



Department of Administration  
Budget and Management Division

Tom Barrett  
Mayor

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Administration Director

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Budget and Management Director

June 16, 2016

## MEMORANDUM

To: Mark Nicolini, Budget and Management Director  
Ghassan Korban, Commissioner of Public Works  
Carrie Lewis, Superintendent, Milwaukee Water Works  
Bevan Baker, Commissioner of Health  
Aaron Szopinski, Research and Analysis Manager

From: Kate Pawasarat, Community Analytics Analyst

Subject: Analysis of Properties with Lead Service Lines

### I. Overview

The following is a summary of information on properties with lead service lines in the City of Milwaukee. The analysis is based on information received from Milwaukee Water Works on April 27, 2016, the City of Milwaukee Master Property File (MPROP) as of May 23, 2016, the Strong Neighborhood Plan Map Application of Map Milwaukee as of May 25, 2016, and 5-year estimates from the US Census Bureau, 2010-2014 American Community Survey.

A brief summary of key points is provided below:

#### Properties with Lead Service Lines

- There are approximately 74,600 properties with lead service lines in the City of Milwaukee.
- Based on property assessment class information, 91.5% of properties with lead service lines are residential.
- Approximately 68,300 residential properties or 54.2% of all residential properties in the City of Milwaukee have lead service lines.

#### Location of Residential Properties with Lead Service Lines

- Aldermanic Districts 10 and 14 have the largest numbers of residential properties with lead service lines. The two districts collectively account for over a quarter of residential properties with lead service lines in the city.
- Nearly half of the city's residential properties with lead service lines are located in four aldermanic districts (Districts 6, 7, 10, and 14).
- Aldermanic Districts 2 and 9 do not have lead service lines within their district boundaries, with the exception of one city block in the southeastern portion of District 2.



Characteristics of Residential Properties with Lead Service Lines

- Among residential properties with lead service lines, the median year that property structures were built is 1921 and the median total property assessment is \$76,800.
- Approximately 62.6% of residential properties with lead service lines are owner occupied.
- Approximately 10.4% of residential properties with lead service lines have at least one year of delinquent taxes due.
- Roughly 1,600 residential properties with lead service lines are vacant, according to Department of Neighborhood Services information (city-owned property is not included in the residential assessment class).

City-Owned Properties with Lead Service Lines

- Approximately 856 properties with lead service lines are owned by the City of Milwaukee or Housing Authority of the City of Milwaukee.

Residential Properties with Lead Service Lines and Income

- Approximately 60% of residential properties with lead service lines are located in a census tract with a median household income below the city median household income of \$35,489.

**II. Counting Lead Service Lines**

Milwaukee Water Works maintains data on lead service lines by water account. In the vast majority of cases, one water account is associated with one property and one lead service line. However, there are some instances where an individual property can have multiple water accounts and/or multiple lead service lines. In addition, in some cases a single lead service line provides water to multiple properties with multiple water accounts. As a result, the number of lead service lines is slightly different than the number of water accounts or properties with lead service lines, as shown in the table below.

**Table 1. Counts for Lead Service Lines**

	<b>NUMBER</b>
Number of lead service lines	74,962
Water accounts with lead service lines	75,238
Properties with lead service lines	74,587

This document focuses on *properties* with lead service lines in the City of Milwaukee. In particular, much of the analysis is concerned with the characteristics of residential properties with lead service lines.

**III. Assessment Class for Properties with Lead Service Lines**

The Master Property File (MPROP) contains information on each property's assessment class. Approximately 91.5% of properties with lead service lines are associated with the residential assessment class. The residential assessment class includes single family, two-family, and three family dwellings as well as vacant land where the most likely use would be residential development. A summary of properties with lead service lines by assessment class is provided in the table below.

**Table 2. Assessment Class for Properties with Lead Service Lines**

ASSESSMENT CLASS	NUMBER OF PROPERTIES WITH LEAD SERVICE LINES	PERCENT
Residential	68,284	91.5%
Mercantile	2,901	3.9%
Manufacturing	80	0.1%
Special Mercantile	173	0.2%
Condominiums	104	0.1%
Mercantile Apartments (4 or more units)	1,643	2.2%
Exempt	1,402	1.9%
<b>Total</b>	<b>74,587</b>	

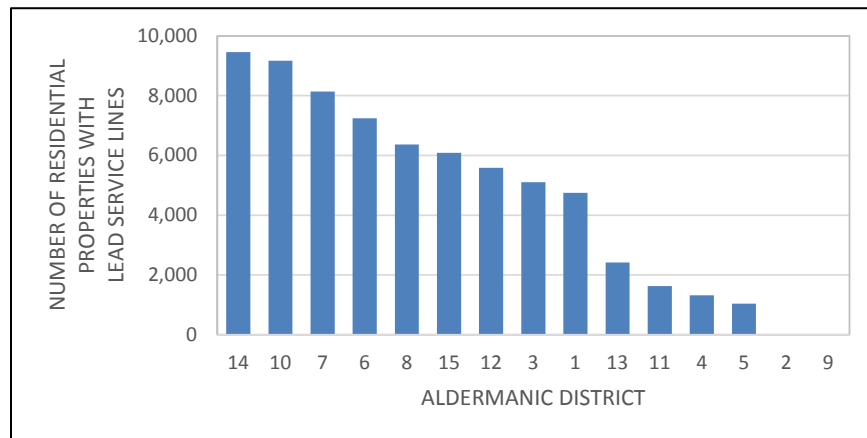
**IV. Location of Residential Properties with Lead Service Lines**

Table 3 provides a summary of residential properties with lead service lines by aldermanic district. Aldermanic Districts 14 and 10 have the largest number of residential properties with lead service lines, accounting for 13.8% and 13.4% of the city’s residential properties with lead service lines, respectively. The two districts collectively account for over a quarter of residential properties with lead service lines in the city. Furthermore, nearly half of the city’s residential properties with lead service lines are located in four aldermanic districts (Districts 6, 7, 10, and 14). More detailed information on the location of residential properties with lead service lines is provided in a map at the end of this document.

**Table 3. Residential Properties with Lead Service Lines by Aldermanic District**

ALD. DISTRICT	NUMBER OF RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES	PERCENT OF RESIDENTIAL PROPERTIES IN DISTRICT WITH LEAD SERVICE LINES	PERCENT OF RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES CITYWIDE
1	4,747	49.2%	7.0%
2	7	0.1%	0.01%
3	5,104	94.3%	7.5%
4	1,315	82.0%	1.9%
5	1,036	9.7%	1.5%
6	7,243	90.4%	10.6%
7	8,139	74.9%	11.9%
8	6,361	96.9%	9.3%
9	0	0.0%	0.0%
10	9,166	83.0%	13.4%
11	1,627	13.8%	2.4%
12	5,585	93.1%	8.2%
13	2,413	23.8%	3.5%
14	9,452	85.7%	13.8%
15	6,089	78.5%	8.9%
<b>TOTAL</b>	<b>68,284</b>	<b>54.2%</b>	<b>100.0%</b>

**Figure 1. Residential Properties with Lead Service Lines by Aldermanic District**



The proportion of residential properties with lead services also varies by aldermanic district. In Districts 3, 6, 8, and 12, over 90% of residential properties have lead service lines. In contrast, less than 25% of residential properties in Districts 2, 5, 9, 11, and 13 have lead service lines.

**V. Characteristics of Residential Properties with Lead Service Lines**

*a. Year Built*

Among residential properties with lead service lines, the median year that property structures were built is 1921. A quarter of properties with lead service lines have a structure built in 1904 or earlier and a quarter have a structure built in 1929 or later.

**Table 4. Year Built for Residential Properties with Lead Service Lines**

QUARTILE	YEAR BUILT
LOWER QUARTILE (25 <sup>TH</sup> PERCENTILE)	1904
MEDIAN (50 <sup>TH</sup> PERCENTILE)	1921
UPPER QUARTILE (75 <sup>TH</sup> PERCENTILE)	1929

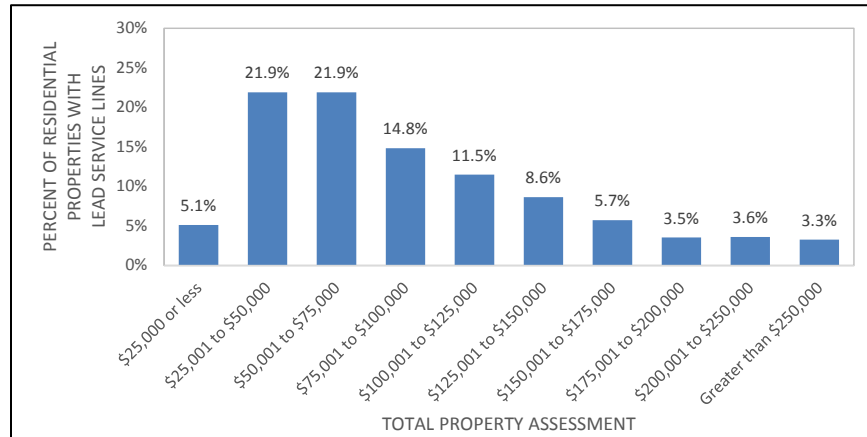
*b. Total Property Assessment*

The median total property assessment for improved residential properties with lead service lines is \$76,800. For comparison, the median assessed value for residential property in the City of Milwaukee is \$91,100, according to the Assessor’s Office Residential Property Profile for 2016. In addition, 25% of residential properties with lead service lines are assessed at \$47,700 or below and 25% of properties are assessed at \$124,400 or more. The distribution of total property assessments for residential properties with lead service lines is shown in Figure 2 below.

**Table 5. Total Property Assessment for Residential Properties with Lead Service Lines**

QUARTILE	TOTAL PROPERTY ASSESSMENT
LOWER QUARTILE (25 <sup>TH</sup> PERCENTILE)	\$47,700
MEDIAN (50 <sup>TH</sup> PERCENTILE)	\$76,800
UPPER QUARTILE (75 <sup>TH</sup> PERCENTILE)	\$124,400

**Figure 2. Total Property Assessment for Residential Properties with Lead Service Lines**



*c. Owner Occupancy*

Among residential properties with lead service lines, 62.6% of properties are owner occupied. Owner occupancy rates for properties with lead services vary by aldermanic district, with the highest owner occupancy rate in District 13 at 86.9% and the lowest owner occupancy rate in District 15 with 45.1%, as shown in the table below.

**Table 6. Owner Occupancy Rates for Residential Properties with Lead Service Lines by Aldermanic District**

ALDERMANIC DISTRICT	NUMBER OF OWNER OCCUPIED RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES	OWNER OCCUPANCY RATE FOR RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES
1	2,796	58.9%
2	3	-
3	2,968	58.2%
4	628	47.8%
5	896	86.5%
6	3,442	47.5%
7	4,487	55.1%
8	4,353	68.4%
9	-	-
10	6,573	71.7%
11	1,387	85.2%
12	3,095	55.4%
13	2,098	86.9%
14	7,257	76.8%
15	2,749	45.1%
<b>TOTAL</b>	<b>42,732</b>	<b>62.6%</b>

*d. Tax Delinquency*

Among residential properties with lead service lines, approximately 7,084 properties (10.4%) have at least one year of delinquent taxes due. In addition, 3,383 of those properties have at least two years of delinquent taxes due. Tax delinquency varies by aldermanic district, with the highest rate of tax delinquency for properties with lead service lines in District 15 at 24.1% and the lowest rate in District 5 at 1.1%.

**Table 7. Tax Delinquency for Residential Properties with Lead Service Lines by Aldermanic District**

<b>ALDERMANIC DISTRICT</b>	<b>NUMBER OF TAX DELINQUENT RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES</b>	<b>PERCENT OF RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES THAT ARE TAX DELINQUENT</b>
<b>1</b>	766	16.1%
<b>2</b>	1	-
<b>3</b>	117	2.3%
<b>4</b>	190	14.4%
<b>5</b>	11	1.1%
<b>6</b>	1,615	22.3%
<b>7</b>	1,203	14.8%
<b>8</b>	422	6.6%
<b>9</b>	-	-
<b>10</b>	363	4.0%
<b>11</b>	21	1.3%
<b>12</b>	560	10.0%
<b>13</b>	54	2.2%
<b>14</b>	295	3.1%
<b>15</b>	1,466	24.1%
<b>TOTAL</b>	<b>7,084</b>	<b>10.4%</b>

*e. Vacant Residential Properties with Lead Service Lines*

Among residential properties with lead service lines, approximate 1,631 properties are known to be vacant, based on Department of Neighborhood Services information available through Map Milwaukee. Districts 15 and 6 have the largest numbers of vacant residential properties with lead service lines, as shown in the table below.

**Table 8. Vacant Residential Properties with Lead Service Lines by Aldermanic District**

<b>ALDERMANIC DISTRICT</b>	<b>NUMBER OF VACANT RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES</b>	<b>PERCENT OF VACANT RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES</b>
<b>1</b>	138	8.5%
<b>2</b>	-	
<b>3</b>	41	2.5%
<b>4</b>	65	4.0%
<b>5</b>	6	0.4%
<b>6</b>	280	17.2%
<b>7</b>	219	13.4%
<b>8</b>	100	6.1%
<b>9</b>	-	
<b>10</b>	154	9.4%
<b>11</b>	14	0.9%
<b>12</b>	139	8.5%
<b>13</b>	30	1.8%
<b>14</b>	101	6.2%
<b>15</b>	344	21.1%
<b>TOTAL</b>	<b>1,631</b>	<b>100.0%</b>

**VI. City-Owned Properties with Lead Service Lines**

Approximately 856 properties with lead service lines are owned by the City of Milwaukee or the Housing Authority of the City of Milwaukee. Of the city-owned properties with lead service lines, approximately 769 were acquired through *in rem* tax foreclosure.

**VII. Residential Properties with Lead Service Lines and Income**

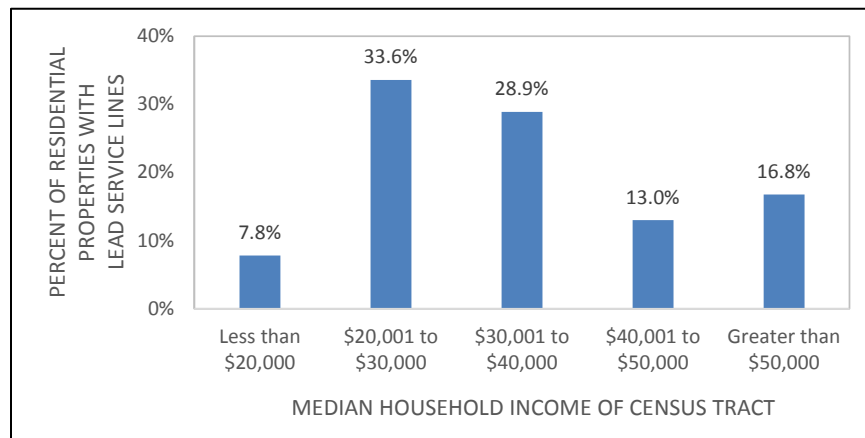
Although income data is not readily available on an individual household level, median household income data by census tract can provide general information on income characteristics across the city. However, it is important to note that because of sampling variability, median household income estimates for census tracts may not be statistically different from one another.

Table 9 provides a summary of median household income by census tract for residential properties with lead service lines. Approximately 41% of residential properties with lead service lines are located in a census tract with a median household income of \$30,000 or below. In addition, approximately 70% of residential properties with lead service lines are located in a census tract with a median household income of \$40,000 or below. More detailed information on median household income by census tract is also provided in a map at the end of this document.

**Table 9. Median Household Income of Census Tracts for Residential Properties with Lead Service Lines**

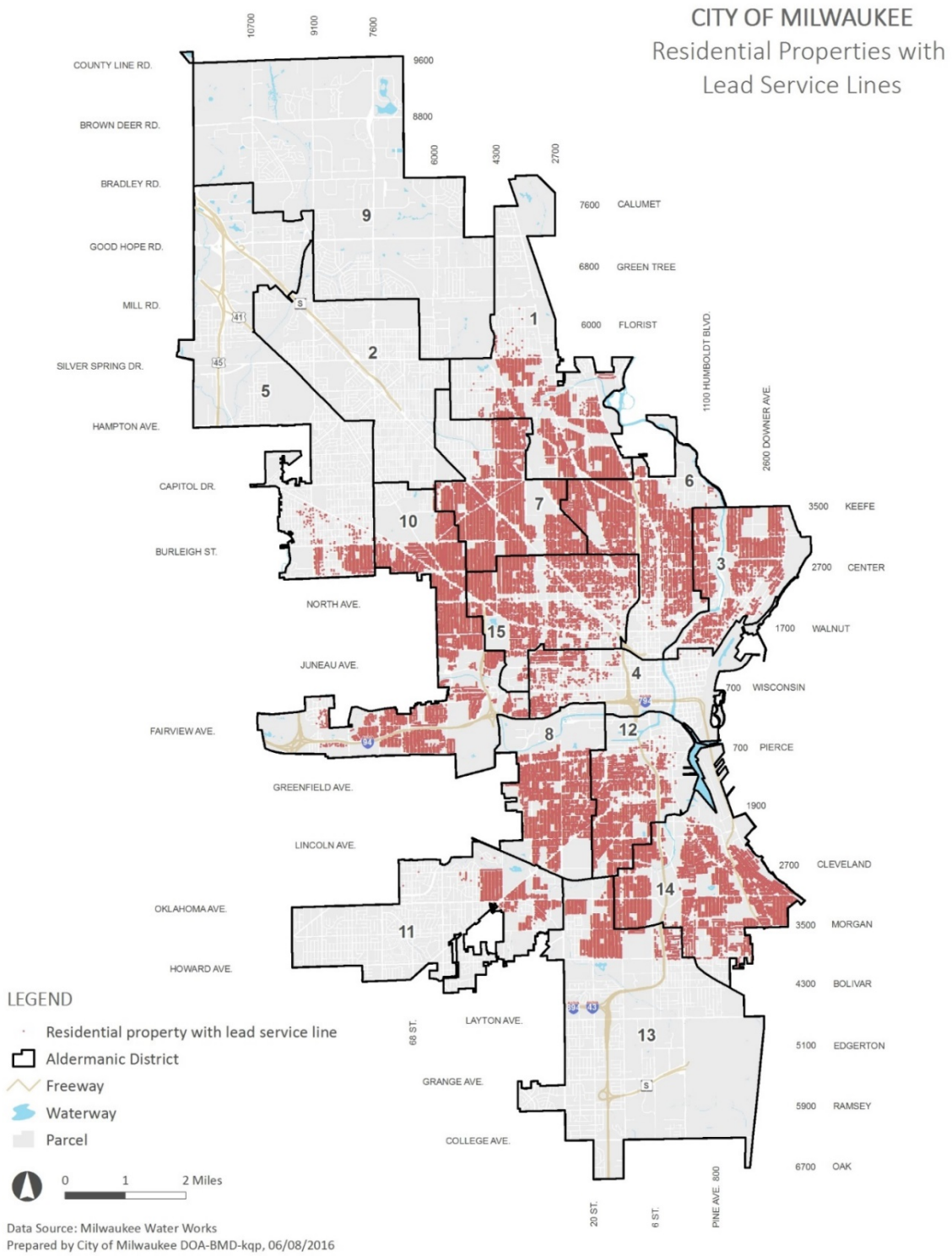
MEDIAN HOUSEHOLD INCOME OF CENSUS TRACT	NUMBER OF RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES	PERCENT OF CITY'S RESIDENTIAL PROPERTIES WITH LEAD SERVICE LINES
<b>\$20,000 OR LESS</b>	5,328	7.8%
<b>\$20,001 TO \$30,000</b>	22,926	33.6%
<b>\$30,001 TO \$40,000</b>	19,720	28.9%
<b>\$40,001 TO \$50,000</b>	8,863	13.0%
<b>GREATER THAN \$50,000</b>	11,447	16.8%

**Figure 3. Median Household Income of Census Tracts for Residential Properties with Lead Service Lines**

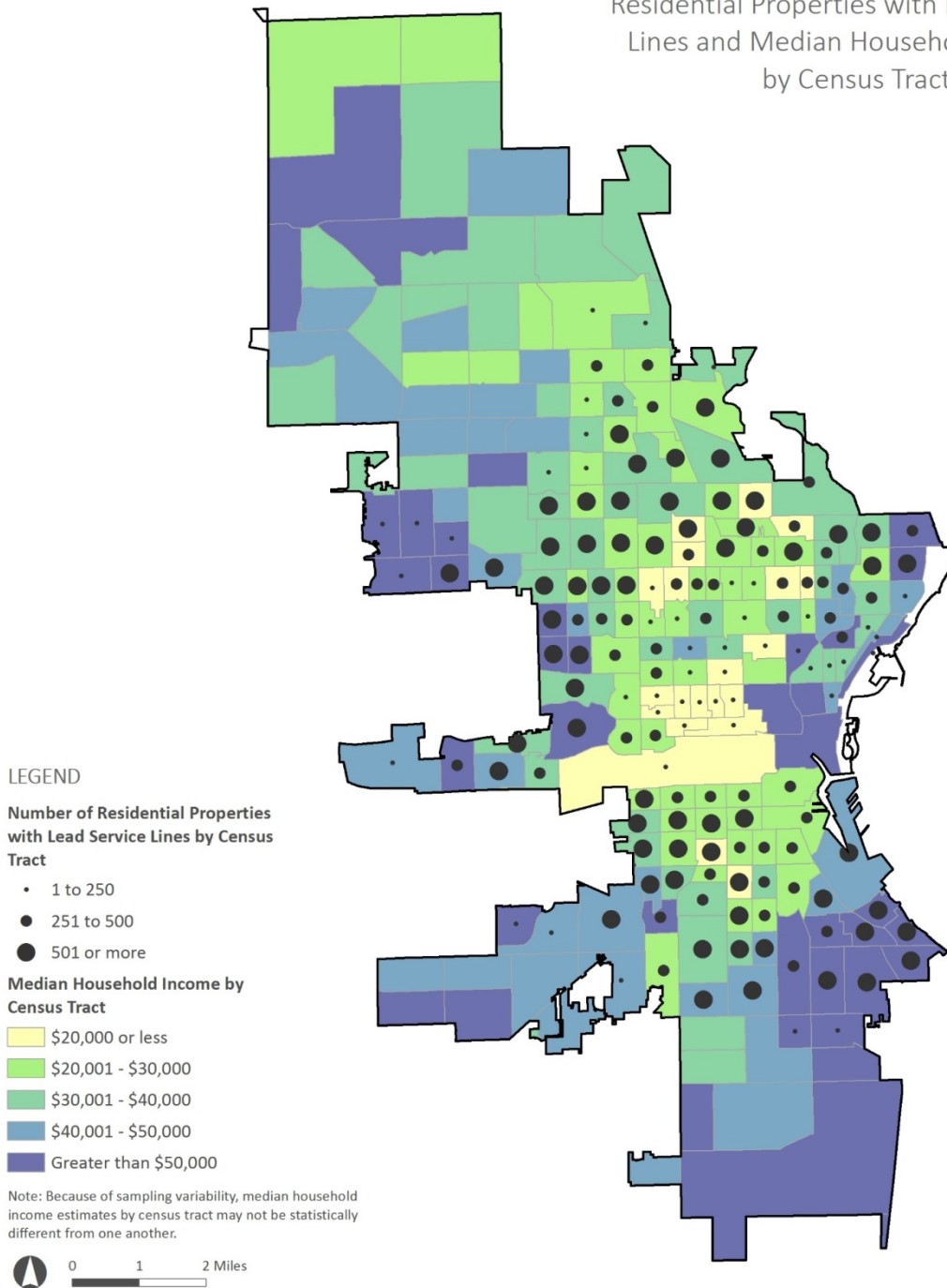


For comparison, the median household income for the City of Milwaukee is \$35,489. Approximately 60% of residential properties with lead service lines are located in a census tract with a median household income below the city median.





CITY OF MILWAUKEE  
Residential Properties with Lead Service  
Lines and Median Household Income  
by Census Tract



Data Source: Milwaukee Water Works, US Census Bureau 2010-2014 American Community Survey 5-Year Estimates  
Prepared by City of Milwaukee DOA-BMD-kqp, 06/08/2016

KP:dmr

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