

# Town Council Work Session October 15, 2009

## Seismic Operations

# Seismic Operations

- General history and assessment of seismic operations.



# 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 current annual street maintenance budget is \$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 current annual street maintenance budget is \$3,368,828
- Depreciation to Expenditure ratio of over 3:1

# 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.
- Vibroseis is 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 several 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; 1/4-cent dedicated sales tax approved to address this need.
- Staff has asked for technical research to support the assertion that vibroseis testing on paved surfaces will result in no damage; research specific to the impacts of vibroseis conducted on roads has not been provided.

# Seismic Operations



# Seismic Operations



- 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.

# 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
Waivers signed by impacted landowners	Not addressed
Proof of insurance	Not addressed

# Risks and Benefits With Agreement



# Barnett Shale Exploration and Drilling - Economic Impact

- Oil and gas taxable market value for FY 2009-10 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).

# 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 include:

- Regional lease bonus payments and royalty interests for individuals, school districts, and local government
- Short and long-term employment opportunities for the region
- Community support through contributions to local organizations and schools

# Seismic Testing on Town/City Streets

City	Seismic Testing Yes/No (comments)
Allen	No (No requests have been made at this time.)
Carrollton	No
Colleyville	No
Coppell	No (Must get ROW Use Permit.)
Denton	Yes ( Requires a Geophysical Survey License.)
Frisco	No (They are considering it.)
Grapevine	No
Irving	No
Lewisville	No
McKinney	No
North Richland Hills	No
Plano	No (No requests have been made at this time.)
Richardson	No
Rowlett	No
Southlake	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 don't 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