Lead-Based Paint Hazards

Findings / Health and Well-being

Lead is known to be highly toxic particularly to young children 5 years of age and under. Excessive exposure results in reduced intelligence, impaired hearing, reduced stature and a host of other negative health effects. It is well documented that a common source of lead exposure for children is lead-based paint in older housing along with the dust and soil it generates. Children are exposed to lead-based paint most commonly by directly eating paint chips or indirectly by ingesting lead-contaminated house dust or soil through normal hand-to-mouth contact.

For purposes of this analysis, the federal definition of “lead-based paint hazard” at 24 CFR Part 35.86 was applied. Under this definition, lead-based paint hazard is defined as, “...any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, or lead-contaminated paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects as established by the appropriate Federal agency.”

It is noteworthy estimates presented can only be stated as dwellings that “potentially” have LBP hazards because there are no real-time surveys or studies of residential structures built prior to 1978. However, there have been previous estimations provided in the state’s Consolidated Plan.

Statewide Findings

Using methodology which will be discussed later in this section, we have estimated the number of housing units in Oklahoma with lead-based paint hazards as defined in 24 CFR Part 35.86. Our estimates are shown in the following table.

<table>
<thead>
<tr>
<th>Lead-Based Paint Hazards in Oklahoma</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Housing Units</td>
<td>1,432,730</td>
<td></td>
</tr>
<tr>
<td>Total Housing Units with Lead-Based Paint Hazards</td>
<td>240,229</td>
<td>16.8%</td>
</tr>
<tr>
<td>Owner-Occupied Units w/LBP Hazards</td>
<td>159,861</td>
<td>66.5%</td>
</tr>
<tr>
<td>Renter-Occupied Units w/LBP Hazards</td>
<td>80,368</td>
<td>33.5%</td>
</tr>
<tr>
<td>Housing Units w/LBP Hazards Occupied by Low-to-Moderate Income Households</td>
<td>113,931</td>
<td>47.4%</td>
</tr>
<tr>
<td>Housing Units w/LBP Hazards with Children &lt; 6 Years of Age Present</td>
<td>37,426</td>
<td>15.6%</td>
</tr>
<tr>
<td>Housing Units w/LBP Hazards Occupied by LMI Households and Children &lt; 6 Years of Age Present</td>
<td>19,761</td>
<td>52.8%</td>
</tr>
</tbody>
</table>

Sources: American Healthy Homes Survey Table 5-1 & CHAS Tables 12 & 13

As shown, we estimate that there are 240,229 housing units in Oklahoma containing lead-based paint hazards, representing 16.8% of Oklahoma’s total housing stock. 66.5% of those units are owner-occupied, while 33.5% are renter-occupied. Of the 240,229 housing units containing lead-based paint hazards, 113,931 units, or 47.4%, are occupied by households with low-to-moderate incomes as defined by HUD. Among all housing units with lead-based paint hazards, 37,426 units have children under the age of six present, and 52.8% of those units, or 19,761 units total, are households with low-to-moderate incomes. Exhibits 2 through 6, found at the end of this section, graphically summarize our statewide findings at a county level.

Tulsa County
**Disaster Resiliency/ Economy and Society, Infrastructure and Environment**

While communities strive to address lead-based paint hazards through education and removal when detected in connection with federally funded local housing rehabilitation initiatives, hazard detection and mitigation may have special considerations in terms of disaster resiliency.

Many disasters are accompanied by widespread damage to residential structures often times scattering building material debris across the landscape necessitating removal by heavy equipment and disposal in landfills. When building materials contaminated with lead-based paint become part of non-contaminated debris disposal, it presents an environmental hazard that can span well beyond recovery and rebuilding efforts.

**Leadership and Strategy**

Given the albeit large but finite number of potential housing units with lead hazards, the state and local communities may wish to consider initiatives aimed at reducing and/or eventually eliminating residential lead-based paint hazards, particularly in housing occupied by low and moderate income households with young children present. One such initiative could be the use of the state’s various federal and state housing programs’ competitive funding selection criteria. By designing rating criteria that specifically awards points to applicants that purposefully seek out properties within counties known to have higher percentages of lead hazards, housing developers along with those engaged in rehabilitation may be incentivized to engage in hazard mitigation.

State and local governments may wish to capitalize on the results of this study by using the data to support competitive applications to the Federal Home Loan Bank Topeka’s Affordable Housing Program funding for owner occupied rehabilitation which, among other competitive rating criteria, awards points for the “Abatement of Hazardous Environmental Conditions”. Similarly, this report’s data may be used to document hazards and need in applications for competitive health care grants offered at the federal level.

Similar to initiatives undertaken by USHUD, the state may want to consider undertaking a real-time sample survey of homes built prior to 1978 across the state’s community sizes and counties to more accurately ascertain the extent of the hazard and/or conducting real-time surveys of LBP Risk Assessors licensed by the ODEQ.

**Survey of Previous Lead-based Paint Studies**

Using a combination of US Census Bureau and US Department of Housing and Urban Development Comprehensive Housing Affordability Strategy data and age of housing stock built prior to 1980, the Oklahoma Department of Commerce’s, “State of Oklahoma Five-Year E-Consolidated Plan FY 2014 – 2018” estimated 59% of the owner occupied and 65% of the renter occupied housing had the potential of containing lead-based paint. To address lead paint hazards, the Consolidated Plan recommended assessment of hazard presence be conducted at the point dwelling rehabilitation is undertaken and that nonprofits advise persons receiving federal rehabilitating assistance regarding the dangers of lead exposure.

At the national level, between 1998 and 2000, USHUD Office of Health Homes and Lead Hazard Control staff and the National Institute of Environmental Health Sciences conducted a real-time
random sampling of 831 permanently occupied housing units (multifamily, single family and mobile homes) taken from all 50 states and the District of Columbia. The results indicated an estimated 38 million (39% of the 96 million total housing units) of the nation’s housing units had lead-based paint hazards. Of that total, 24 million had significant lead hazards with 1.2 million of those units occupied by low income families. It was further estimate that 35% of all low income housing had lead-based paint hazards. The study also noted the prevalence of lead-based paint increases with age of housing. However, most painted surfaces, even in older homes don’t have lead paint. Geography was found to be related to the incidence of lead-based paint with the Northeast and Midwest having 2 times the prevalence of lead paint than the South and West. Finally, the study recommends “public-private sector resources be directed units posing the greatest risk” as a preventive measure to avoid lead poisoning.

In April 2011, the U.S. Department of Housing and Urban Development, Office of Healthy Homes and Lead Hazard Control updated its 1998-2000 nationwide report in its publication, “American Healthy Homes Survey, Lead and Arsenic Findings”. This report, conducted from June 2005 through March 2006, estimated 37.1 million homes (34.9%) out of a total of 106 million total housing units have lead-based paint somewhere in the building. Of the 65.6 million homes built before 1978, 34.4 million (52%) have lead-based paint. The study reaffirmed the previous finding that the prevalence of lead-based paint is higher in the Northeast and Midwest parts of the United States than South and West. It also confirmed earlier finding that the incidence of lead-based paint increases with age of housing with 86% of the homes built prior to 1940 containing lead. An estimated 3.6 million homes with children less than 6 years of age have lead-based paint hazards of which 1.1 million are low income households. Of the 16.8 million homes with children under the age of 6, 5.7 million (34%) have lead-based paint, about the same incidence of lead-based paint in all homes.

In June 2006, the Oklahoma State Department of Health’s Childhood Lead Poisoning Prevention Program (OCLPPP) received a 5-year project grant “Oklahoma Childhood Lead Poisoning Prevention Program Focusing in High Risk Groups”. That program focused on communities evidencing high numbers of children 6-72 months of age who are at high risk for lead poisoning.

In order to more effectively target high-risk areas and populations, the OCLPPP identified 21 high-risk target area (HRTA) zip codes (see Exhibit #1) located within Oklahoma, Tulsa, Muskogee, Jackson, Okmulgee, Ottawa, Kay, Garfield, and Hughes counties. These 21 zip codes were narrowed from a list of 57 zip codes out of the state’s approximately 700 zip codes that with populations of 5,000 or more persons; greater than or equal to 22% of housing stock built prior to 1950; and, greater than or equal to 18% of children under the age of 6 years living below the poverty level.

The 57 zip codes were further compared and evaluated based on selected characteristics such as EBLL cases and proportion of minority population. Zip codes with higher EBLL prevalence and/or minority populations (Hispanic/African American/American Indian) were ranked higher and given the designation as HRTA zip codes.

**Tulsa County Findings**

The number of housing units in Tulsa County containing lead-based paint hazards can be estimated by applying the percentages of housing units with such hazards reported by the American Healthy Homes
Survey, to the number of occupied homes in Tulsa County, by year of construction. The following table presents the percentage of housing units in the Census Bureau South Region based on the AHHS findings.

<table>
<thead>
<tr>
<th>Year of Construction</th>
<th>No. of Housing Units (000s)</th>
<th>Units w/ LBP Hazards (000s)</th>
<th>Percent of Units w/ LBP Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978-2005</td>
<td>18,625</td>
<td>664</td>
<td>3.6%</td>
</tr>
<tr>
<td>1960-1977</td>
<td>11,724</td>
<td>1,311</td>
<td>11.2%</td>
</tr>
<tr>
<td>1940-1959</td>
<td>5,575</td>
<td>2,145</td>
<td>38.5%</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>3,072</td>
<td>1,947</td>
<td>63.4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38,996</strong></td>
<td><strong>6,067</strong></td>
<td><strong>15.6%</strong></td>
</tr>
</tbody>
</table>

Source: U.S. Dept. of Housing and Urban Development, American Healthy Homes Survey, Table 5-1

These percentages can then be applied to the number of housing units in Tulsa County, by year of construction and by tenure (owner-occupied versus renter-occupied), as reported by HUD’s Comprehensive Housing Affordability Strategy (CHAS) data for Tulsa County.

<table>
<thead>
<tr>
<th>Total Owner-Occupied Housing Units</th>
<th>Total Housing Units</th>
<th>Percent w/LBP Hazards</th>
<th>Number w/LBP Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978 or Later</td>
<td>65,893</td>
<td>3.57%</td>
<td>2,349</td>
</tr>
<tr>
<td>1960-1977</td>
<td>39,897</td>
<td>11.18%</td>
<td>4,461</td>
</tr>
<tr>
<td>1940-1959</td>
<td>31,915</td>
<td>38.48%</td>
<td>12,279</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>10,875</td>
<td>63.38%</td>
<td>6,892</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>148,580</strong></td>
<td><strong>17.49%</strong></td>
<td><strong>25,982</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Renter-Occupied Housing Units</th>
<th>Total Housing Units</th>
<th>Percent w/LBP Hazards</th>
<th>Number w/LBP Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1978 or Later</td>
<td>38,689</td>
<td>3.57%</td>
<td>1,379</td>
</tr>
<tr>
<td>1960-1977</td>
<td>32,031</td>
<td>11.18%</td>
<td>3,582</td>
</tr>
<tr>
<td>1940-1959</td>
<td>14,940</td>
<td>38.48%</td>
<td>5,748</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>5,435</td>
<td>63.38%</td>
<td>3,445</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>91,095</strong></td>
<td><strong>15.54%</strong></td>
<td><strong>14,154</strong></td>
</tr>
</tbody>
</table>

Sources: American Healthy Homes Survey Table 5-1 & CHAS Table 12

Finally, we can use the same methodology to estimate the number of housing units in Tulsa County with lead-based paint hazards, occupied by households with low-to-moderate incomes, by tenure:
### Housing Units in Tulsa County with Lead-Based Paint Hazards by Tenure, Occupied by Low-Income Families

<table>
<thead>
<tr>
<th>Owner-Occupied Housing Units</th>
<th>Total Housing Units</th>
<th>Percent w/LBP Hazards</th>
<th>Number w/LBP Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 50% AMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978 or Later</td>
<td>4,710</td>
<td>3.57%</td>
<td>168</td>
</tr>
<tr>
<td>1960-1977</td>
<td>5,085</td>
<td>11.18%</td>
<td>569</td>
</tr>
<tr>
<td>1940-1959</td>
<td>5,930</td>
<td>38.48%</td>
<td>2,282</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>2,000</td>
<td>63.36%</td>
<td>1,268</td>
</tr>
<tr>
<td>Total</td>
<td>17,725</td>
<td>24.18%</td>
<td>4,286</td>
</tr>
<tr>
<td>Renter-Occupied Housing Units</td>
<td>Total Housing Units</td>
<td>Percent w/LBP Hazards</td>
<td>Number w/LBP Hazards</td>
</tr>
<tr>
<td>&lt; 50% AMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978 or Later</td>
<td>14,205</td>
<td>3.57%</td>
<td>506</td>
</tr>
<tr>
<td>1960-1977</td>
<td>13,815</td>
<td>11.18%</td>
<td>1,545</td>
</tr>
<tr>
<td>1940-1959</td>
<td>6,415</td>
<td>38.48%</td>
<td>2,468</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>2,215</td>
<td>63.38%</td>
<td>1,404</td>
</tr>
<tr>
<td>Total</td>
<td>36,650</td>
<td>16.16%</td>
<td>5,923</td>
</tr>
<tr>
<td>Total Housing Units</td>
<td>Total Housing Units</td>
<td>Percent w/LBP Hazards</td>
<td>Number w/LBP Hazards</td>
</tr>
<tr>
<td>&lt; 50% AMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978 or Later</td>
<td>18,915</td>
<td>3.57%</td>
<td>674</td>
</tr>
<tr>
<td>1960-1977</td>
<td>18,900</td>
<td>11.18%</td>
<td>2,113</td>
</tr>
<tr>
<td>1940-1959</td>
<td>12,345</td>
<td>38.48%</td>
<td>4,750</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>4,215</td>
<td>63.38%</td>
<td>2,671</td>
</tr>
<tr>
<td>Total</td>
<td>54,375</td>
<td>18.78%</td>
<td>10,209</td>
</tr>
</tbody>
</table>

Sources: American Healthy Homes Survey Table 5-1 & CHAS Table 12

### Housing Units in Tulsa County with Lead-Based Paint Hazards by Tenure, Occupied by Moderate-Income Families

<table>
<thead>
<tr>
<th>Owner-Occupied Housing Units</th>
<th>Total Housing Units</th>
<th>Percent w/LBP Hazards</th>
<th>Number w/LBP Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>50%-80% AMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978 or Later</td>
<td>5,994</td>
<td>3.57%</td>
<td>214</td>
</tr>
<tr>
<td>1960-1977</td>
<td>6,246</td>
<td>11.18%</td>
<td>698</td>
</tr>
<tr>
<td>1940-1959</td>
<td>6,185</td>
<td>38.48%</td>
<td>2,380</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>1,685</td>
<td>63.36%</td>
<td>1,068</td>
</tr>
<tr>
<td>Total</td>
<td>20,110</td>
<td>21.68%</td>
<td>4,360</td>
</tr>
<tr>
<td>Renter-Occupied Housing Units</td>
<td>Total Housing Units</td>
<td>Percent w/LBP Hazards</td>
<td>Number w/LBP Hazards</td>
</tr>
<tr>
<td>50%-80% AMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978 or Later</td>
<td>8,671</td>
<td>3.57%</td>
<td>309</td>
</tr>
<tr>
<td>1960-1977</td>
<td>8,015</td>
<td>11.18%</td>
<td>896</td>
</tr>
<tr>
<td>1940-1959</td>
<td>3,455</td>
<td>38.48%</td>
<td>1,329</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>1,200</td>
<td>63.38%</td>
<td>761</td>
</tr>
<tr>
<td>Total</td>
<td>21,340</td>
<td>15.44%</td>
<td>3,295</td>
</tr>
<tr>
<td>Total Housing Units</td>
<td>Total Housing Units</td>
<td>Percent w/LBP Hazards</td>
<td>Number w/LBP Hazards</td>
</tr>
<tr>
<td>50%-80% AMI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978 or Later</td>
<td>14,665</td>
<td>3.57%</td>
<td>523</td>
</tr>
<tr>
<td>1960-1977</td>
<td>14,261</td>
<td>11.18%</td>
<td>1,595</td>
</tr>
<tr>
<td>1940-1959</td>
<td>9,640</td>
<td>38.48%</td>
<td>3,709</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>2,885</td>
<td>63.38%</td>
<td>1,828</td>
</tr>
<tr>
<td>Total</td>
<td>41,450</td>
<td>18.47%</td>
<td>7,655</td>
</tr>
</tbody>
</table>

Sources: American Healthy Homes Survey Table 5-1 & CHAS Table 12
To conclude, we estimate that there are a total of 40,136 homes in Tulsa County containing lead-based paint hazards, 25,982 owner-occupied and 14,154 renter-occupied. Of the 40,136 homes in the county estimated to have lead-based paint hazards, 10,209 are estimated to be occupied by households with low-incomes (incomes less than 50% of Area Median Income), and 7,655 are estimated to be occupied by households with moderate incomes (between 50% and 80% of Area Median Income), for a total of 17,864 housing units in Tulsa County with lead-based paint hazards occupied by households with low or moderate incomes.

**Lead-Based Paint Hazards in Homes with Children Present**

Using the same methodology, we can estimate the number of housing units in Tulsa County occupied by households with children under the age of six present. For this analysis we apply the lead-based paint hazards percentages from the American Healthy Homes Survey to the data in HUD CHAS Table 13, which details housing units by year of construction, household income, and presence of children under the age of six. The data is presented in the following table:

<table>
<thead>
<tr>
<th>Housing Units in Tulsa County with Lead-Based Paint Hazards with Children under Age 6 Present Occupied by Low or Moderate-Income Families</th>
<th>Total Housing Units</th>
<th>Percent w/LBP Hazards</th>
<th>Number w/LBP Hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing Units &lt; 50% AMI w/ Children under 6 Present</td>
<td>3,739</td>
<td>3.57%</td>
<td>133</td>
</tr>
<tr>
<td>1978 or Later</td>
<td>7,097</td>
<td>19.98%</td>
<td>1,418</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>625</td>
<td>63.38%</td>
<td>396</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11,460</strong></td>
<td><strong>16.99%</strong></td>
<td><strong>1,947</strong></td>
</tr>
<tr>
<td>Housing Units 50%-80% AMI w/ Children under 6 Present</td>
<td>2,872</td>
<td>3.57%</td>
<td>102</td>
</tr>
<tr>
<td>1978 or Later</td>
<td>4,888</td>
<td>19.98%</td>
<td>976</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>430</td>
<td>63.38%</td>
<td>273</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,190</strong></td>
<td><strong>16.50%</strong></td>
<td><strong>1,351</strong></td>
</tr>
<tr>
<td>Total LMI Housing Units w/ Children Present</td>
<td>6,611</td>
<td>3.57%</td>
<td>236</td>
</tr>
<tr>
<td>1978 or Later</td>
<td>11,984</td>
<td>19.98%</td>
<td>2,394</td>
</tr>
<tr>
<td>1939 or Earlier</td>
<td>1,055</td>
<td>63.38%</td>
<td>669</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19,650</strong></td>
<td><strong>16.79%</strong></td>
<td><strong>3,299</strong></td>
</tr>
</tbody>
</table>

As shown, we estimate there are 6,139 housing units in Tulsa County with lead-based paint hazards and children under the age of six present, and that 3,299 of those housing units are occupied by families with low to moderate incomes.
Research Footnotes/Sources

“The Prevalence of Lead-Based Paint Hazards in U.S. Housing”, Environmental Health Perspectives, Volume 110, Number 10, October 2002


Oklahoma State Department of Health, Oklahoma Childhood Lead Poisoning Prevention Program Focusing in High Risk Groups”

U.S. Department of Housing and Urban Development, Comprehensive Housing Affordability Strategy (CHAS), 2007-2011
Map 2: High-Risk Target Areas (HRTA) Zip Codes for Childhood Lead Poisoning

Legend
- High-Risk Target Area (HRTA) Zip Codes
- Other Zip Codes

Notes
The DEPP has identified 21 HRTA zip codes in Oklahoma. These zip codes are located in Garfield, Hughes, Jackson, Kay, Muskogee, Oklahoma, Okmulgee, Ottawa, and Tulsa Counties.

The HRTA zip codes include 73105, 73107, 73108, 73019, 73113, 75117, 73119, 73129, 73523, 73701, 74104, 74105, 74119, 74125, 74127, 74364, 74401, 74405, 74447, 74631, and 74848.

The HRTA zip codes are identified using the following criteria:
1. Zip codes having the highest proportion of pre-1950 housing;
2. Zip codes having the highest proportion of children under six years of age living in poverty;
3. Zip codes having high elevated blood lead level (EBLL) prevalence rate; and
4. Zip codes having the highest proportion of minority populations.
Exhibit #2

Percentage of Housing Units Containing Lead-Based Paint Hazards

Legend
Lead-Based Paint Data
Counties
- 9.5% - 13.3%
- 13.3% - 15.7%
- 15.7% - 17.5%
- 17.5% - 18.9%
- 16.9% - 20.9%
- 20.9% - 22.2%
- 22.2% - 26.4%
- 26.4% - 34.7%

Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1

Tulsa County
Exhibit #3

Percentage of Housing Units Containing Lead-Based Paint Hazards Occupied by Low to Moderate Income Households

Legend

Lead-Based Paint Data

<table>
<thead>
<tr>
<th>Percent Range</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>36.4% - 41.7%</td>
<td>Light Blue</td>
</tr>
<tr>
<td>41.7% - 43.8%</td>
<td>Medium Blue</td>
</tr>
<tr>
<td>43.8% - 45.2%</td>
<td>Dark Blue</td>
</tr>
<tr>
<td>45.2% - 46.7%</td>
<td>Very Dark Blue</td>
</tr>
<tr>
<td>46.7% - 48.3%</td>
<td>Violet</td>
</tr>
<tr>
<td>48.3% - 50.8%</td>
<td>Purple</td>
</tr>
<tr>
<td>50.8% - 53.8%</td>
<td>Dark Purple</td>
</tr>
<tr>
<td>53.8% - 59.8%</td>
<td>Black</td>
</tr>
</tbody>
</table>

Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1
Exhibit #4

Percentage of Housing Units Containing Lead-Based Paint Hazards with Children Age 6 or Younger Present

Legend
Lead-Based Paint Data

Counties
- 1.66% - 2.10%
- 2.10% - 2.30%
- 2.30% - 2.50%
- 2.50% - 2.70%
- 2.70% - 3.05%
- 3.05% - 3.30%
- 3.30% - 3.75%
- 3.75% - 4.30%

Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1

Tulsa County
Exhibit #5

Percentage of Housing Units Occupied by Low to Moderate Income Households Containing Lead-Based Paint Hazards with Children Age 6 or Younger Present

Legend

Lead-Based Paint Data

Counties

0.60% - 0.90%
0.90% - 1.10%
1.10% - 1.20%
1.20% - 1.30%
1.30% - 1.50%
1.50% - 1.70%
1.70% - 1.90%
1.90% - 2.60%

Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1
Exhibit #6

Percentage of Housing Units Occupied by Low to Moderate Income Households Containing Lead-Based Paint Hazards with Children Age 6 or Younger Present High-Risk Target Area (HRTA) Zip Codes Highlighted in Red

Legend
Lead-Based Paint Data
- HRTA Zip Codes

Counties
- 0.60% - 0.90%
- 0.90% - 1.10%
- 1.10% - 1.20%
- 1.20% - 1.30%
- 1.30% - 1.50%
- 1.50% - 1.70%
- 1.70% - 1.90%
- 1.90% - 2.60%

Compiled by Integra Realty Resources - Tulsa/OKC

Sources:
HUD Comprehensive Housing Affordability Strategy Data 2007-2011, Table 13
HUD American Healthy Homes Survey, Table 5-1
Conclusions

The previous analysis has attempted to describe the state of the residential housing market in Tulsa County, Oklahoma. Where possible, information regarding the population centers of the county was included to assess need on a community level. Much of the information is based on demographic information from local authorities and national information services. However, personal interviews were performed with property owners and managers, real estate professionals, and community officials in an effort to substantiate information from the national organizations and understand current market conditions. Several important issues regarding housing have become apparent through this analysis and are identified below.

Tulsa County has undergone strong growth over the last fifteen years, in terms of population, households and employment levels. Until recently, the oil and gas industry was a major driver of new growth in the region. New population and employment growth has been met with new housing construction, both for rent and for ownership. Though some growth has occurred in nearly all parts of the county, growth has been strongest in suburban areas of the county (Broken Arrow, Owasso, Bixby, Jenks, Glenpool and south Tulsa), as well as Tulsa’s urban core.

New housing development (both for ownership and rent) has comprised housing units that are affordable, as well as substantially more expensive. Among housing units for ownership, new construction is most expensive in the areas of greatest growth and demand, noting that the average sale price of homes in Jenks constructed in 2014/2015 is estimated to be $336,059. New construction for ownership in downtown Tulsa primarily consists of condominiums and townhomes, with most priced starting at $300,000. These prices are all well above what could be afforded by a household earning less than median household income for Tulsa County, estimated to be $48,553 in 2015.

There has been significant new rental development in most areas of Tulsa County, with the largest new developments primarily in downtown/midtown Tulsa, as well as suburban communities such as Broken Arrow, Owasso, Jenks, Glenpool, and south Tulsa. Some new rental housing construction is affordable in nature, but the majority is not: we estimate that among housing units either currently under construction or planned for construction in the near future, less than 10% are affordable. However, we forecast that over the next five years, 4,898 rental housing units will be needed in Tulsa County, and that 2,397 will need to be affordable to households earning at or less than 60% of median household income for the county, or 44.9%.

Tulsa County has a relatively high rate of renters with high rent costs (42.74%) as well as homeowners with high ownership costs (20.77%). These figures are both above state averages, and will likely not improve in the near future as new housing construction remains largely priced above what could be afforded by typical households.

In terms of disaster resiliency we note that 67 tornadoes have impacted the county between 1959 and 2014, with 383 injuries and 15 fatalities combined. Data provided by the local Hazard Mitigation Plan indicates approximately 1,425 residential structures are within a floodplain.
Tulsa County is largely served by the Tulsa City/County Continuum of Care (CoC), which provides services to the area’s homeless populations among other functions. Throughout the Tulsa City/County CoC, there are an estimated 1,010 homeless persons, 908 of which are estimated to be sheltered. The majority of this population is over the age of 24, with significant subpopulations among the mentally ill, chronic substance abusers, military veterans, and victims of domestic violence. The mentally ill and chronic substance abusers are the least likely to be sheltered among those populations.

In terms of fair housing issues, many affordable housing units are located in areas at risk for poverty, in primarily non-white enclaves, and in areas where limited English is spoken. 1,441 affordable housing units are considered to be in a food desert; in urban environments this is considered to be further than 1 mile from a grocery store. 2,220 units lack readily available public transit.

Due to the age of the county’s housing stock, lead-based paint hazards are an issue, with an estimated 40,136 occupied housing units with such hazards, and 6,139 of those units occupied by low-to-moderate income households with children under the age of 6 present.

In summary, it is apparent that new housing in several categories is required in Tulsa County. While the upper end of the market is being satisfied, the lower end of the population that requires rental and moderate cost ownership property has a more limited product available. As the population continues to grow in Tulsa County as a whole, this demand will continue to increase. We estimate the county will need 7,642 housing units for ownership and 4,898 housing units for rent over the next five years, in order to accommodate projected population and household growth. These units should include a mixture of both market rate rental units, affordable housing units, and housing for ownership affordable to a range of incomes.
Addendum A

Acknowledgments
The Housing Needs Assessment research team extends a special thanks to the following individuals and organizations for their many contributions of data, program information and time that helped make this project possible:

**University of Oklahoma Intern Team**

Derrick “Rhys” Wilson, Eyakem Gulilat, Chase Phillips, Jane Wyrick, Charlotte Adcock, Sam Shreder, Jacquelyn Porter, Amy Wilson, Kevin Wang, Lora Gwartney, Forrest Bennett, Maryam Moradian, Salma Al Nairab

**Federal Agencies**

Federal Reserve Bank of Kansas City-Oklahoma City Branch, Steven Shepelwich


US Department of Housing and Urban Development Oklahoma City Field Office, Jackie McBride

**Oklahoma State Agencies**

Department of Health Karen Fenserly, Susan J. Quigley and Marisa New

Department of Human Services, Connie Schlittler

Department of Emergency Management Dara Hayes

Department of Commerce, Rebekah Zahn-Pittser

**Local Organizations**

Regional Council of Governments and Oklahoma Association of Regional Councils

Continuums of Care Network

Hazard Mitigation Plan personnel/administrators

Community economic development professionals

City Managers and Planners

Community Action Agencies

Chambers of Commerce

Affordable housing developers, owners and investors

Homeless Alliance, Dan Straughan, Sunshine Hernandez
Addenda

Pathways, Patrice Pratt

Women’s Resource Center, Vanessa Morrison

AIDS Care Fund, Sunshine Schillings
Addendum B

Qualifications
Owen S. Ard, MAI

Experience
Senior Managing Director of Integra Realty Resources - Tulsa/OKC, a full service valuation and consulting firm. Actively engaged in real estate valuation and consulting assignments since 1984, Mr. Ard has performed appraisal services consisting of narrative and summary real estate appraisals, ad valorem tax protests, consulting, litigation support services, market and feasibility studies, reviews, market study analyses and appraisals in connection with allocation of tax credits, brokerage services for commercial and residential transactions, property management, and expert litigation testimony. All types of real property are encompassed - apartments, ranches, theaters, hotel/motel, multi-purpose and resort properties, golf courses, high-rise and garden office buildings, manufacturing facilities, warehousing and distribution centers, nursing homes, assisted living facilities, banks, shopping centers and malls, residential subdivisions, industrial parks, and sports arenas. Valuations and market studies have been prepared on proposed, partially completed, renovated and existing structures. Appraisals have been made for condemnation purposes, estates, mortgage financing, equity participation and due diligence support. Clients served include corporations, law firms, financial institutions, investment firms and public/private agencies.

Professional Activities & Affiliations
Central Oklahoma Chapter, Appraisal Institute (Past Chapter President)
National Association of Realtors
Urban Land Institute
National Council of Affordable Housing Market Analysts
Appraisal Institute National Committees
Tulsa Metropolitan Area Planning Commission
Tulsa Preservation Commission
Tulsa Local Development Act Review Committee
Appraisal Institute, Member (MAI)

Licenses
Oklahoma, Oklahoma General Appraiser License, 11245CGA, Expires April 2018

Education
B.S.B.A. Degree, Marketing, University of Tulsa, Tulsa, Oklahoma (1984)
Successfully completed numerous real estate related courses and seminars sponsored by the Appraisal Institute, accredited universities and others.
Currently certified by the Appraisal Institute’s voluntary program of continuing education for its designated members.

Qualified Before Courts & Administrative Bodies
District Court of Tulsa County, Oklahoma
District Court of Oklahoma County, Oklahoma
District Court of Garfield County, Oklahoma
Tulsa County Board of Equalization

oard@irr.com - 918-492-4844
Owen S. Ard, MAI

Qualified Before Courts & Administrative Bodies (Cont'd)

Kansas Board of Tax Appeals
United States Federal Bankruptcy Court, Tulsa, Oklahoma
United States Federal Bankruptcy Court, Minneapolis, Minnesota
United States Federal Bankruptcy Court, Jackson, Mississippi
David A. Puckett

Experience
Senior Director with Integra Realty Resources - Oklahoma, a full service valuation and consulting firm. Actively engaged in real estate valuation and consulting assignments since May 2002, Mr. Puckett has performed appraisal services consisting of narrative and summary real estate appraisals. All types of real property are encompassed-apartments, garden office buildings, manufacturing and warehouse industrial buildings, mobile home parks, restaurants and retail structures. Valuations and market studies have been prepared on proposed and existing structures. Appraisals have been made for estates, mortgage financing, equity participation and due diligence support. Prior to his employ at Integra Realty Resources - Oklahoma, Mr. Puckett was an employee of the University of Oklahoma Center for Business and Economic Development, working as a data analyst for the All County Affordable Housing Study commissioned by the Oklahoma Department of Commerce. Responsibilities included demographic, economic and real estate data collection from federal, state and local sources, as well as interviews of regional planning district, county and municipal officials, real estate market experts and local economic development experts. Mr. Puckett was responsible for site visits of 23 of the 77 Oklahoma counties, and personally authored 18 of the final reports. As an employee of IRR-Oklahoma, Mr. Puckett also performed the site visits and authored the final reports for four of the nine entitlement cities: Tulsa, Broken Arrow, Shawnee and Lawton. Mr. Puckett has also completed numerous housing market studies for use in applications for Federal Low-Income Housing Tax Credits in Oklahoma, Kansas, Missouri and Arkansas, and has performed market studies and appraisals for use in H.U.D.’s Multifamily Accelerated Processing (M.A.P.) program. Clients served include corporations, financial institutions, investment firms and public/private agencies.

Professional Activities & Affiliations
Appraisal Institute-Candidate for Designation

Licenses
Oklahoma, Oklahoma General Appraiser License, 12795CGA, Expires December 2016

Education
University of Oklahoma, Norman – Bachelor of Arts (Economics)
Successfully completed the following Appraisal Institute courses and seminars:
- Uniform Standards of Professional Appraisal Practice, 15-Hour
- Introduction to Income Capitalization Seminar
- Basic Income Capitalization 310
- Advanced Income Capitalization 510
- Highest and Best Use and Market Analysis 520
- Advanced Sales Comparison and Cost Approaches 530
- Report Writing and Valuation Analysis 540
- Advanced Concepts and Case Studies
- Real Estate Finance Statistics and Valuation Modeling
- Business Practices and Ethics 420
Integra Realty Resources, Inc.
Corporate Profile

Integra Realty Resources, Inc. offers the most comprehensive property valuation and counseling coverage in North America with over 60 independently owned and operated offices located throughout the United States and the Caribbean. Integra was created for the purpose of combining the intimate knowledge of well-established local firms with the powerful resources and capabilities of a national company. Integra offers integrated technology, national data and information systems, as well as standardized valuation models and report formats for ease of client review and analysis. Integra’s local offices have an average of 25 years of service in the local market, and virtually all are headed by a Senior Managing Director who is an MAI member of the Appraisal Institute.

A listing of IRR’s local offices and their Senior Managing Directors follows:

ATLANTA, GA - Sherry L. Watkins, MAI, FRICS
AUSTIN, TX - Randy A. Williams, MAI, SR/WA, FRICS
BALTIMORE, MD - G. Edward Kerr, MAI, MRICS
BIRMINGHAM, AL - Rusty Rich, MAI, MRICS
BOISE, ID - Bradford T. Knipe, MAI, ARA, CCIM, CRE, FRICS
BOSTON, MA - David L. Cary, Jr., MAI, MRICS
CHARLESTON, SC - Cleveland "Bud" Wright, Jr., MAI
CHARLOTTE, NC - Fitzhugh L. Stout, MAI, CRE, FRICS
CHICAGO, IL - Eric L. Enloe, MAI, FRICS
CINCINNATI, OH - Gary S. Wright, MAI, FRICS, SRA
CLEVELAND, OH - Douglas P. Sloan, MAI
COLUMBIA, SC - Michael B. Dodds, MAI, CCIM
COLUMBUS, OH - Bruce A. Daubner, MAI, FRICS
DALLAS, TX - Mark R. Lamb, MAI, CPA, FRICS
DAYTON, OH - Gary S. Wright, MAI, CRE, SRA
DENVER, CO - Brad A. Weiman, MAI, FRICS
DETROIT, MI - Anthony Sanna, MAI, CRE, FRICS
FORT WORTH, TX - Gregory B. Cook, SR/WA
GREENSBORO, NC - Nancy Tritt, MAI, SRA, FRICS
GREENVILLE, SC - Michael B. Dodds, MAI, CCIM
HARTFORD, CT - Mark F. Bates, MAI, CRE, FRICS
HOUSTON, TX - David R. Dominy, MAI, CRE, FRICS
INDIANAPOLIS, IN - Michael C. Lady, MAI, SRA, CCIM, FRICS
JACKSON, MS - John R. Praytor, MAI
JACKSONVILLE, FL - Robert Crenshaw, MAI, FRICS
KANSAS CITY, MO/KS - Kenneth Jaggers, MAI, FRICS
LAS VEGAS, NV - Charles E. Jack IV, MAI
LOS ANGELES, CA - John G. Ellis, MAI, CRE, FRICS
LOUISIANA, LA - Matthew J. Swanson, MAI
LOUISVILLE, KY - Stacey Nicholas, MAI, MRICS
MEMPHIS, TN - J. Walter Allen, MAI, FRICS
MIAMI/PALM BEACH, FL - Anthony M. Graziano, MAI, CRE, FRICS
MINNEAPOLIS, MN - Michael F. Amundson, MAI, CCIM, FRICS
NAPLES, FL - Carlton J. Lloyd, MAI, FRICS
NASHVILLE, TN - R. Paul Perutelli, MAI, SRA, FRICS
NEW JERSEY COASTAL - Halvor J. Egeland, MAI
NEW JERSEY NORTHERN - Matthew S. Krauser, CRE, FRICS
NEW YORK, NY - Raymond T. Orz, MAI, CRE, FRICS
ORANGE COUNTY, CA - Steve Calandra, MAI
ORLANDO, FL - Christopher Starkey, MAI, MRICS
PHILADELPHIA, PA - Joseph D. Pasquaello, CRE, FRICS
PHOENIX, AZ - Walter "Tres" Winius III, MAI, FRICS
PITTSBURGH, PA - Paul D. Griffith, MAI, CRE, FRICS
PORTLAND, OR - Brian A. Gianville, MAI, CRE, FRICS
PROVIDENCE, RI - Gerard H. McDonough, MAI, FRICS
RALEIGH, NC - Chris R. Morris, MAI, FRICS
RICHMOND, VA - Kenneth L. Brown, MAI, CCIM, FRICS
SACRAMENTO, CA - Scott Beebe, MAI, FRICS
ST. LOUIS, MO - P. Ryan McDonald, MAI, FRICS
SALT LAKE CITY, UT - Darrin W. Liedell, MAI, FRICS, CCIM
SAN DIEGO, CA - Jeff A. Greenwald, MAI, SRA, FRICS
SAN FRANCISCO, CA - Jan Kleczewski, MAI, FRICS
SARASOTA, FL - Carlton J. Lloyd, MAI, FRICS
SAVANNAH, GA - J. Carl Schultz, Jr., MAI, CRE, CRE, SRA
SEATTLE, WA - Allen N. Safe, MAI, MRICS
SYRACUSE, NY - William J. Kimball, MAI, FRICS
TAMPA, FL - Bradford L. Johnson, MAI, MRICS
TULSA, OK - Owen S. Ard, MAI
WASHINGTON, DC - Patrick C. Kerr, MAI, FRICS, SRA
WILMINGTON, DE - Douglas L. Nickel, MAI, FRICS
CARIBBEAN/CAYMAN ISLANDS - James Andrews, MAI, FRICS

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DAWN EVE JOURDAN, ESQ., PH.D.

Director and Associate Professor
Regional and City Planning
College of Architecture
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Norman, OK 73019-4141
Phone: (405) 325-3602
Fax: (405) 325-7558
E-MAIL: Dawn.E.Jourdan-1@ou.edu

EDUCATION:
B.S. Urban Affairs and Theatre Arts, Bradley University, Peoria, IL, 1996.

RESEARCH INTERESTS:
The legal aspects of land use, affordable housing, historic preservation and aesthetics regulation at the federal, state, and local level.

WORK EXPERIENCE:
Associate Professor and Director of Regional and City Planning, University of Oklahoma (07/12-present)
Assistant Professor with a Joint Appointment in Planning and Law, University of Florida (01/08-6/12)
Director of the Center for Building Better Communities, University of Florida (05/11-06/12)
Assistant Professor and Minor Program Coordinator, Texas A&M University (01/05-12/07)
Lecturer, Rutgers University Blounstein Institute (01/06-present)
Lecturer, Texas A&M University (01/04-12/04)
Adjunct Professor, Florida State University (01/03-12/03)
Graduate Teaching Assistant, Florida State University (05/02-12/03)
Legal Intern, 1000 Friends of Florida (05/02-12/03)
Associate, Holland & Knight LLP (05/00-08/01)

AWARDS:

Student Planning Award for the Pinellas County Post Disaster Ordinance Drafting Project from the Florida Chapter of the American Planning Association, Fall, 2011.

Award for Service as the University Liaison to the Florida Chapter of the American Planning Association, Fall, 2010.

Teacher of the year award by the UF Student Planning Association, April, 2010.

Best paper in the real estate valuation category by the Appraisal Institute with Kimberly Geideman and Shan Gao, Fall, 2009.

Excellence in Teach Award by the College of Architecture of Texas A & M University, September, 2005.

Student Planning Award by the Texas Chapter of the American Planning Association, Fall, 2007.


COURSES TAUGHT:

Principles and Practice of Urban Planning (graduate level, at the University of Oklahoma)

Land Use Controls (graduate level, at the University of Oklahoma)

Sociology of Housing (graduate level, at the University of Oklahoma with Dean Charles Graham)

Growth Management Powers II (graduate-law course, at the University of Florida)

Growth Management Powers I (graduate-law course, at the University of Florida)

Affordable Housing Law (graduate-law course, at the University of Florida)

Planning History and Theory (graduate level, at the University of Florida and Texas A&M University)

Land Use Planning Law (law school, at the University of Florida College of Law)
Land Development Law (graduate level, at Texas A&M University)
Historic Preservation Law (graduate level, at Texas A&M University)
Introduction to Urban Planning (undergraduate level, at Texas A&M University and Florida State University)
Attorney-Client Communications (undergraduate level, at Florida State University)
Legal Communications (undergraduate level, at Florida State University)
Environmental Law (continuing education, at Rutgers University)
Historic Preservation Law (continuing education, at Rutgers University)
Ordinance Drafting (continuing education, at Rutgers University)

PUBLICATIONS:

Refereed Journal Articles


Addenda

Land Development Law (graduate level, at Texas A&M University)
Historic Preservation Law (graduate level, at Texas A&M University)
Introduction to Urban Planning (undergraduate level, at Texas A&M University and Florida State University)
Attorney-Client Communications (undergraduate level, at Florida State University)
Legal Communications (undergraduate level, at Florida State University)
Environmental Law (continuing education, at Rutgers University)
Historic Preservation Law (continuing education, at Rutgers University)
Ordinance Drafting (continuing education, at Rutgers University)

PUBLICATIONS:

Refereed Journal Articles


Addenda


Books


Book Chapters and Entries


Non-Refereed Publications


Jourdan, D. Bomb Proof Schools. Plan Canada. (Fall, 2006).


Books


Book Chapters and Entries


Non-Refereed Publications


**SPONSORED RESEARCH:**

Co-PI, Tribal Climate Change and Extreme Event Response Studies to Identify Vulnerabilities, South Central Climate Science Center, 2014-2015.

PI, Oklahoma City, Sustainability Audit, May 2013-present.

PI, Shimberg Center for Housing Studies, The Lost Properties and Moving To Opportunity, October 2010 – Present.


Co-PI, Rural Coastal Region Adaptation Planning for Sea Level Rise, Florida Sea Grant, 2012-14.


Addenda


A Hedonic Model of the Effects of Adaptive Reuse on Community Change in Savannah, Georgia, sponsored by the Lincoln Institute of Land Policy, Role, Investigator.

Legal Analysis and Policy Formulation Regarding the Use of Regional Rural Landbanking to Enhance the Development of Affordable Housing Opportunities in Brazos Valley Texas, sponsored by the Brazos Valley Affordable Housing Corporation, January 2007-August 2007, Role, Co-Principal Investigator.

Market Study of the Barriers to the Provision of Affordable Housing in Brazos Valley Texas, sponsored by the Brazos Valley Affordable Housing Corporation, January 2006-August 2006, Role, Co-Principal Investigator.

Comparative Analysis of the Effects of the Location of Big Box Retail on Housing Prices in Urban and Suburban Areas, sponsored by Texas A&M College of Architecture, December 2005-December 2006, Role, Principal Investigator.

PROFESSIONAL SERVICE AND AFFILIATIONS:

Professional Services

Chair of the Academic Advisory Council for Sign Research and Education (August 2014-present)

Chair of the Planner Outreach Subcommittee for the International Sign Association (January 2014-present)

Appointed to the Alachua County Affordable Housing Advisory Board (April 2010-2011)

University Liaison to the Florida Chapter of the American Planning Association (September 2007-September 2010)

Fellow to the Center for Children and Families at the Levin College of Law (May 2007-2012)

Member of the Law School Honor Code Committee (2009-2010)
Member of the ICCHP Committee (2009-2010)
Member of DCP Faculty Council (2009-2012)
Member of UF Historic Buildings and Structures Committee (2009-2010)
Ad Hoc Member of the Amicus Committee for the American Planning Association Fellow for the Center for Heritage Conservation at Texas A&M University (2005-2007).

Professional Affiliations
American Planning Association
Oklahoma Chapter of the APA
Association of Collegiate Schools of Planning
Member of the Illinois Bar

Served as a manuscript and grant proposal reviewer for the following:
Journal of the Community Development Society
Journal of Planning History
US-China Law Review
UF Journal of Law and Public Policy
Journal of Planning Education and Research
National Science Foundation

CONFERENCE PRESENTATIONS:

International Conferences-Refereed Presentations


**Jourdan, D.**, Wal-Mart in the Garden District- Does the Arbitrary and Capricious Standard of Review Lessen the Right of Citizens to Participate. Presented at the
Jourdan, D. and VanZandt, S. Creating Regional Landbanks to Meet Rural Affordable Housing Needs. Presented at the Joint International Conference of the Association of Collegiate Schools of Planning (ACSP) and the Association of European Planning Schools (AESOP), Chicago, IL, July 2008.


National Conferences

Jourdan, D. Community Aesthetics and Sign Regulations: How far can a city go to prescribe aesthetics? Presented at the National Signage Research and Education Conference in Cincinnati, OK, October, 2013.


Frank, K., Jourdan, D., and Obonyo, E. Sea level rise adaptation planning for rural coastal areas in Florida. Initiative on Climate Adaptation Research and Understanding through the Social Sciences: Climate Vulnerability and Adaptation (ICARUS II). May 5-8, Ann Arbor, MI, 2011.


**National Conferences – Invited Discussant and/or Moderator**

Jourdan, D. Institute for Quality Communities Placemaking Conference in Norman, OK (2013) on the topic of “Healthy, Walkable Communities.”


Jourdan, D. Annual Conference of the ACSP in Fort Worth, TX (2006) on the topic of “Researching Wal-Mart.”


Jourdan, D. Sustainable Campus Planning, Annual Conference of the ACSP in Baltimore, MD (2002).

**State Conferences – Presentations by Invitation**
Addenda


Jourdan, D. So You Want to Take on Your Sign Code, Presented at the State Conference of the Oklahoma Chapter of the American Planning Association in Tahlequah, OK, October, 2013.


Silver, C. and Jourdan, D. Legal Aspects of Sustainable Development, Presented at the Florida Chapter of the American Planning Association Conference, September, 2011.


REFERENCES AVAILABLE UPON REQUEST
K. MEGHAN WIETERS, PH.D., AICP  
University of Oklahoma, Regional & City Planning, 830 Van Vleet Oval - Gould Hall RM 162  
Norman, OK 73019, kmeghanwieters@ou.edu

EDUCATION

Texas A&M University  
Ph.D in Urban Regional Science  
Dissertation: “Integrating Walking for Transportation and Physical Activity for Sedentary Office Workers in Texas”  
2003 – August 2009

University of Texas at Austin  
Masters of Science in Community & Regional Planning  
1993-1995

Trinity University  
Bachelors of Arts  
Majors: Philosophy, International Studies (concentration on Latin America), Minor: Spanish  
1989-1993

TEACHING

Assistant Professor - University of Oklahoma  
Fall 2009 – to present

- RCPL 5813 Environmental Planning Methods
- RCPL 5513 Subdivision Planning
- RCPL 5493 Transportation and Land Use Planning
- RCPL 5013 History and Theory of Urban Planning
- RCPL 5823 Rural and Regional Planning
- RCPL 5990 Public Health & Built Environment

PREVIOUS RESEARCH POSITIONS & PRACTICE

Texas A&M University  
Graduate Assistant  
August 2006

Texas Transportation Institute  
Graduate Research Assistant  
August 2003 – August 2006

City of Austin - Transportation, Planning & Sustainability Department  
Principal Planner / Senior Planner  
August 1998 – August 2003

Capital Metropolitan Transportation Authority  
Land Use/Transportation Planner  
April 1994 – August 1998

PUBLICATIONS & REPORTS

Wieters, K M. Office Workers Stuck at their Desks: Built Environment Implications on Walk Trips. Under review – Health & Place, April 2014.


K. Meghan Wieters, Ph. D., AICP


CONFERENCE & INVITED PRESENTATIONS


Wieters, K. Office workers -- Sedentary by Practice: How can we integrate physical activity as part of daily routines at work. Oklahoma Public Health Association Conference, Health Equity Caucus, April 2012.


Tulsa County
INVITED LECTURES

University of Oklahoma
Department of Geography & Sustainability, Spring Colloquium
"Walking & Biking: Active Transportation and the Built Environment" January 2014

Kansas State University – Big 12 Fellowship
• The messiness of random sampling spatially Oct. 21, 2013
• Watershed Functions & Impacts from Development Oct. 21, 2013
• Creating an audit tool and operationalizing data Oct. 23, 2013
• Bicycle Facility Design & Planning Oct. 23, 2013
• Observational Methods Oct. 23, 2013
• Pedestrian Planning and Design: How does the environment we live in impact our lives? Oct. 2013
• Office workers – Sedentary by Practice: How can we integrate physical activity as part of daily routines at work – Formal presentation to faculty and students Oct. 2013

Department of Biostatistics and Epidemiology College of Public Health,
University of Oklahoma Health Sciences Center
• Planning, Built Environment, and Public Health: How does the environment we live in impact our lives? March 11, 2013

GRANT FUNDING

Received Ed Cline Faculty Development Award ($1450), Spring 2014
Received Big 12 Faculty Fellowship Program Award ($2500) June 2013
Received College of Architecture IT recipient ($3450) July 2013
Sooner Parents Mini-Grant Funding ($500) for student mentoring—prepared and submitted to assist RCPL
Student Planning Association July 2013
Received Junior Faculty Research ($7,000) for summer research on rural planning and physical activity opportunities. University of Oklahoma, Summer 2012
Robert Wood Johnson Active Living Research Dissertation Grant ($25,000), Texas A&M University, 2007

SERVICE

University-Level Service
• Advisory Committee Course Management Systems (ACCMS) Spring 2013

College-Level Service
• Graduate Liaison for Regional & City Planning Division (Fall 2013 – present)
• Graduate Research & Curriculum Committee (Fall 2013 – present)
• RCPL orientation (Fall 2010–present)
• Search committee for new RCPL hires, new LA hire (Summer 2011, Summer 2012, Spring 2013, Spring 2014)
• IT Committee (member since 2012), Chair (Fall 2013–Spring 2014)
• Model Shop Committee (member since 2012–Fall 2013)
• RCPL website (2011–present)
• GHGI committee (Gould Hall Green Initiative) (Fall 2011)
SERVICE

State-level / City-Level Service
- President – Health Equity Caucus, subgroup of Oklahoma Public Health Association
- APA/AICP member
- Bicycle Advisory Committee, City of Norman – Committee member (Spring 2013 – 2016)

National-Level Service
- Secretary/Treasurer of Faculty Women’s Interest Group (FWIG), committee under Association of Collegiate Schools of Planning (ACSP).
- CDC Weight of the Nation Conference planning, Built Environment & Transportation Subcommittee
- Reviewer for Journal of Physical Activity and Health
Bryce C. Lowery, PhD

Contact
University of Oklahoma
College of Architecture - Division of Regional and City Planning
830 Van Vleet Oval
Gould Hall 255
Norman, OK 73019
(405) 325-6953
bryce.c.lowery@ou.edu

Academic Experience

Assistant Professor
College of Architecture – Division of Regional and City Planning
University of Oklahoma – Norman, OK
2014 - present

Education

Doctor of Philosophy – Policy, Planning, and Development
Sol Price School of Public Policy
University of Southern California - Los Angeles, CA
2014
Dissertation: Social Construction of the Experience Economy: The spatial ecology of outdoor advertising in Los Angeles
Jack Dyckman Award - Best Dissertation in Planning & Development
Committee: David Sloane, PhD
Tridib Banerjee, PhD
Pierrette Hondagneu-Sotelo, PhD [Sociology]

Master of Landscape Architecture
College of Environmental Design
California State Polytechnic University - Pomona, CA
2008

Master of Science – Environmental Policy and Behavior
School of Natural Resources and Environment
University of Michigan - Ann Arbor, MI
2000

Bachelor of Arts – Economics and Environmental Studies
Dornsife College of Letters, Arts, and Sciences
University of Southern California - Los Angeles, CA
1996

Publications

The Prospects and Problems of Integrating Sketch Maps with Geographic Information Systems [GIS] to Understand Environmental Perception: A case study of mapping youth fear in Los Angeles gang neighborhoods
Curtis, J.W., E. Shiu, B. Lowery, D. Sloane, K. Hennigan and A. Curtis
2014

The Prevalence of Harmful Content on Outdoor Advertising in Los Angeles: Land use, community characteristics, and the spatial inequality of a public health nuisance
Lowery, B.C. and D.C. Sloane
2014

Presentations

From Regional Center to Sign District: Regulating outdoor advertising in Los Angeles, 1881-2012
Association of Collegiate Schools of Planning – Philadelphia, PA – November 1, 2014
with David Sloane
Do Farmers’ Markets Improve the Availability of Healthy Foods for All Communities?
A case study of 18 markets in Los Angeles.
Association of Collegiate Schools of Planning – Philadelphia, PA – October 30, 2014
with Denise Payan, LaVonna Blair-Lewis and David Sloane

If You See Something, Say Something:
Community response [and non-response] to outdoor advertising regulation in Los Angeles
Council of Educators in Landscape Architecture – Austin, TX – March 29, 2013

The Spatial Ecology of Outdoor Advertising in Los Angeles:
The unjust impact of the commercial landscape
Association of Collegiate Schools of Planning – Cincinnati, OH – November 3, 2012
with David Sloane

Employing Social Network Analysis to Understand the Formation of Sustainable Social Capital
Council of Educators in Landscape Architecture - Tucson, AZ – January 15, 2009

Teaching Experience

Assistant Professor
University of Oklahoma – College of Architecture
Subdivision and Site Planning (graduate)
Computer Mapping and GIS in Planning (graduate)
Comprehensive Planning Studio (graduate)
2014-present

Lecturer
University of California, Irvine – School of Social Ecology
Design and Planning Graphics (graduate)
2014

Teaching Assistant
University of Southern California - Sol Price School of Public Policy
Citizenship and Public Ethics (undergraduate)
History of Planning and Development (undergraduate)
Planning History and Urban Form (graduate)
Smart Growth and Urban Sprawl (graduate)
Urban Context for Policy and Planning (undergraduate)
Urban Planning and Development (undergraduate)
Urban Planning and Social Policy (graduate - online)
2008-2013

Graduate Student Instructor
University of Michigan - School of Natural Resources and Environment
Introduction to Environmental Policy (undergraduate)
Introduction to Natural Resource Management (undergraduate)
1999-2000

Other Experience

Research Assistant
Sol Price School of Public Policy - University of Southern California
2009 - 2014

Editorial Assistant – Terry L. Cooper
2011 - 2012

Research Associate
Lodestar Management/Research Inc. (now Harder+Company)
2005 - 2006

Project Coordinator
Perinatal Advisory Council of Los Angeles County
2004 - 2005

Community Researcher
Children’s Planning Council - Los Angeles County Board of Supervisors
2002 - 2004

Assistant Director
Health DATA Program - UCLA Center for Health Policy Research
2000 - 2002
<table>
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<th>Role</th>
<th>Year(s)</th>
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<tr>
<td>Curriculum Coordinator</td>
<td>2000</td>
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<tr>
<td>UCLA Labor, Occupational, Safety and Health Program</td>
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<td>Research Coordinator</td>
<td>1996 - 1998</td>
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<tr>
<td><em>The Wild Thornberry's Television Series</em></td>
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<td><em>Klasky-Cuipo Incorporated/Nickelodeon Studios</em></td>
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<td>Activities and Service</td>
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<td>Committee Member</td>
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<td>University of Oklahoma</td>
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<tr>
<td>Anna Sipnikova – Master of City and Regional Planning Thesis</td>
<td>2014 - present</td>
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<td>Reviewer</td>
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<td><em>American Journal of Public Health</em></td>
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<td>Council of Educators in Landscape Architecture</td>
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<td>Member</td>
<td>2014 - present</td>
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<td>Creating/Making Facilities Coordination Team</td>
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<td>University of Oklahoma – College of Architecture</td>
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<td>Member</td>
<td>2013</td>
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<td><em>Billboard and Visual Landscape Visioning Group</em></td>
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<td>City of Los Angeles</td>
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<td>Area Chairperson</td>
<td>2010 - 2012</td>
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<td>Hollywood Hills West Neighborhood Council – Area 2: Cahuenga Pass</td>
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<td>City of Los Angeles</td>
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<td>Vice-Chairperson</td>
<td>2010 - 2012</td>
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<td>Appointee</td>
<td>2008 - 2012</td>
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<td><em>Cahuenga/Ventura Corridor Specific Plan Review Board</em></td>
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<td>City of Los Angeles - Council District 4</td>
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<td>President</td>
<td>2011 - 2012</td>
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<td>Member</td>
<td>2000 - 2012</td>
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<tr>
<td><em>Cahuenga Pass Property Owners' Association</em></td>
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BACKGROUND SUMMARY

Executive Manager with extensive experience in public sector resource design, management and evaluation. Knowledge and skills include: structuring and design of state and local service programs and initiatives, developing written proposals for project financing, identifying community economic development resources and training.

EXPERIENCE

DeBruler, Inc.
Vice President, Oklahoma City, August 2001 to Present
Provide services including:
✓ Researching public and private resources and preparing applications for financial assistance in response to client requests for economic and community development projects.
✓ Technical assistance to nonprofits and units of local government regarding federal and state resources and structuring project-beneficial partnerships; preparing strategic and business plans for public and private sector entities.
✓ Group facilitation services.
✓ Technical training for nonprofits and units of local government regarding federal and state financial assistance programs. Conducting organizational assessments and developing capacity building curriculums.

Oklahoma Housing Finance Agency
Team Leader, Housing Development Team, Oklahoma City, July 1998 to July 2001
Provided direct supervision and oversight of sixteen staff engaged in the administration of multiple federal and state affordable housing program resources.
While employed by the agency:
✓ Reorganized state’s Single Family Mortgage Revenue Bond, Low-income Housing Tax Credit, HOME Investment Partnerships and Housing Trust Fund Programs into a single work unit.
✓ Streamlined Low-income Housing Tax Credit Program administrative rules to provide for market responsive design flexibility.
✓ Streamlined affordable housing resources by developing a singular application package and process for the agency’s affordable housing development resources and established e-information network.
✓ Facilitated the development of working partnerships between the state’s nonprofit and for-profit housing development organizations and agency’s mortgage revenue bond lenders.
✓ Financed the development of affordable housing by leveraging public sector development funds with private investments.
✓ Facilitated legislative task force on rural affordable housing issues and devised legislative and programmatic actions to spur rural development.
✓ Developed, financed and implemented the state’s first statewide affordable housing market analysis in partnership with a major university center.
✓ Drafted enabling legislation, capitalized and implemented state’s Housing Trust Fund.

Oklahoma Department of Commerce
Program Manager/Department Head, Oklahoma City, March 1988 to July 1998
✓ In response to market-based demand, directed a team of professional agency staff with diverse skills, in the redesign of the state’s HOME Investment Partnerships Program from primarily rehabilitation services to the production of rural affordable housing units.
✓ Led HOME Program administrative team in the relocation of the Program from its state agency environment to the Oklahoma Housing Finance Agency, a public trust.
✓ Leveraged HOME Program development resources with other public and private debt capital to finance the development of rural affordable housing statewide.
✓ Formulated and implemented a legislative agenda to enact and capitalizing the state’s Housing Trust Fund.

City of Oklahoma City January 1984 to February 1988
Division Head, Code Inspections Division/Department of Environmental Services
Assistant Superintendent, Utility Services Division/Water Department
Administrative Assistant, Street Maintenance Division, Public Works Department
Management Intern, Personnel Department

EDUCATION
Masters of Public Administration, University of Oklahoma 1983
Bachelor of Arts Political Science, University of Oklahoma, 1979