

OHIO SHALE DEVELOPMENT COMMUNITY IMPACT SURVEY



PRIMARY FINDINGS FROM THE 2013 SURVEY



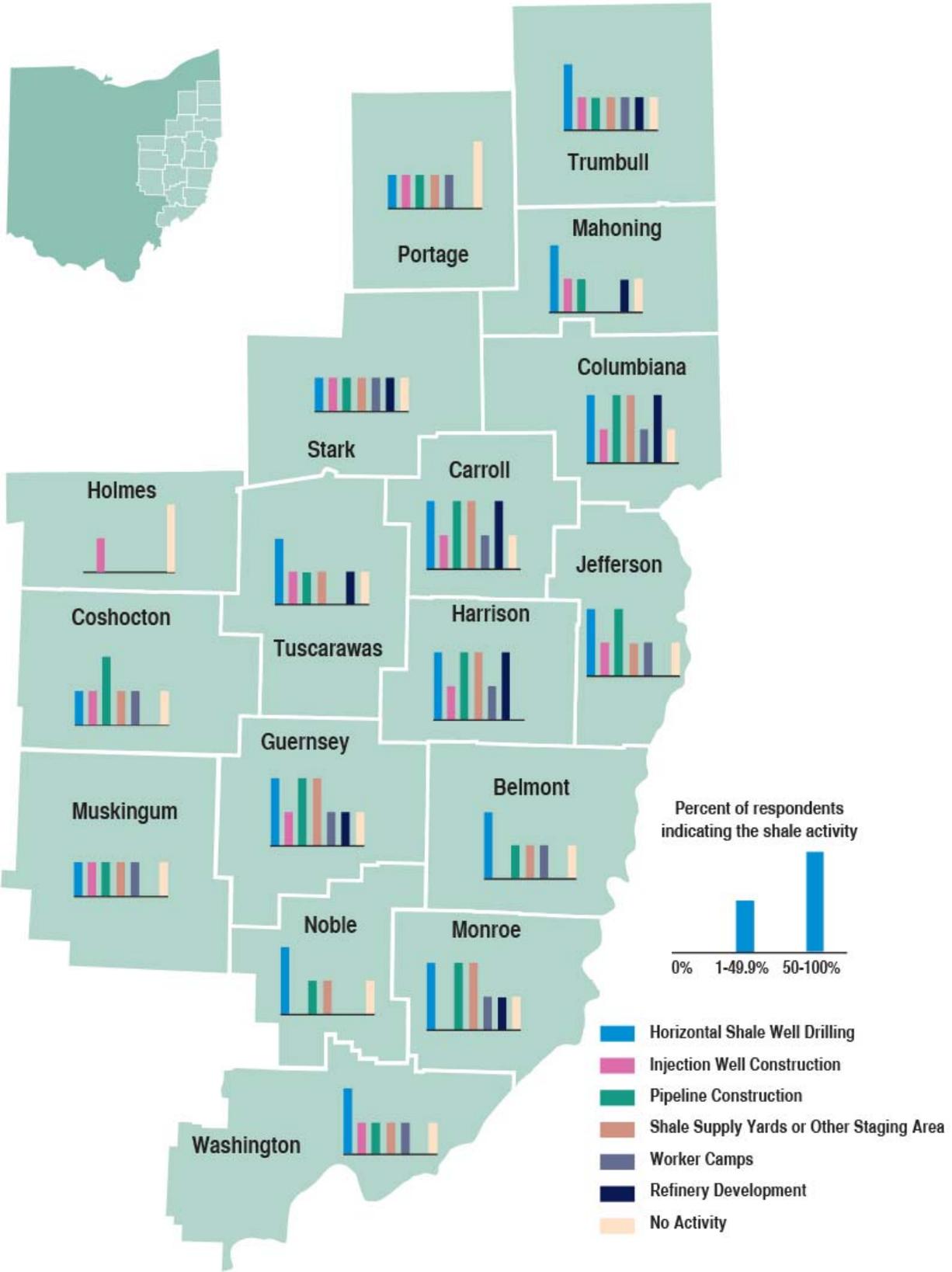
OHIO
UNIVERSITY

Voinovich School of
Leadership and Public Affairs

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**For more information on the survey instrument, methodology, or how to join
Ohio University's Voinovich School of Leadership and Public Affairs
with ongoing shale activity research, please visit**

<http://www.ohio.edu/ce3/research/shale/shaleimpactsurvey.cfm>



OHIO SHALE DEVELOPMENT COMMUNITY IMPACT SURVEY

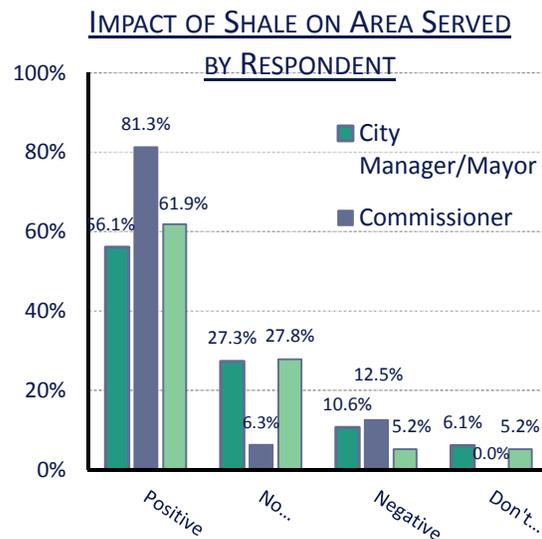
PRIMARY FINDINGS FROM THE 2013 SURVEY

The Shale Development Community Impact Survey captured shale activity in 17 counties (see map). Three types of local officials (N=227) were asked to “indicate the impact shale development has had” on the area they serve. A total of 36 respondents were eliminated from **all** data because they did not indicate which shale activities were occurring in their area, leaving 66 Mayors and City Managers (34.6% of all respondents), who answered for their city or village; 16 County Commissioners (8.4% of all respondents), who provided answers for their county; and 109 Township Trustees (57.1% of all respondents), who responded for their township. Of the 191 remaining respondents, 99 reported two or more ongoing shale development activities in their service area, while 56 indicated no activity in their service area.

Survey results were analyzed in three ways: 1) By the type of **shale development activity** reported to be taking place (horizontal shale well drilling, injection well construction, pipeline construction, shale supply yards/other staging areas, worker camps, refinery development, and no activity). In these analyses, respondents can be counted more than once, depending on how many activities they reported in their service area. 2) By respondent’s reported **local official** position (mayor/city manager, county commissioner, township trustee). 3) By **collapsing across all respondents**. In the last two types of analyses, respondents were counted only once.

In the current report, “moderate increase” and “significant increase” responses were combined. All charts, unless otherwise specified, depict the percent of respondents who reported an increase in their service area.

- According to the majority of local officials, the impact of shale activity has generally been positive.
- Across all local officials, 61.4% reported positive impacts, 25.7% reported that shale had resulted in no change to their service area, and only 7.8% indicated that the impact had been negative.



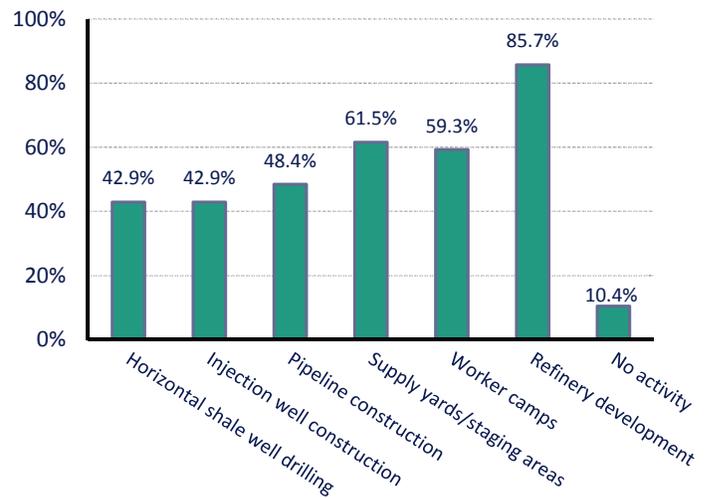
For full survey methodology, please visit <http://www.ohio.edu/ce3/research/shale/shaleimpactsurvey.cfm>

POPULATION, HOUSING, AND PUBLIC SAFETY

The impact of shale development was investigated to determine how population was influenced and the effect it has had on local housing and public safety.

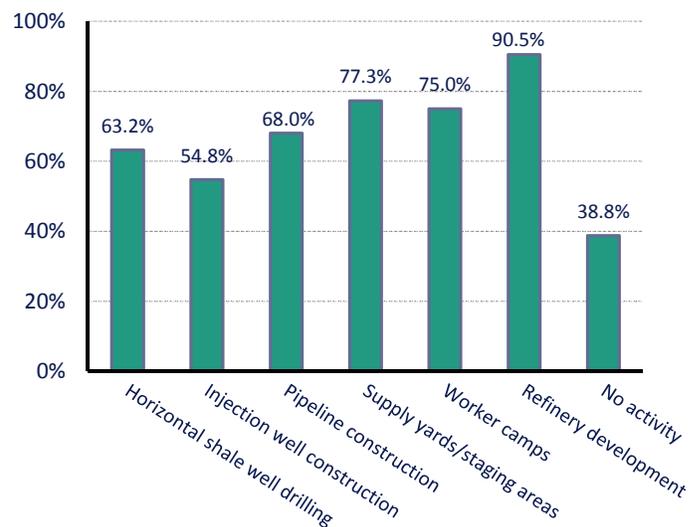
- Counties with shale activity of all kinds have seen increases in population.
- Among counties with reported shale activity, the percentage of respondents indicating a population increase related to shale development range from 42.9% (horizontal shale well drilling and injection well construction) to as high as 85.7% (refinery development).
- In counties without shale activity, more than ten percent (10.4%) of respondents report that population has increased due to shale development.

POPULATION



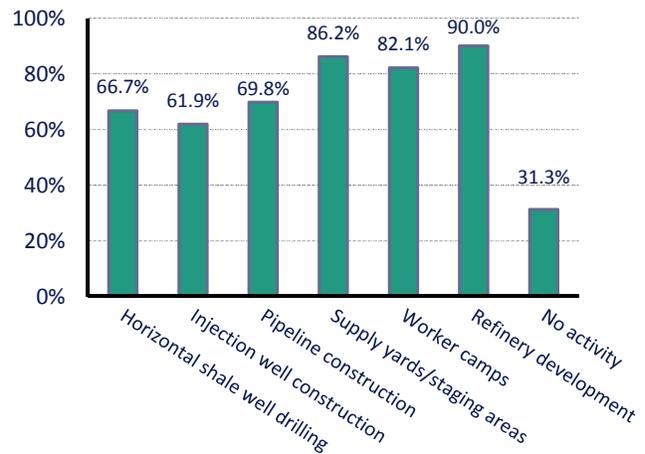
- The cost of property and land has been reported to be on the rise in counties with and without ongoing shale activity.
- Property and land costs have increased in counties with shale activity according to the majority of respondents, with 54.8% (injection well construction) to 90.5% (refinery development) of respondents reporting moderate or significant increases.
- More than a third (38.8%) of respondents in counties with no activity report that shale development has led to increases in property and land costs in their area.

PROPERTY/LAND COSTS



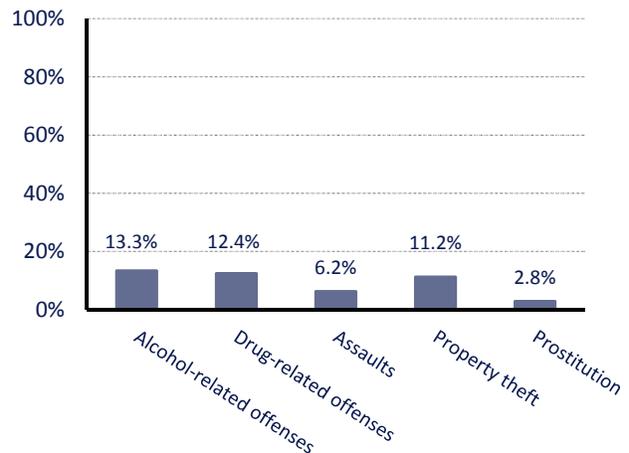
- In counties with shale activity, nearly two-thirds or more of respondents indicate an increase in housing rental costs due to the impact of shale development.
- The activity with the highest percentage (90.0%) of respondents indicating shale development has increased housing rental costs is refinery development.
- In counties with no activity, a considerable proportion of respondents (31.3%) report that shale development has increased housing rental costs.

HOUSING RENTAL COSTS



- Across all respondents, only a small percentage indicated the following crimes have increased due to shale development: alcohol-related offenses (13.3%), drug-related offenses (12.4%), assaults (6.2%), property theft (11.2%), and prostitution (2.8%).

PUBLIC SAFETY

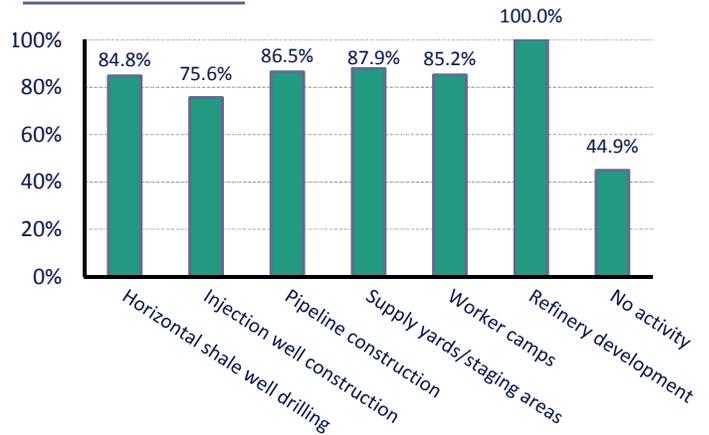


INFRASTRUCTURE AND ENVIRONMENT

The impact of shale development on local infrastructure and the environment was explored.

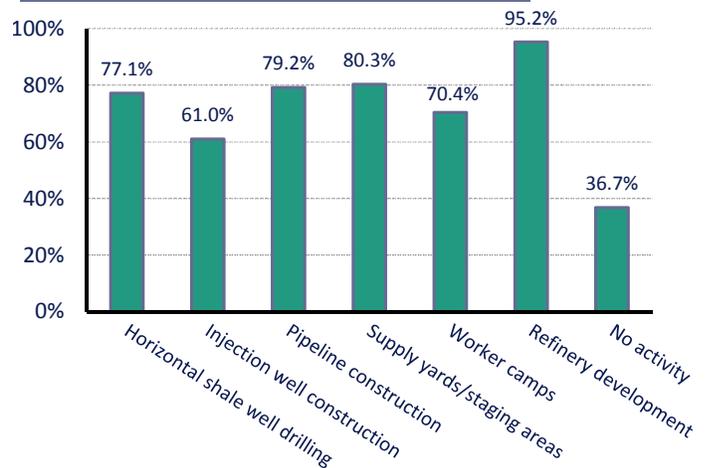
- In counties with ongoing shale development activities, the majority of respondents across activities, ranging from 75.6% (injection well construction) to 100% (refinery development), indicate shale development has increased traffic volume.
- Nearly half (44.9%) of respondents in counties with no shale development activities reported that shale development has increased traffic volume.

TRAFFIC VOLUME



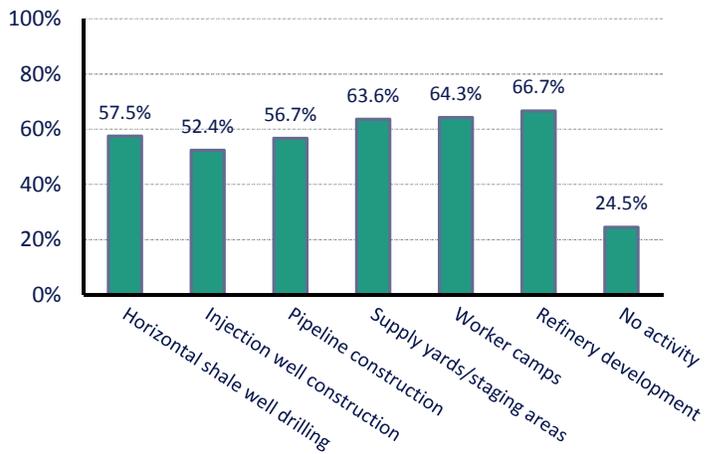
- Among counties with ongoing shale development activities, 61.0% (injection well construction) to 95.2% (refinery development) of respondents indicate a need for public road maintenance.
- In counties without ongoing shale development activities, over a third of respondents (36.7%) report a need for public road maintenance due to the impact of shale development.

NEED FOR PUBLIC ROAD MAINTENANCE



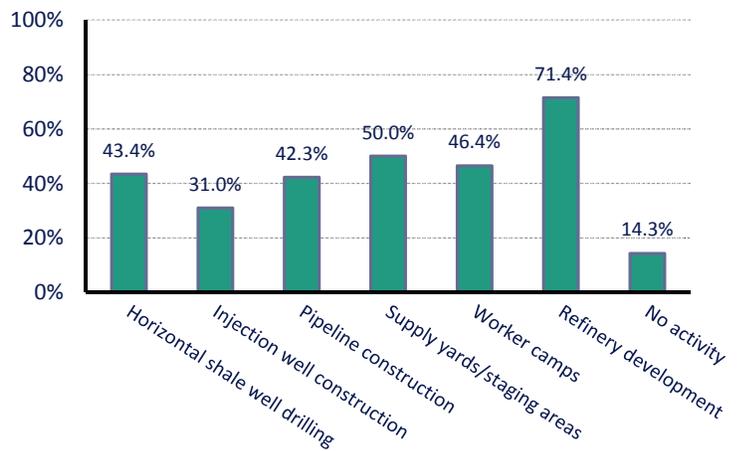
- In counties with ongoing shale development, more than half of respondents across all activities report shale development has increased the need for bridge maintenance and inspection.
- Nearly a quarter (24.5%) of respondents in counties with no shale activity indicated that shale development has increased the need for bridge maintenance and inspection.

BRIDGE MAINTENANCE/INSPECTION NEED



- In counties with some sort of ongoing shale development activity, nearly a third or more respondents report moderate or significant increases in noise pollution related to shale development.
- Reports of increased noise pollution were highest in counties with refinery development, with 71.4% of respondents reporting an increase.
- In counties with no reported activity, 14.3% of respondents indicated that shale development has increased noise pollution.

NOISE POLLUTION



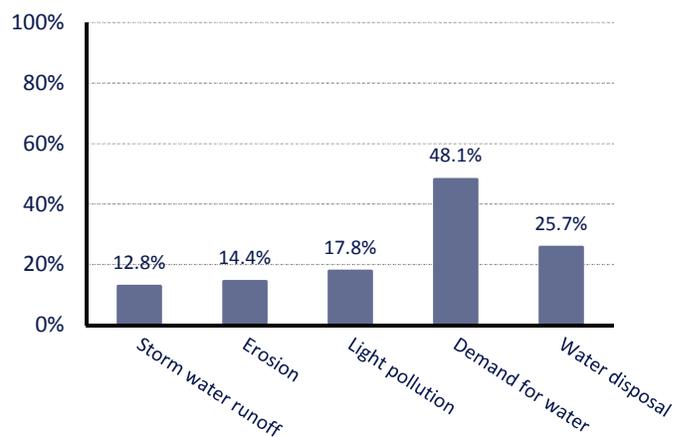
Respondents reporting refinery development in their area were more likely to report increased traffic volume, need for road and bridge maintenance, as well as increased noise pollution compared to any other shale development activity.

RUMAs

Road Use Maintenance Agreements (RUMA) are a contractual agreement between a shale company and a local governing body stating that the company will take on maintenance, repair, and potential upgrading of specified bridges and roadways¹. When asked, more than half (61.4%) of county commissioners and township trustees indicated that RUMA agreements had been signed in their service area.

- Overall, reports of environmental harm have been limited. Across all respondents, some (12.8%) report an increase in storm water runoff. A similar percentage of respondents (14.4%) indicate that shale development has increased erosion. Some respondents (17.8%) also indicate that light pollution has increased due to shale development, with the majority of these reports coming from respondents in areas with ongoing horizontal shale well drilling, pipeline construction, and shale supply yards or other shipping areas.
- Respondents also report that shale development has increased the demand for water (48.1%) and water disposal (25.7%) to a considerable degree.

ENVIRONMENTAL IMPACTS



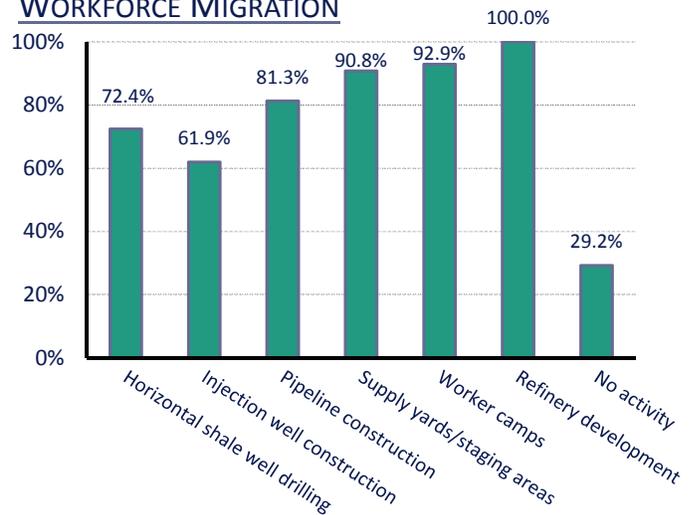
¹ http://www.ceao.org/aws/CEAO/pt/sp/layout_details?get_content_from_session=1&suppress_tcshare=1

LOCAL EMPLOYMENT AND BUSINESS ACTIVITY

The impact of shale development on local employment and existing businesses was investigated. Across all respondents, the majority (57.5%) indicated that employment of area residents has increased due to shale development.

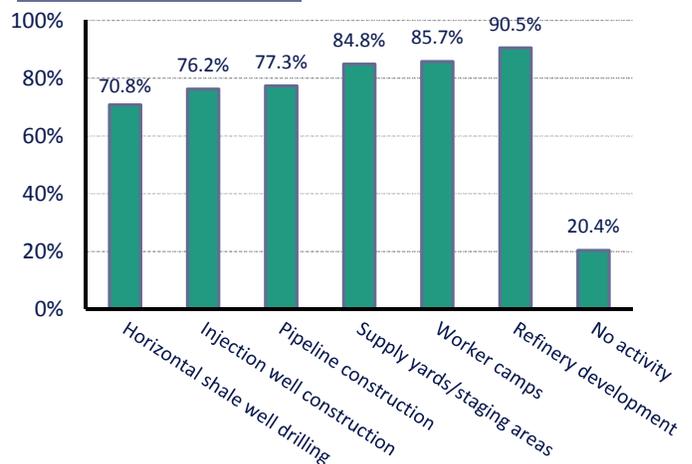
- Workforce migration increased due to shale development in counties with and without reported shale activity.
- An increase of workforce migration due to shale development was reported by all (100%) of respondents in counties with refinery development, and nearly all respondents in counties with worker camps (92.9%) and supply yards/staging areas (90.8%).
- Over a quarter (29.2%) of respondents with no activity in their area reported an increase of workforce migration related to shale development.

WORKFORCE MIGRATION



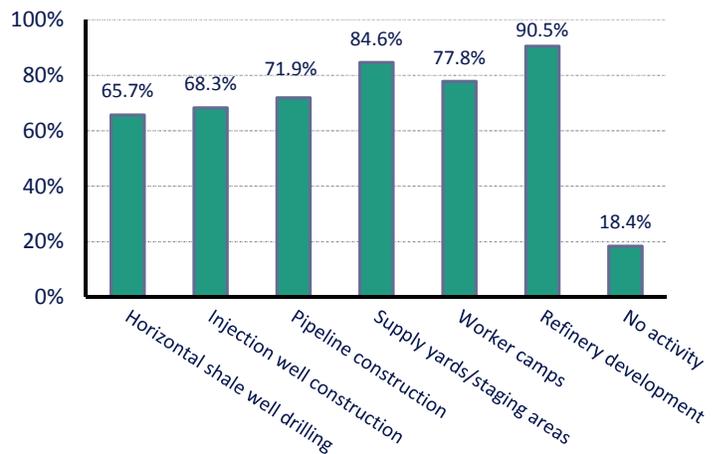
- In counties with reported shale activity, the range of respondents who indicated an increase in restaurant activity related to shale development was 70.8% (horizontal shale well drilling) to 90.5% (refinery development).
- One fifth (20.4%) of respondents in counties with no activity report an increase in restaurant activity due to the impact of shale development.

RESTAURANT ACTIVITY



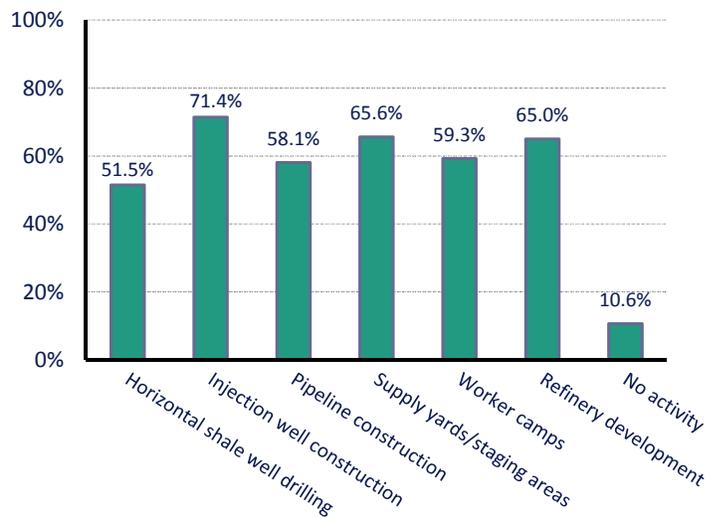
- Among counties with ongoing shale activity, the percentage of respondents indicating an increase in other retail activities ranged from 65.7% (horizontal shale well drilling) to 90.5% (refinery development).
- In counties with no activity, nearly a fifth (18.4%) of respondents reported an increase in other retail activity due to shale development.

OTHER RETAIL ACTIVITY



- Hotel occupancy has increased in counties with shale activity, according to the majority of respondents in counties with some sort of ongoing shale development.
- In counties with horizontal shale well drilling, 51.5% of respondents report an increase in hotel occupancy due to the impact of shale development. In counties with injection well construction, increases in hotel occupancy was reported by 71.4% of respondents.
- In counties with no activity, 10.6% of respondents indicate an increase in hotel occupancy due to shale development.

HOTEL OCCUPANCY

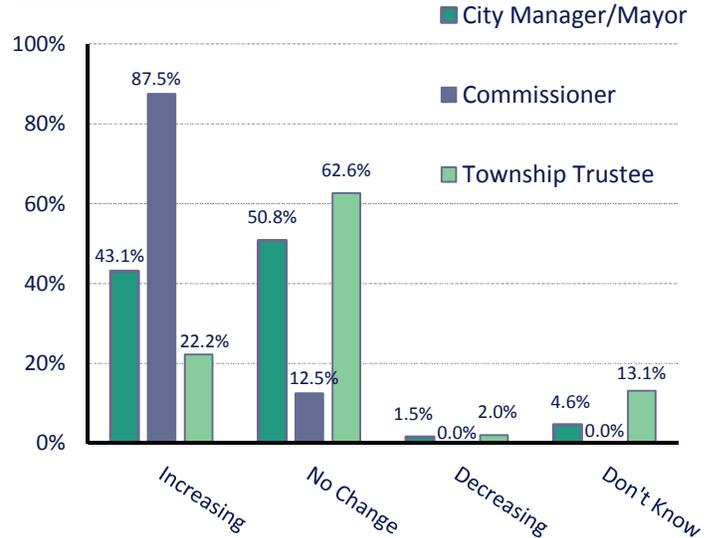


ECONOMIC DEVELOPMENT

Local officials – city managers and mayors, county commissioners and township trustees – reported that the influence of shale development on local economic growth was primarily positive.

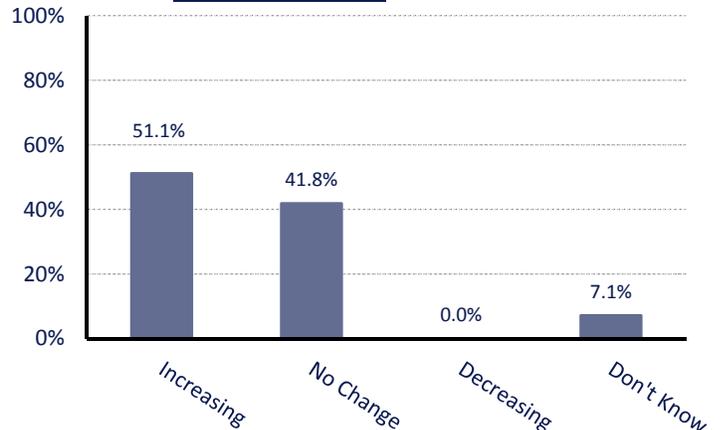
- Across all local officials, only 35.6% indicated that local tax revenues had increased due to the impact of shale activity. However, considerable differences were seen between the types of local officials.
- Nearly half (43.1%) of city managers and mayors reported an increase in tax revenue. The majority (87.5%) of county commissioners reported an increase in tax revenues, while only 22.2% of township trustees indicated shale development had increased tax revenues.
- Local tax revenue is the only economic survey item where major differences were seen among the local official positions.²

LOCAL TAX REVENUES



- Collapsing across respondent positions, the majority of respondents (51.1%) indicated that shale development had led to an increase in the development of businesses that serve the shale industry.
- The remainder of respondents reported that either no change had occurred in the development of businesses serving the shale industry or that they did not know.

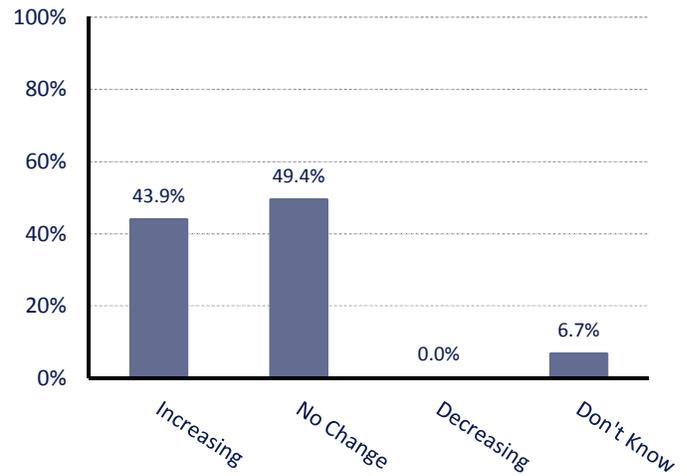
DEVELOPMENT OF BUSINESSES SERVING SHALE INDUSTRY



² This study did not differentiate between different sources of taxation amongst various levels of government.

- Nearly half of all respondents (43.9%) reported that the demand for commercial and industrial space has increased due to the impact of shale development activities.
- A similar proportion of respondents (49.4%) reported that the demand for commercial and industrial space had not changed.
- Among the different shale activities, the range of respondents indicating an increase in the need for commercial space fell between 85.7% (refinery development) and 57.1% (injection well construction).

COMMERCIAL/INDUSTRIAL SPACE DEMAND



- More than a quarter (27.5%) of all respondents reported that there has been an increase in hotel construction due to the impact of shale development.
- The majority of respondents (65.2%) indicated that no change has occurred in hotel construction.

HOTEL CONSTRUCTION

