with significant amounts of salt and hydrocarbons, into water channels
- UT Energy Institute concluded that surface spills are more prevalent with hydraulic fracturing than other oil and gas production
- Contamination of water may result in serious health and safety risks
- Downstream property owners at risk
- Drilling in the floodplain would allow drilling in the Trinity River corridor
- Dallas development regulations currently allow landfills and electrical substations in the floodplain; however, those activities are subject to several existing federal water pollution prevention laws that gas drilling and hydraulic fracturing operations are exempt from. Therefore, comparing gas drilling to landfills and substations is not appropriate.

3. **Prohibit drilling in any public parks** (see note 10)

- All parkland is valuable and a limited public commodity, and if drilling is allowed, that area may be diminished or effectively eliminated as parkland for decades
- Industrial uses of parkland are incompatible with traditional uses of park property and are inconsistent with the City's long-term planning goals
- Future uses of park property often not currently contemplated—dog parks, in-line skate parks and other current uses probably weren't contemplated 30 years ago
- Potential health effects of gas drilling on visitors to park areas
- Ironic that we call parks a "protected use" and prohibit drilling within 1,000 feet of a park, but would allow drilling in the park

Conclusion: If these concerns are later determined to be without merit, the City Council may amend its ordinances accordingly. If these concerns are determined to be of merit after enactment of weaker provisions, it will be too late.

KEY ISSUES TO THE BALANCED APPROACH

A. Drilling Setback Distance Variances

Task Force Recommendation: By a 5-3 vote, it was recommended that protected uses should have a 1,000 foot setback (measured from the property line), with a minimum setback variance of 500 feet allowed with a 2/3 City Council vote. Other setbacks, however, would be measured from habitable structures and would only be 300 feet.¹

Balanced Approach Recommendation: Many members of the Task Force originally supported the compromise position of a 1,000-foot protected use setback with a minimum setback variance of 750 feet; however, several Balanced Approach members believe the protected use setback should be 1,500 feet, measured from the property line, and not reduced to less than 1,000 feet with a 3/4 City Council vote.

Rationale supporting Balanced Approach Recommendation:

1. First, it should be noted that the Task Force initially recommended that the setback variance for a protected use be no less than 750 feet; however, at the last meeting of the Task Force on February 28, 2012, this recommendation was significantly reduced to only 500 feet. The 750-foot distance itself was a compromise position, and the Balanced Approach still believes this distance is preferable to the 500-foot distance. In addition, several members of the Balanced Approach suggest that if the original compromise distance (1,000-foot setback/750-foot variance) is abandoned, then they would now support both a greater setback distance and variance distance (for example, 1,500 feet/1,000 feet).

2. After the conclusion of the Task Force's meetings, in March 2012 the University of Colorado Denver School of Public Health issued a report that air pollution caused by hydraulic fracturing may contribute to acute and chronic health problems for those individuals who live near gas drilling sites.² While it

¹ This recommendation is found at page 15 of the Recommendations Matrix dated March 1, 2012. This vote was taken after Dr. Alvarez had left the meeting.

² "Our results show that the non-cancer health impacts from air emissions due to natural gas development is greater for residents living closer to wells," the report said. "The greatest health impact corresponds to the relatively short-term, but high emission, well completion period. . . . We also calculated higher cancer risks for residents living nearer to the wells as compared to those residing further

was not the charge of the Task Force to review and critique scientific studies on the topic, at an absolute minimum it is clear and undisputed that scholars and scientists in this area of study often strongly disagree about the human health effects of gas drilling and hydraulic fracturing. Because of this dispute and these unresolved issues, caution is advised and setback distances become even more important.

3. The experience of at least one Metroplex municipality is that whatever the designated well setback distance may be, the overwhelming majority of drilling applications will request setback (and other) variances. In Flower Mound, the historical data is as follows:

Total Number of Pad Sites Applied for:	22
Total Number of Pad Sites Approved:	19
Pad Sites Requiring Variances:	15 ³

Thus, almost 80% of the pad sites approved in Flower Mound since the inception of its gas drilling ordinance in 2003 obtained some sort of variance, the overwhelming majority of which were setback variances.

4. Based upon observations of many Metroplex cities, it is reasonable to anticipate that practically every application to drill will contain a setback variance request. As the foregoing reflects, the minimum permitted setback variance that is allowed by ordinance in all likelihood will become the standard for operators, thereby ensuring that every operator will request a setback variance down to (or close to) 500 feet.

5. The foregoing is one reason why in July 2011 the Town of Flower Mound decreased the setback variance distance. Instead of a minimum setback

[away],” the report said. “Benzene is the major contributor to lifetime excess cancer risk from both scenarios.” University of Colorado Denver News Release, “Study Shows Air Emissions Near Fracking Sites May Pose Health Risk,” dated March 19, 2012, quoting Lisa McKenzie, lead author. The news release is found at <http://www.ucdenver.edu/about/newsroom/newsreleases/Pages/health-impacts-of-fracking-emissions.aspx>.

³ Information provided by the Town of Flower Mound Environmental Services Division.

variance of 500 or 300 feet (depending upon ownership of a mineral interest), the most a setback can be reduced is 25%.⁴

6. The impact of gas drilling on residential property values should also be considered in determining appropriate setbacks. Although there is no data for the City of Dallas since no drilling has yet occurred inside the City, in August 2009 Integra Realty Resources (“Integra”) prepared for the Town of Flower Mound a Well Site Impact Study (“Study”). The objective of the Study was “to develop an opinion of the impact, if any, of the proximity of improved residential properties as a result of their proximity to natural gas well sites.” The Study concluded, in general, “that in the Flower Mound area, *when houses are immediately adjacent to well sites* there is a measurable impact of value. As distance from the well site increases, this affect quickly diminishes.” (Emphasis in original). The 2009 Integra Study further concluded that residential property with price points over \$250,000 and immediately adjacent to well sites can experience an impact from -3% to -14% in value based on the sales comparison method. Any influence on property values on a linear basis was found to dissipate at around 1,000 feet from the wellhead. The range in property value decline found in price-distance relationships was observed to be about -2% to -7%. Impact on housing prices by the price-distance method generally dissipated between 1,000 and 1,500 feet. This data suggests that gas drilling has an impact on nearby residential property values, and consequently, if through the variance process gas drilling is permitted closer to residential properties, the greater the potential for the reduction of property values.⁵

7. Pursuant to state law, zoning variances may only be approved by a 3/4 vote of the Zoning Board of Adjustment.⁶ Since the approval of gas drilling pad sites in Dallas will be through the specific use permitting process—a zoning process—it seems appropriate that there should be consistency between

⁴ Prior to July 2011, for homes with residents without a mineral interest, the setback was 1,000 feet with a minimum setback variance of 500 feet. For homes with residents with a mineral interest, the setback was 500 feet with a minimum setback variance of 300 feet [Flower Mound Code of Ordinances, § 34-422(d)(1)(b) and (c), (d)(3) (now repealed)].

⁵ A more detailed discussion of the Integra Study is on the Flower Mound website at pages 3 and 4 of the Flower Mound oil and gas ordinance, found at <http://www.flower-mound.com/index.aspx?NID=983>. A copy of the Integra Study may be obtained from the Town of Flower Mound.

⁶ See Section 211.009(c) of the Texas Local Government Code.

“traditional” zoning variances requiring a 3/4 vote and a gas drilling specific use process/variance request similarly requiring a 3/4 vote.

B. Drilling in the Floodplain

Task Force Recommendation: By a 5-4 vote, it was recommended that gas drilling be permitted in a floodplain, subject to City approval and where applicable, approval by the U.S. Army Corps of Engineers.⁷

Balanced Approach Recommendation: **Prohibit all gas drilling activities in any floodplain areas.**

Rationale supporting Balanced Approach Recommendation:

1. Numerous cities in the Metroplex have prohibited gas drilling and operations in any floodplain areas. This is for a simple reason—when significant rainfall occurs, floodplains by definition are subject to flooding, and any gas drilling- or production-related equipment (particularly tanks containing undisclosed hydraulic fracturing chemicals, produced water or condensate) that is inundated by floodwaters may create significant health and safety risks, threatening water quality and aquatic life.

2. Near the conclusion of the Task Force’s meetings, in February 2012 The University of Texas Energy Institute issued a report entitled “Fact Based Regulation for Environmental Protection in Shale Gas Development.” One of the key findings of that report was that surface spills and accidents involving toxic chemicals are more prevalent with hydraulic fracturing operations than in other aspects of gas production. Again, while it was not the charge of the Task Force to review and critique scientific studies on the topic, scientific findings such as this mandate caution.⁸

⁷ This recommendation is found at page 12 of the Recommendations Matrix dated March 1, 2012.

⁸ *Id.* at pp. 25-27. “The primary risk of uncontrolled releases is generally to surface water and groundwater resources. . . . Hydraulic fracturing chemicals in concentrated form (before mixing) at the surface present a more significant risk above ground than as a result of injection in the deep subsurface. . . . Effective containment is key to minimizing the impacts on human health and the environment when a spill occurs. The more toxic the release is, the higher the risk if containment is not effective to prevent migration into exposure pathways

3. Those individuals either residing or owning property downstream of gas drilling facilities located in the floodplain may face serious environmental and other physical damages in the event of a flood inundating gas wells and related equipment.

4. In those areas of Dallas where gas drilling currently is feasible, the major floodplain area would be along the Trinity River corridor.

5. Although Dallas' existing development regulations presumably would permit either an electrical substation or a sanitary landfill to be located in the floodplain,⁹ a flood event that overwhelmed a gas drilling pad site may result in the introduction of extremely hazardous chemicals into a river, stream or other water channel. Further, it seems somewhat disingenuous to contend that because several existing permitted uses in floodplain areas are somewhat questionable or potentially dangerous, any other potentially dangerous use of property should be permitted as a matter of right.

6. Due to exemptions from several federal laws relative to the disclosure of hydraulic fracturing chemicals, gas drilling operations in the flood plain simply are treated differently from landfills and substations. Due to the different legal status accorded to hydraulic fracturing, comparing gas drilling to other land uses that are not accorded such legal status is neither appropriate nor justifies location of gas drilling operations in the flood plain.

C. Drilling in Public Parks

Task Force Recommendation: By an 8-3 vote, it was recommended that gas drilling be permitted in public parks if (i) the park is not currently being used as a public park or playground; (ii) the park is located adjacent to an industrial use; (iii) the pad site is as close as practicable to the perimeter of the park; (iv) the parkland is not an environmentally sensitive area; (v) a portion of the revenue generated will go to a park property fund for Dallas Parks and Recreation; and

that are linked through surface water or groundwater to humans, animals, or other receptors. . . . Little information is available on the short- or long-term consequences of surface spills. Regulatory reports on spill investigations do not necessarily include information that would allow evaluation of environmental damage or the effectiveness of remedial responses.”

⁹ Dallas Code of Ordinances, § 51A-5.104(a)(2) and (3), respectively.

(vi) a specific use permit for such drilling must be approved by 3/4 of the City Council.¹⁰

Balanced Approach Recommendation: Prohibit all gas drilling activities in any public park.¹¹

Rationale supporting Balanced Approach Recommendation:

1. Public parkland is a very valuable commodity, regardless how the parkland currently is used or where it is located in the City. The use of parkland for gas drilling removes that land from the City's inventory of parkland, thereby permitting an industrial use of park property. Additionally, the cost of acquiring future parkland can be prohibitively expensive and time-consuming, especially if eminent domain procedures are utilized, and to willingly give away such parkland for gas drilling purposes may be seen by many Dallas residents as short-sighted.

2. Although there exists park property in the City of Dallas that may not resemble traditional park uses, the land's designation as a park is for a purpose—the enjoyment of the park by the public. Passive parks are just as important as traditional parks and public playgrounds. Consequently, the removal of passive park areas results in the loss of parkland.

3. Passive park areas may become active park areas in the future; however, once a site has gas drilling activities and operations on it, that area effectively is lost as a public park area for years, if not decades.

4. The traditional purpose of public parks, in part, is to allow citizens to escape urban activities and to enjoy open space and nature. Regardless of the designation of park property as either active or passive uses, gas drilling activities and operations remove that area (and the area immediately surrounding the location of such gas drilling) from any effective use as a park.

5. Parkland may one day become subject to park uses not contemplated today. For example, 30 years ago, many would not contemplate

¹⁰ This recommendation is found at page 12 of the Recommendations Matrix dated March 1, 2012. Dr. Alvarez voted with the majority on this item and is not part of this recommendation.

¹¹ Relative to the Task Force's discussion of this recommendation, an issue has arisen whether there is a legal distinction between a "park" and "parkland." To the best of the members' knowledge, there exists no legal distinction between these two terms and they are interchangeable.

municipal dog parks, in-line skating facilities, outdoor amphitheaters, or other contemporary and innovative uses of park property. It would not be surprising if future uses of park property would “fit in” perfectly in those park areas where gas drilling may occur.

6. Even though there exists scholarly debate whether gas drilling impacts public health, it is certainly conceivable that gas drilling in public parks may impact public usage of those parks and perhaps pose serious health and safety concerns for those who do use such parks. No other industrial uses are permitted in City parks.

7. It is ironic that in certain instances gas drilling may be permitted in a public park; however, at the same time gas drilling will not be permitted within 1,000 feet of a public park since public parks are deemed a “protected use” for setback requirements.¹² Consequently, while creating and protecting a 1,000-foot buffer around parks where gas drilling may not occur, gas drilling will be allowed in the park itself.

8. During the Task Force’s discussion of this recommendation, reference was made to stringent requirements under state law for park property to be leased for gas drilling purposes. Chapter 26 of the Texas Parks and Wildlife Code addresses the use or taking of a park or recreation area, along with certain other uses, and simply mandates notice and a public hearing and thereafter certain findings of a governmental body prior to leasing the property. This procedure is not rigorous.

9. If the Task Force’s recommendation ultimately is approved, then perhaps a seventh provision should be added—the property should be removed from the City’s inventory of park property before any drilling occurs.

¹² The recommendation that public parks be deemed a protected use is found at page 15 of the Recommendations Matrix dated March 1, 2012.

Conclusion

With considerable questions existing about both the safety and health effects of gas drilling and operations, it is the recommendation of the Task Force members listed on page 1 of this Report that caution be utilized when considering drilling in public parks, drilling in the floodplain, and the reduction of setback variances down to 500 feet. If our concerns are later determined to be without merit, then the gas drilling ordinance may simply be amended; however, if gas drilling has occurred, pad sites dot the western portions of Dallas and studies have verified safety and health concerns associated with gas drilling, then it simply will be too late to respond.