

Town Council Meeting November 2, 2009

Seismic Operations

Seismic Operations

- The Town's regulations require seismic operators to provide the following information:
 - Notification seven business days prior to commencing work
 - The location, date, and time of the survey
 - Survey method being used
 - Date and time of survey completion
- These requirements apply to the regulation of these activities on any property in Town, but do not imply permission to conduct these activities on Town property without Town consent.
- The Town has the same property rights as any landowner relative to allowing seismic operations in the right-of-way.

Seismic Operations

- The prevalent method being used in the area for seismic surveys is vibroseis conducted by vibration trucks of varying weight (typical gross weight is ~ 60,000 pounds).
- The trucks are equipped with plates that vibrate on the ground or surface.
- The vibroseis method delivers energy signals or seismic waves into the subsurface formation to obtain data recorded by surface receivers.

Seismic Operations

- Staff has received requests to conduct vibroseis on the Town's roads.
- The requests have been denied due to the concern for potential damage to the roads and adjacent infrastructure that could shorten the life of the Town's infrastructure.
- The pavement cross-section of many older asphalt roads in Town is unknown.
- The Town has an estimated \$450 million asset in its roadway infrastructure to replace in the next 20+ years; ¼-cent dedicated sales tax approved to address this need.

Vibroseis Truck



Is Street Maintenance in Flower Mound Under-funded?

- Short answer is it appears so, based upon several comparisons:
 - The GASB 34 2006 reported depreciation of Town streets of \$9,738,434
 - Town's 2006 annual street maintenance budget was \$685,444
 - Depreciation to Expenditure ratio of 14:1

Is Street Maintenance in Flower Mound Under-funded?

- Short answer is it appears so, based upon several comparisons:
 - The GASB 34 2008 reported depreciation of Town streets of \$10,498,476
 - Town's 2008 annual street maintenance budget was \$3,368,828
 - Depreciation to Expenditure ratio of over 3:1

Street Maintenance

- Over the next 20 years, assuming a 5% annual sales tax growth rate, estimated funding for street maintenance will be \$67.5 million.
- The Town's roadways represent a \$450 million dollar asset to be replaced within the next 20 years.
- Street maintenance may be underfunded by approximately \$380 million.

Seismic Operations



\$450 Million Asset

- Replacement cost?
- Indemnification?
- Neighbors waive liability?
- Require insurance limit?

Seismic Operations - Risk Management

- Seismic testing agreement drafted to provide the following:
 - Company shall designate the streets and locations involved for a specific operation
 - Company shall pay the Town the useful life replacement cost for the designated streets and other infrastructure
 - Payment shall be received prior to testing
 - Company will indemnify the Town against all claims and damages
 - Waivers of Town liability from impacted lessors and landowners shall be provided to the Town prior to testing
 - Company shall provide the Town with proof of sufficient insurance coverage

Seismic Operations – Model Agreement

- The model seismic testing agreement provides for additional standards and requirements such as notification, testing times, signage, and requirements for Town traffic support.
- The waiver provision within the agreement includes distance or setback criteria.
 - Establishing a distance requirement such as 300' from the vibration point source is included in the agreement – staff can continue to review options for an appropriate radius.

Relative Benefit of Seismic Testing on Town Roads



As Proposed



With Agreement

Seismic Operations – Draft Agreements

Flower Mound Requirements	Seismic Operator
Specific location designation	Testing allowed in general leased area; no time limit
Payment of useful life replacement costs	Dollar amounts not indicated
Payment received prior to testing	Payment to be submitted prior to testing
Town indemnified against claims and damages	Requests Town to indemnify operator (Unconstitutional under Texas law)
Waivers signed by impacted landowners	Not addressed
Proof of insurance	Not addressed

Barnett Shale Exploration and Drilling - Economic Impact

- Oil and gas taxable market value for FY 09-10 was \$23,537,150.
- Per the DCAD oil and gas appraiser there were 26 active or completed wells as of January 1, 2009.
- Flower Mound oil and gas property taxes for FY 09-10 equated to \$105,846 (\$4,071 per well).
- LISD has taxable value of mineral property for FY 09-10 of \$17,417,320 = \$245,357 in property taxes.

Barnett Shale Exploration and Drilling - Economic Impact

- Taxable values of gas wells can be volatile from year to year due to:
 - changes in natural gas prices;
 - discounted cash flow factor used in the appraisal process that is set annually by the State Comptroller;
 - significant declines in production that occur during the first few years.

Barnett Shale Exploration and Drilling - Economic Impact

● Additional economic impacts to the region and state include:

- A 2009 economic report noted the Barnett Shale contributed more than \$11 billion to the North Texas economy and generated 111,131 permanent jobs in 2008; projections for 2009 show a contribution of \$6.5 billion in output and just under 70,000 jobs.*
- State taxes generated from the regional drilling and production is reported at \$715.5 million for 2008.*
- Leasing bonuses and royalties have also impacted the economy of the region.

*Source: The Perryman Group 2009 report

Survey Cities

- Staff conducted a survey of the established survey “sister” cities for seismic testing on streets/roads.
- The established survey city list is utilized based on numerous factors such as demographics, growth, proximity, cities we “compete” with, etc.
- Surveys by staff of cities outside of the established list are not conducted to avoid receiving pre-determined results or “picking” cities to survey.
- Upon direction, staff can contact and survey alternate cities with similar concerns.

Seismic Testing on Town/City Streets

City	Seismic Street Testing	"Barnett Shale City"
Allen	No	No
Carrollton	No	No
Colleyville	No	Yes
Coppell	No	Yes
Denton	Yes	Yes
Frisco	No	No
Grapevine	No	Yes
Irving	No	Yes
Lewisville	No	Yes
McKinney	No	No
N. Richland Hills	No	Yes
Plano	No	No
Richardson	No	No
Rowlett	No	No
Southlake	Yes	Yes

Additional Surveyed Cities – Street Testing

City	Street Seismic Testing Allowed Yes/No (Comments)
Argyle	No current policy (No requests have been made to date)
Bartonville	Yes
Bedford	No
Blue Mound	Yet to be determined
Burleson	Yes
Cleburne	Yes (But not within 250 feet of water and sewer lines)
Decatur	No (No requests have been made to date)
Double Oak	Yes
Fort Worth	Yes
Haltom City	There are no restrictions regarding city streets
Highland Village	No policy has been established
Hurst	No
Keller	No policy has been established (No requests have been made to date)
Northlake	No
Ponder	Yes
Richland Hills	No restrictions
Roanoke	No (No requests have been made to date)
Saginaw	Yes
Weatherford	Yes

Additional Survey Information

- 2009 is the first year Denton will be allowing seismic operations to be conducted on their roads.
- Southlake does not prohibit operations on their roads, but there has been no activity conducted or requests made; they currently do not have regulations in place.
- Based on the recent nature of the seismic requests in the area, there are not standards in place and many of the affected municipalities are either working on regulations or are developing ROW maintenance or indemnification agreements.
- Common issues identified by municipalities include unknown road conditions, unknown impact of vibration equipment on paved surfaces, establishing controls for the testing, establishing insurance or damage agreements, and the desire to conduct additional research.

Vehicle Comparison

● Vibroseis Truck

- 30,000 to 60,000 lbs; 34" wide tires for the large truck

● Garbage Truck

- ~ 50,000 lbs - with a load; 8 -10" wide tires

● Standard Semi

- 16,000 to 20,000 lbs – varies with cargo; 10 – 12" wide tires

● Fire Truck

- 28,000 to 56,000 lbs – varies with water load; 9 - 11" wide tires

● Cement Truck – with a load

- 66,000 lbs; 10 – 12" wide tires

Vehicle Comparison – Potential Impact to Town Roads

- While the weights of the vehicles may be somewhat comparable, the primary issue is the vibration of the testing vehicles; not large vehicles driving on the Town's roads.
- A recent pavement analysis/study submitted to the Town did not address the pavement impact of a vibration source as created by vibroseis testing.

Other Items

- The Town assumes no liability for operations and testing conducted on privately-owned roads located within the Town.
- Process for public roads becoming private:
 - All current property owners would need to agree to the change and accept ongoing maintenance
 - A HOA would need to amend its documents to include ownership and maintenance
 - Town Council would need to approve the change and could assess fees

Discussion / Questions

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