

Final

Downtown / Uptown Market Analysis and Infrastructure Assessment

The Village of Hawthorn Woods

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AVAILABLE



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Table of Contents

Executive Summary	3
Infrastructure Assessment.....	13
Economic and Demographic Trends	34
Commercial Real Estate Market Analysis	48
Retail Sales Analysis.....	80
Residential Market Analysis	104
Fiscal Perspective	120
Appendix	128

Executive Summary



Core Findings

Introduction

AECOM was engaged by the Village of Hawthorn Woods, IL to analyze residential and commercial real estate markets and trends, with emphasis on the defined uptown and downtown areas of Hawthorn Woods. The intent of the analysis is to assess options for provision of municipal infrastructure in the identified downtown and uptown areas. This report provides an overview of real estate, economic, demographic, and housing trends in Hawthorn Woods and surrounding geographies to evaluate the current position of Hawthorn Woods' real estate market compared to the Greater Chicago Area, state and the national levels.

Water and Sewer Infrastructure

AECOM completed a high-level water and wastewater infrastructure needs assessment for the uptown and downtown area of the Village of Hawthorn Woods. Based on information provided by Aqua, the Village could utilize Aqua to accommodate future growth in the downtown area. However, Aqua infrastructure is currently unable to meet the Village's future utility needs in the uptown area. While the Village of Mundelein could meet a large portion of the Village's utility needs in the Uptown area, Mundelein is a part of the Central Lake County Joint Action Water Agency (CLCJAWA), which would need to approve the new connection. Additionally, the Village may need to obtain its own IDNR Lake Michigan water allocation. Alternatively, the Village of Hawthorn Woods could create their own utility to meet projected demands in both the downtown and uptown areas. The following is summary of water and wastewater utility infrastructure options. Supporting information is contained in the body of this report and appendix

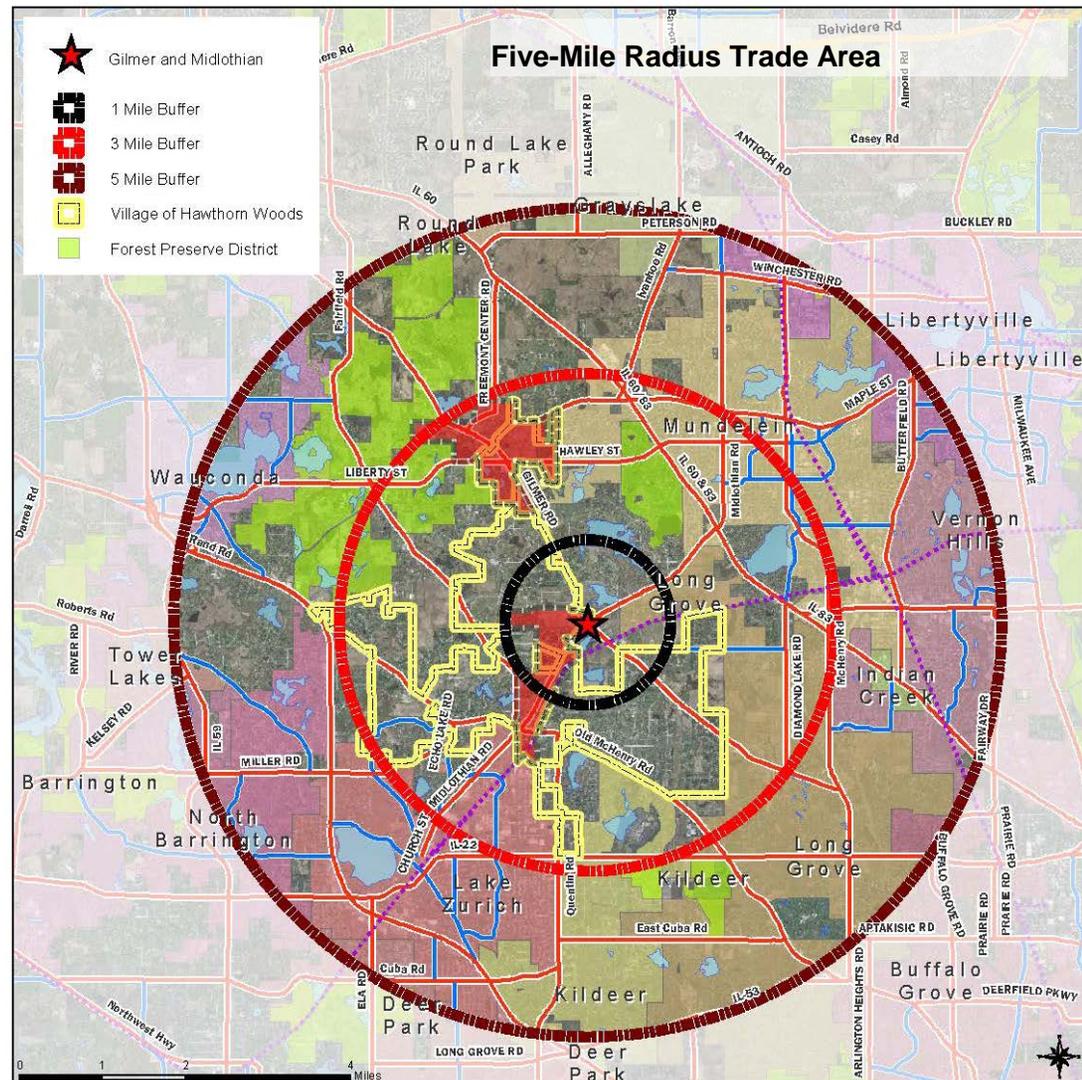
Water and Wastewater Infrastructure Summary

	Downtown Area	Uptown Area²	Combined Downtown and Uptown Area
Utility Provider	Aqua	Mundelein ^{2,3}	Hawthorn Woods
Engineer's Opinion of Probable Construction Cost	\$7,500,000 ¹	\$32,000,000	\$99,500,000 ⁴
1. Others may possibly pay for this work (Aqua, Toll, developers, etc.). However, it should be noted that Aqua would likely pass any costs on to customers by raising utility rates.			
2. The Village is still in discussions with Aqua regarding possible utility service in the Uptown area.			
3. Hawthorn Woods would likely need to own and operate/maintain the future utility system.			
4. Includes new wells, water treatment plant, and wastewater treatment plant. However, the wastewater treatment plant may not be a viable option due to the distance to the Fox and Des Plaines rivers and associated extension costs, which are not included in this table.			

Retail / Commercial Market

Hawthorn Woods is situated in a unique area of Lake County where considerable household income and correspondingly larger inventories of retail space are concentrated. Within a 5-mile trade area over 50% of retail sales in Lake County (and almost 75% of all furniture sales) are generated. Reflective of higher incomes, retail rents (\$17/sf) trend above county (\$14/sf) and regional (\$16/sf) averages. Trade area retail inventory per capita is significant (82 sf/ person), along with retail vacancies (about 9%), both above regional averages. For Hawthorn Woods, attractive incomes and very limited retail space translate into roughly \$95 million in retail sales leakage, lost dollars to other municipalities.

While the impact of internet spending on brick and mortar retail is clear (significant store closures in 2017), consumers are continuing to spend. Across Chicago, while construction of new retail space remains well below pre-recession levels, new projects are being built. For example, Kildeer Village Square is a 200,000 sf shopping center that opened in 2017 near the intersection of Rand Road and Plum Grove Road; the project is reportedly 95% occupied. Melody Farm is a 270,000 sf center planned for a 2018 opening in Vernon Hills; Whole Foods has committed to this project.



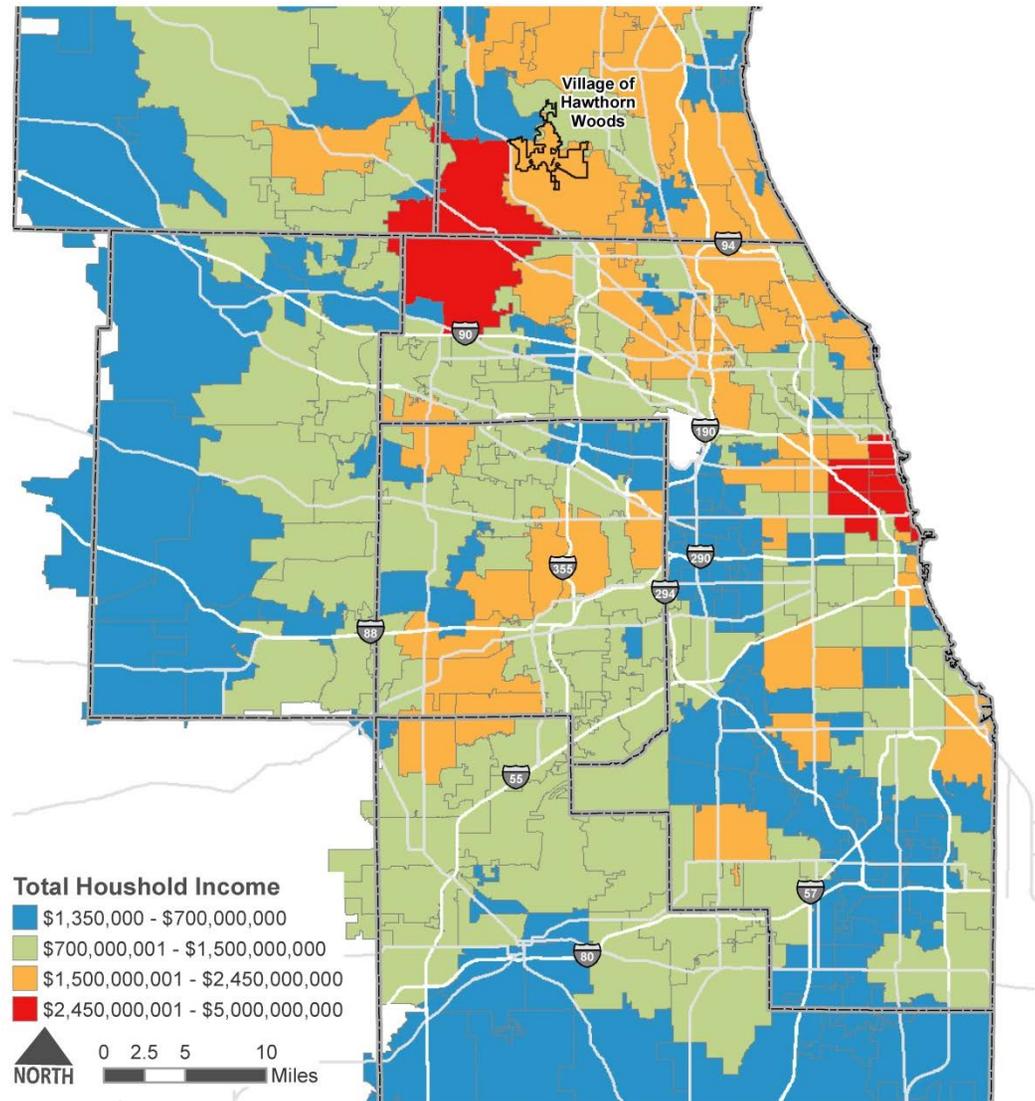
Retail / Commercial Market (Cont'd)

While growth in internet retail and a general over-supply of retail space point to limited opportunities, Hawthorn Woods is adjacent to one of three regionally significant clusters of income (in excess of \$14 billion) and retail space. The other two areas are the north side of Chicago, and in DuPage County surrounding Downers Grove.

For Hawthorn Woods, future retail targets will likely include restaurant, drug store, and gas/convenience, as well as banking, with stores approaching lease expiration as a logical focus. The analysis also identified opportunities for medical office and office showroom / flex space.

As the retail market will remain highly competitive, Village officials and property owners will need to ensure that key sites are “ready to go” in terms of zoning and entitlements.

As part of future retail positioning, the community should consider additional traffic counts for key intersections to validate existing traffic count data reported by the Illinois Department of Transportation (IDOT).



Hawthorn Woods Retail Market Study - Chicago MSA Total Household Income

Demographic Context

Hawthorn Woods is a highly educated area with approximately one in four residents having earned a graduate degree. In 2016, income per capita in Hawthorn Woods was about \$63,000, more than double average incomes in Illinois and the US.

Office Market

Despite increases in office inventory, the amount of occupied office space within the 5-mile market has continued to decline since 2006. Weakness likely reflects challenges with suburban Chicago office markets, which have seen a steady flight of companies who have shifted headquarters to downtown Chicago. Sources such as the New York Times have documented location decisions made by companies like McDonalds, General Electric, Kraft Heinz, and Motorola to relocate headquarters to downtown locations. While these moves speak to corporate interest in pursuing millennial workers, they also speak to corporate downsizing and a trend toward headquarters locations with smaller headcounts.

Office markets are being influenced by companies who have moved to open office layouts, reducing average office space / job down toward 150 sf / person, particularly in professional services. Also, new banking regulations that require banks to set aside higher capital levels for real estate investments have forced developers to make greater equity contributions, backed by credit worthy tenants and pre-leasing requirements.

Industrial Market

Regional industrial markets have grown considerably since 2009, linked with the emergence of third-party logistics providers and

internet order fulfilment. As a result, industrial is the one commercial real estate segment where the pace of new construction in 2016 has exceeded pre-recession levels regionally. Within 5 miles of Hawthorn Woods, industrial markets have been similarly resilient, with both rents above regional averages and growth in occupancy. While office uses are not typically sales tax generators, light industrial, flex, and office / showroom uses can generate sales tax.

Residential Market

The residential market conversation for Hawthorn Woods builds from a positive context, in that the pace of new residential construction in the community has exceeded pre-recession averages, a trend that is distinct across Lake County. At the same time, US Census data highlights a concentration of larger homes in Hawthorn Woods (76% with > 8 rooms), with a corresponding lack of smaller single-family homes, as well as condos and townhouses. In terms of underlying demand, while the total number of households in Hawthorn Woods has increased by 2% annually since 2000, the number of people in each household has decreased over the same period, speaking to a market in transition. While listing prices for single-family homes are typically higher in Hawthorn Woods, they are not as valuable on a price / sf basis (\$161/SF) compared to other communities (Barrington @ \$207/SF and Libertyville @ \$196/SF). When put in context with above-average median age levels as well as a significant number of homes on the market in Hawthorn Woods (roughly 4% of inventory for sale), the analysis points to transition, with interest in smaller homes, in a larger county-wide market where there are very few smaller homes in walkable locations.

Municipal Fiscal Context

Public sector revenues and expenses for Hawthorn Woods were reviewed in context with a larger sample of municipalities across Lake County who complete a comprehensive annual financial statement (CAFR). The analysis showed that Hawthorn Woods takes in less revenue and spends fewer funds per citizen compared to other cities within the Lake County sample. This reality is generally consistent with being a non-home rule municipality; available potential revenue streams are more limited by state statute compared to home rule municipalities. Primary government debt outstanding in Hawthorn Woods has increased since 2005, to a 2014 value of \$1,041 per capita.

Study Area Development Capacity

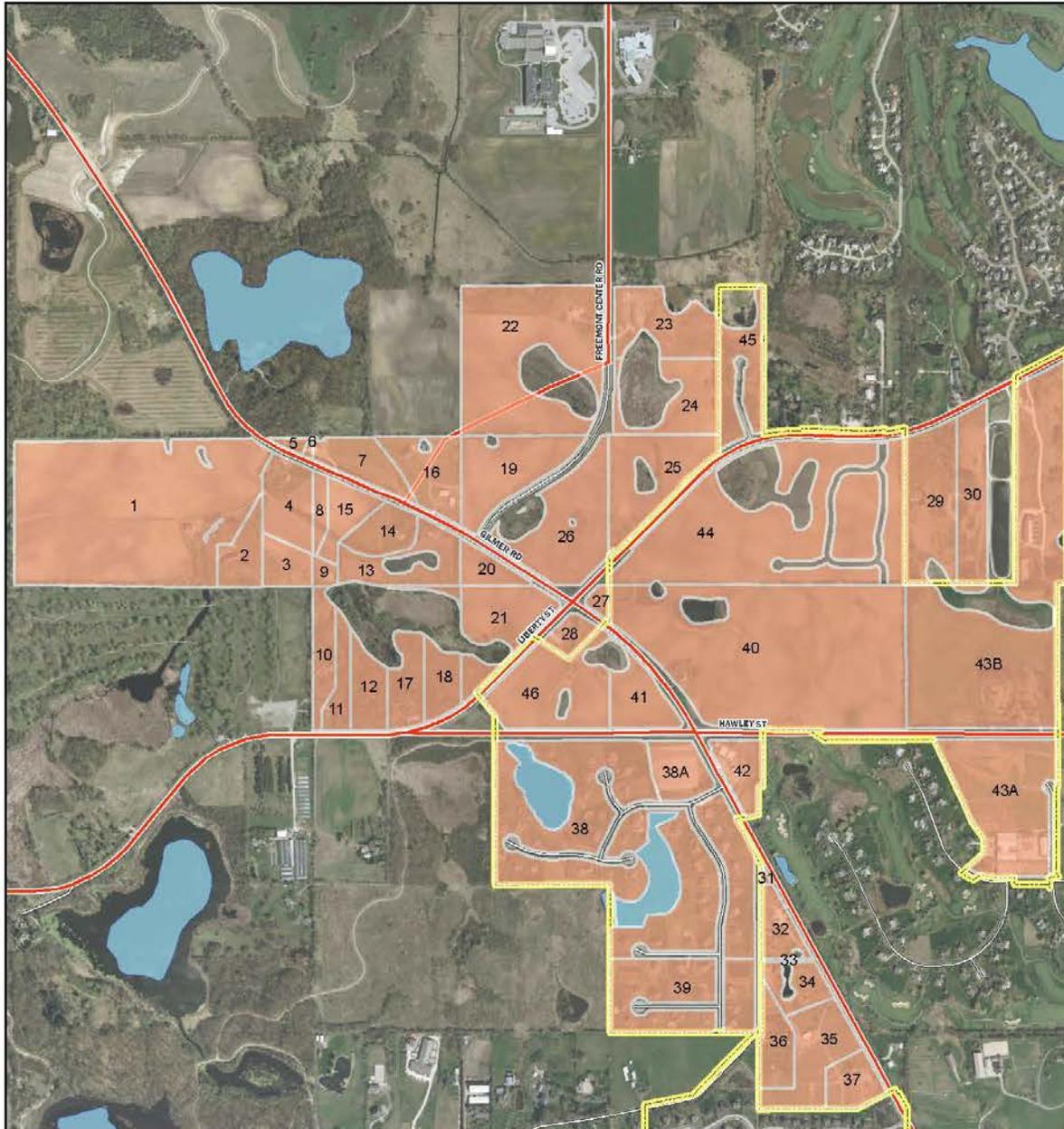
As part of the high-level water and wastewater infrastructure needs assessment for the uptown and downtown areas, AECOM developed an estimate of the number of parcels that may be developed in the future. The following table summarizes estimated acreage, potential housing unit counts and commercial square footage. Assumptions covered in the body of the report support these identified future development capacities. The assumptions are based on an average residential density of 4 units per acre across all parcels, with gross acreage converted down to net “developable” acreage by excluding mapped wetlands and road right-of-way. All commercial uses assume development at a modest 13% lot coverage ratio, based on data provided by Village Staff. These assumptions then drive calculations of potable water and wastewater requirements and resulting PE ratios.

Figure 1 - Downtown Area, Existing and Proposed Development Potential

	Downtown	Uptown
Existing Retail / Commercial Space	193,600 sf	10,300 sf
Planned Retail / Commercial Space	847,200 sf	438,900 sf
Existing / Under Construction Housing Units	316 du	50 du
Planned Housing Units	341 du	2,364

As the village moves forward with infrastructure planning for the Uptown area in particular, consideration should be given to a master planning exercise that incorporates the array of land owners in the Uptown area as stakeholders. Future development of Uptown will require significant infrastructure upgrades as well as changes to existing roads, as well as likely need to discuss incentives such as tax increment financing (TIF). Given the magnitude of costs that are anticipated, the clear benefit of a master plan will be to help property owners make informed decisions about their holdings in context and balance with broader Village policy goals. The analysis also highlights the eventual need for a trail connection between Uptown and Downtown. Lastly, for the downtown area, likely eventual need for grade separations over or under the Canadian National rail corridor should be incorporated in future planning.

Village of Hawthorn Woods, Illinois Uptown Parcel Map

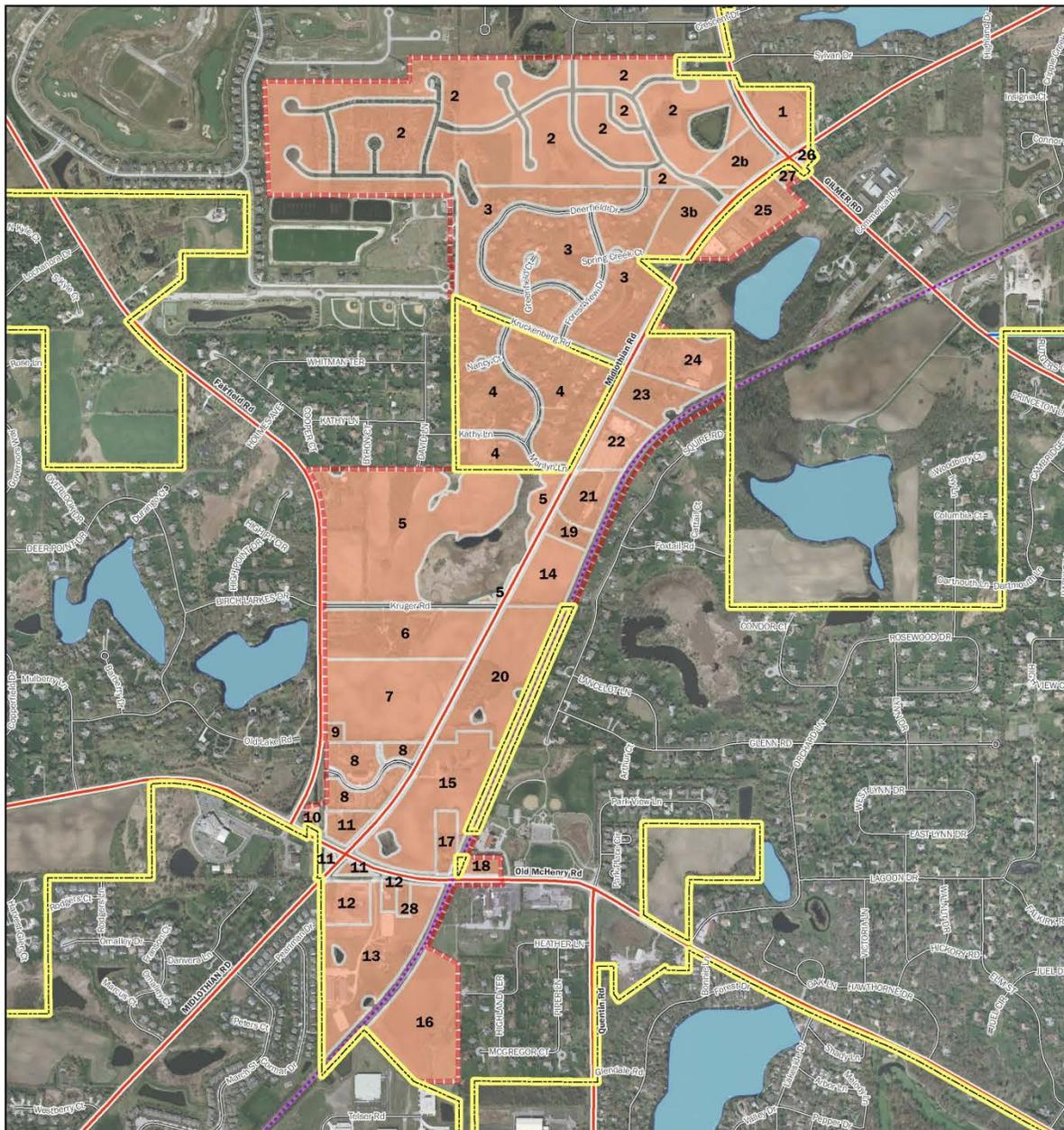


- Hawthorn Woods-Uptown Parcels
- Village of Hawthorn Woods

ID	Parcel	Gross Acreage	Net Acreage
1	Steffenhagen Prop 1	60.60	60.20
2	Steffenhagen Prop 2	5.00	5.00
3	Steffenhagen Prop 3	3.90	3.90
4	Steffenhagen Prop 4	7.40	7.40
5	Nicholas & Mireya Puga	0.70	0.70
6	Lawrence P Hoffman 1	0.30	0.30
7	Lawrence P Hoffman 2	6.10	6.10
8	Steffenhagen Prop 5	1.90	1.90
9	Steffenhagen Prop 6	1.20	1.20
10	Gregory & Donna Di Piero	5.10	4.90
11	Cheryl Lynn Schinski	4.60	3.80
12	Robert G Tichy	9.60	5.30
13	Mark M & Kathy A Meade 1	9.70	8.10
14	Mark M & Kathleen S Meade 2	5.00	5.00
15	Steffenhagen Prop 7	4.60	4.60
16	Robert M Judge	8.60	8.40
17	John P Reindl	9.40	5.90
18	William A & Joann C Mc Laughlin 1	8.60	5.00
19	Chicago Title Land Trust Co 1	12.40	12.10
20	Chicago Title Land Trust Co 2	3.30	3.30
21	Chicago Title Land Trust Co 3	12.40	10.70
22	Amarjit S & Jaswinder Sidhu, Trustees	37.90	32.00
23	Charles E Whitesell	13.60	10.00
24	William & Joann Mc Laughlin 2	14.30	8.50
25	Bank Of Waukegan	13.80	12.80
26	Chicago Title Land Trust Co 4	18.20	16.00
27	Chicago Title Land Trust Co 5	1.00	1.00
28	Pedro V Or Ydolina Borrego, Trustees	2.50	2.50
29	Robert & Maggie Luber	14.50	13.80
30	Thorngate Country Club	9.60	9.60
31	Ags Design Inc 1	0.20	0.20
32	Ags Design Inc 2	4.20	4.00
33	Scott Wood 1	0.30	0.30
34	Scott Wood 2	4.90	4.30
35	Fisher Burton Llc	10.10	10.10
36	William A & Catherine A Werner, Trustees	5.10	5.10
37	Fisher Burton Limited	4.60	4.60
38A	Countryside Glen Corner	6.10	5.80
38	Countryside Glen	65.50	50.10
39	Starzwood	16.90	16.90
40	Fiore	66.10	63.90
41	Lipschultz	7.30	6.40
42	Country Bumpkin	4.90	4.90
43A	Towne-South	20.00	18.60
43B	Towne-North	80.20	74.60
44	Winchester	55.40	47.20
45	Costekin	11.10	8.40
46	Archdiocese	16.20	14.80



Village of Hawthorn Woods, Illinois Area 2 Parcel Map

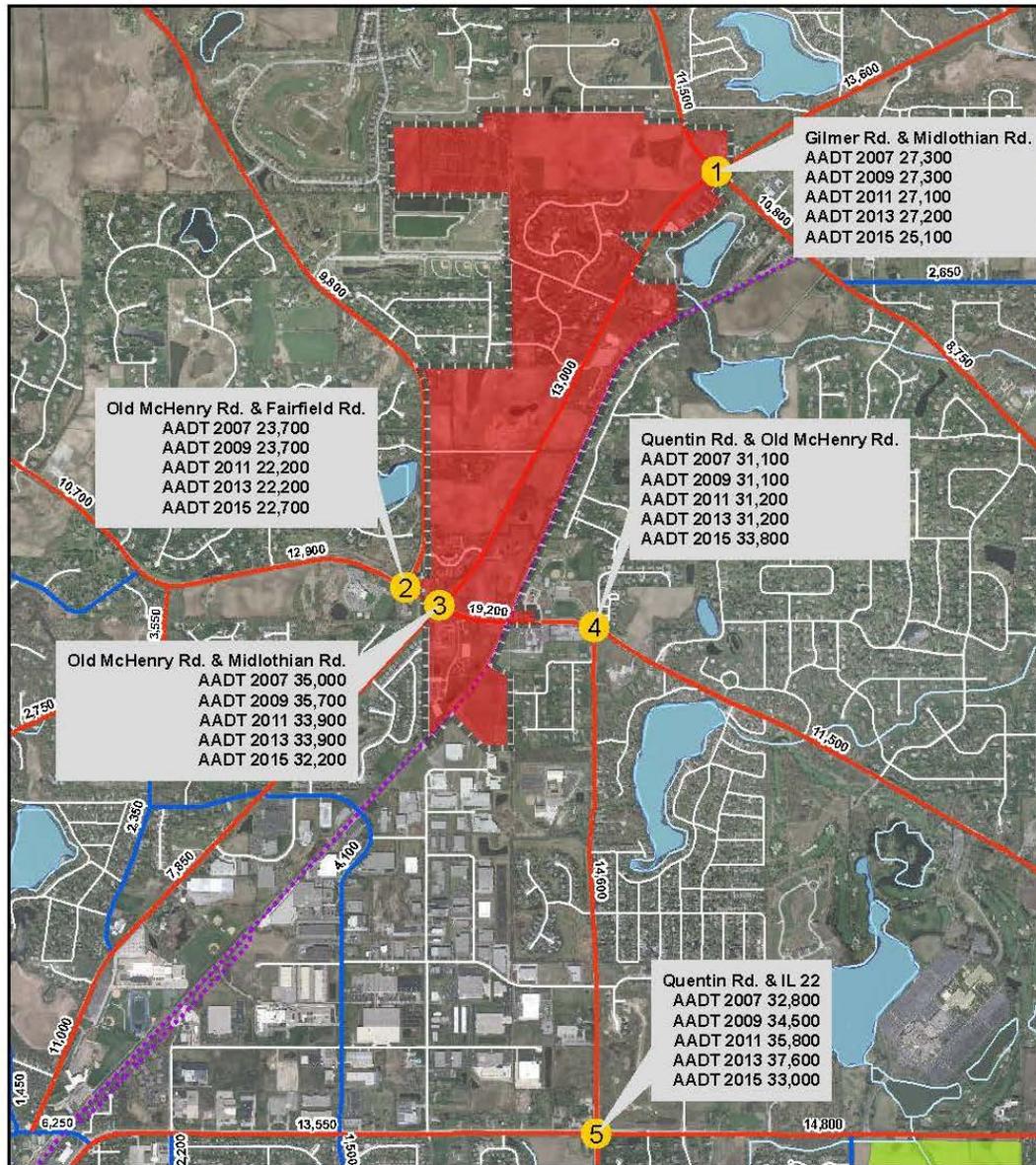


- Village of Hawthorn Woods
- Development Parcels (Sans Wetland)

ID	Parcel	Net Acreage	Gross Acreage
1	Cherry Hill Plaza	6.52	6.52
2	Hawthorn Hills/Pulte	96.36	106.65
2b	Hawthorn Hills/Pulte		5.62
3	Pheasant Ridge Estates	52.79	60.37
3b	HDB		7.00
4	Marilyn Road	37.99	37.99
5	62 Acres	45.48	60.46
6	Krueger	16.70	16.69
7	The Equitable Fund	20.78	20.79
8	HW Business Park	9.50	9.51
9	Krueger	0.79	0.79
10	Little House	0.50	0.50
11	3 Corners	3.44	3.44
12	Geffe	5.44	5.44
13	Old McHenry Farm	20.13	20.80
14	Property West of Railroad (Spizzirri)	7.47	7.47
15	The Equitable Funds (East)	19.57	20.47
16	Flex (Hummel)	17.58	17.58
17	Wilson	2.74	2.74
18	White/Thomas	1.45	1.46
19	Servin	2.00	2.00
20	Petrongaro/Manda	17.49	18.03
21	Schmechtig	5.27	5.27
22	Aquatic Center	5.82	5.82
23	Beck	6.13	6.34
24	McGuin/Chicago Trust	9.71	7.42
25	Midlothain Center (Unincorporated Lake County)	8.81	8.81
26	Gilmer Shell	0.38	0.38
	Gilmer Roadhouse		
27	(Unincorporated Lake County)	0.81	0.81
28	Wollberg	0.99	0.99



Village of Hawthorn Woods, Illinois Downtown IDOT 2015 Traffic Counts



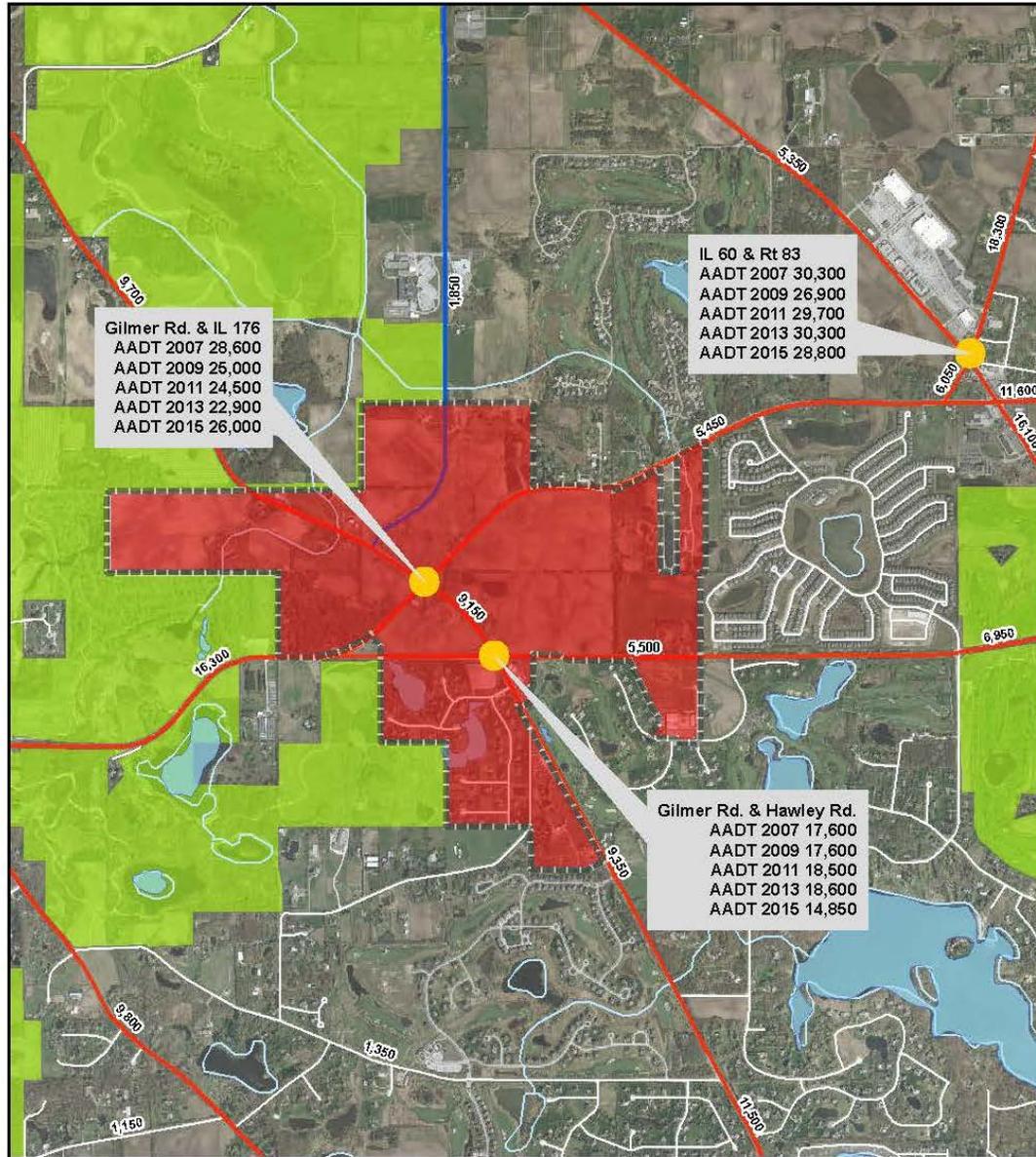
- Key Intersections
- ▭ Village of Hawthorn Woods
- ▭ Forest Preserve District of Lake County
- ▭ Downtown Study Area
- ≡ Interstate
- Expressway
- Arterial
- Collector

ID	Intersection	AADT 2007	Delta 07/09	AADT 2009	Delta 09/11	AADT 2011	Delta 11/13	AADT 2013	Delta 13/15	AADT 2015
1	Gilmer Rd. & Midlothian Rd.	27,300	0	27,300	-200	27,100	100	27,200	-2,100	25,100
2	Old McHenry Rd. & Fairfield Rd.	23,700	0	23,700	-3,500	22,200	0	22,200	500	22,700
3	Old McHenry Rd. & Midlothian Rd.	35,000	700	35,700	-1,800	33,900	0	33,900	-1,700	32,200
4	Quentin Rd. & Old McHenry Rd.	31,100	0	31,100	100	31,200	0	31,200	2,600	33,800
5	Quentin Rd. & IL 22	32,800	1,700	34,500	1,300	35,800	1,800	37,600	-4,600	33,000

Traffic count data for intersections within and adjacent to Hawthorn Woods was evaluated to understand whether traffic counts have recovered to pre-recession levels. In general, while intersections in the uptown area have yet to reach pre-recession levels, some intersections in the downtown area are rapidly approaching or have exceeded pre-recession levels. The analysis also points to the importance of roads such as Gilmer, Midlothian, and Old McHenry that connect through Hawthorn Woods to other job and shopping concentrations in Lake County.



Village of Hawthorn Woods, Illinois Uptown IDOT 2015 Traffic Counts



- Key Intersections
- Village of Hawthorn Woods
- Forest Preserve District of Lake County
- Uptown Study Area
- Interstate
- Expressway
- Arterial
- Collector

ID	Intersection	AAADT 2007	Delta 07/09	AAADT 2009	Delta 09/11	AAADT 2011	Delta 11/13	AAADT 2013	Delta 13/15	AAADT 2015
1	Gilmer Rd. & IL 176	28,600	-3,600	25,000	-300	24,500	-3,600	22,900	3,100	26,000
2	Gilmer Rd. & Hawley Rd.	17,600	0	17,600	900	18,300	100	18,600	-3,750	14,850



Infrastructure Assessment



Introduction

Though the Village of Hawthorn Woods does have some existing sewer infrastructure, wastewater and potable water utility service is primarily provided to the Village by Aqua Illinois, Inc. (Aqua) and Lake County. In order to accommodate future Village growth and development, significant utility improvements are needed. Please note the following four maps (refer to the following pages):

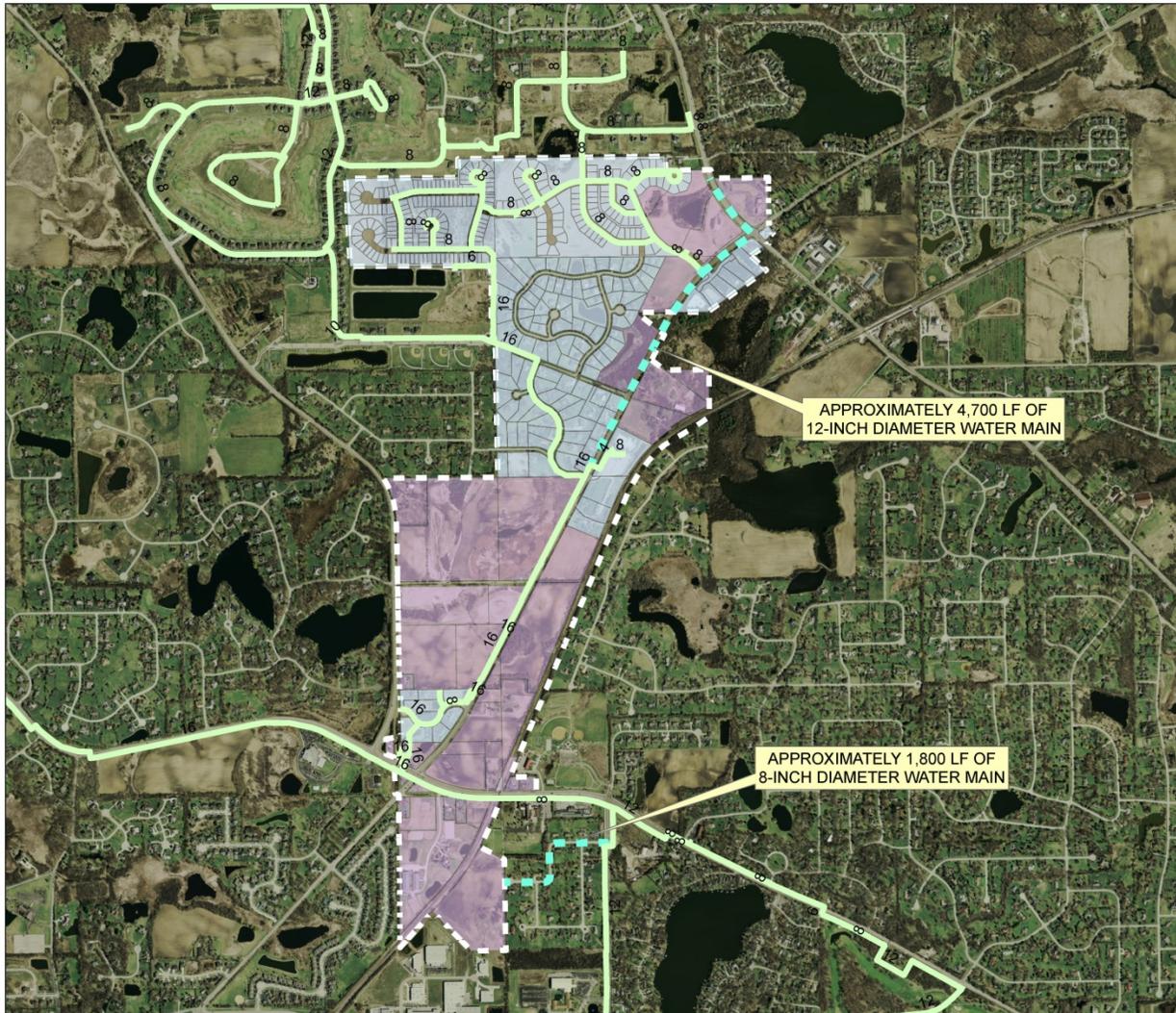
- Scenario A.1 – Aqua Potable Water (Downtown)
- Scenario A.1 – Aqua Sanitary Sewer (Downtown)
- Scenario B.2 – Hawthorn Woods Potable Water (Uptown)
- Scenario B.2 – Hawthorn Woods Sanitary Sewer (Uptown)

For the purposes of this report, the following utility providers were considered to accommodate future Village growth:

- Aqua
- Village of Mundelein
- Village of Hawthorn Woods
- Lake County
- Lake Zurich

For the purposes of this analysis, it was assumed that the study areas (i.e. Downtown and Uptown, refer to the maps on the following pages) will be served by separate utility systems, though it may be possible to combine the downtown and uptown areas for some alternatives, as will be discussed below. Based on discussions and input from Village staff, each parcel in the study areas were allocated a water and wastewater demand (see Appendix A). Estimated parcel demands in each area were then added together to estimate the future projected demands in the downtown and uptown areas.

For the purposes of the engineer's opinion of probable construction costs in this infrastructure assessment, ENR Construction Cost Indices (CCI) = 10,693 (May, 2017). Costs are based on recently bid projects, RS Means, and engineering experience. Refer to Appendix B for additional cost details and backup data.



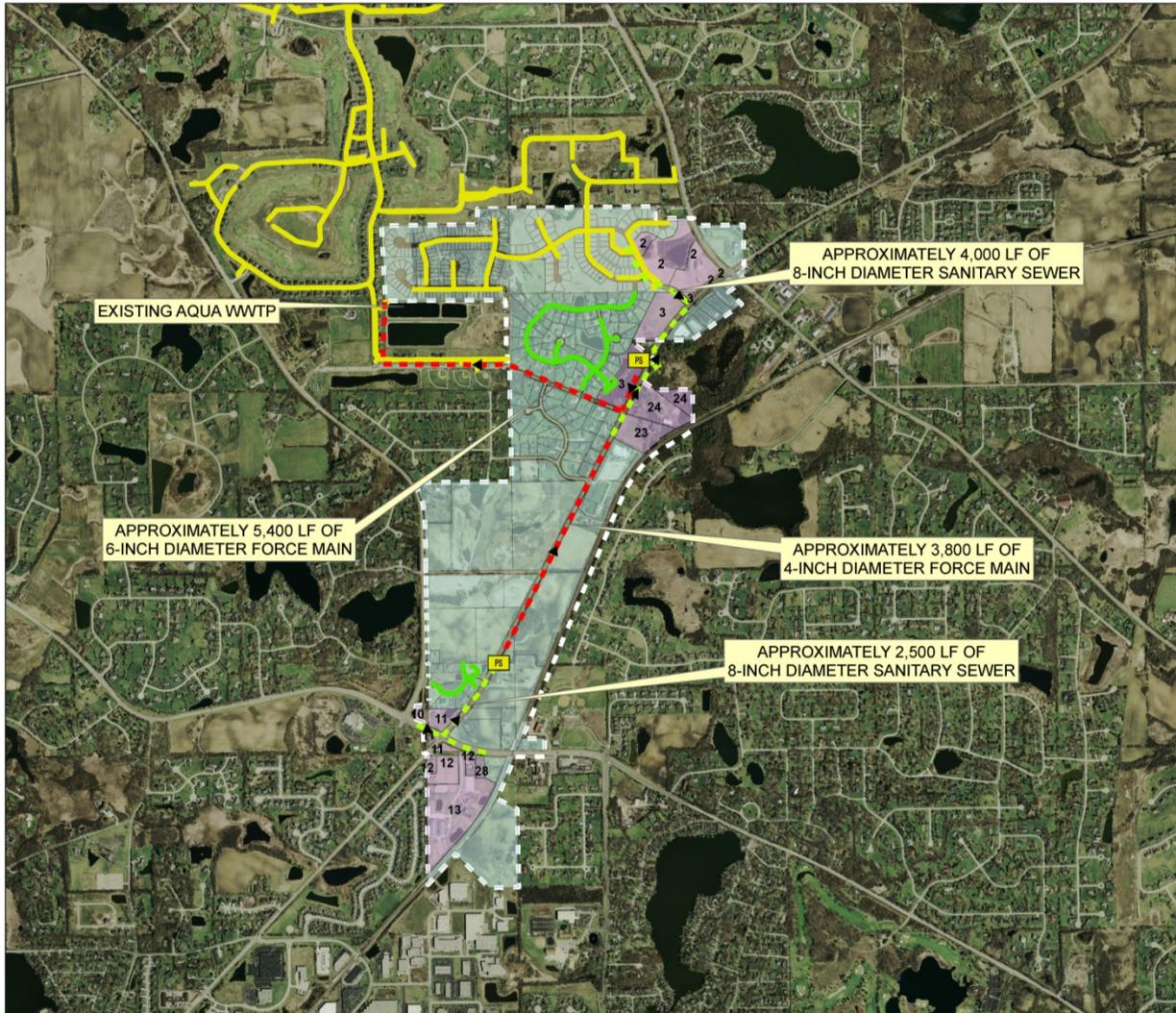
SCENARIO A.1 - AQUA POTABLE WATER (DOWNTOWN)

- Existing Water Main (Aqua)
- - - Proposed Water Main (Aqua)
- - - Study Area
- Light Blue Box Downtown Parcels (Existing Water Service Provided)
- Purple Box Downtown Parcels for Possible Future Development

NOTE:
 1. IT IS ASSUMED THAT DEVELOPERS WILL BE RESPONSIBLE FOR THE COST OF CONSTRUCTING ADDITIONAL UTILITIES AS NEEDED IN ORDER TO CONNECT TO THE UTILITY LOCATIONS SHOWN ON THIS MAP.

Village of Hawthorn Woods, Illinois





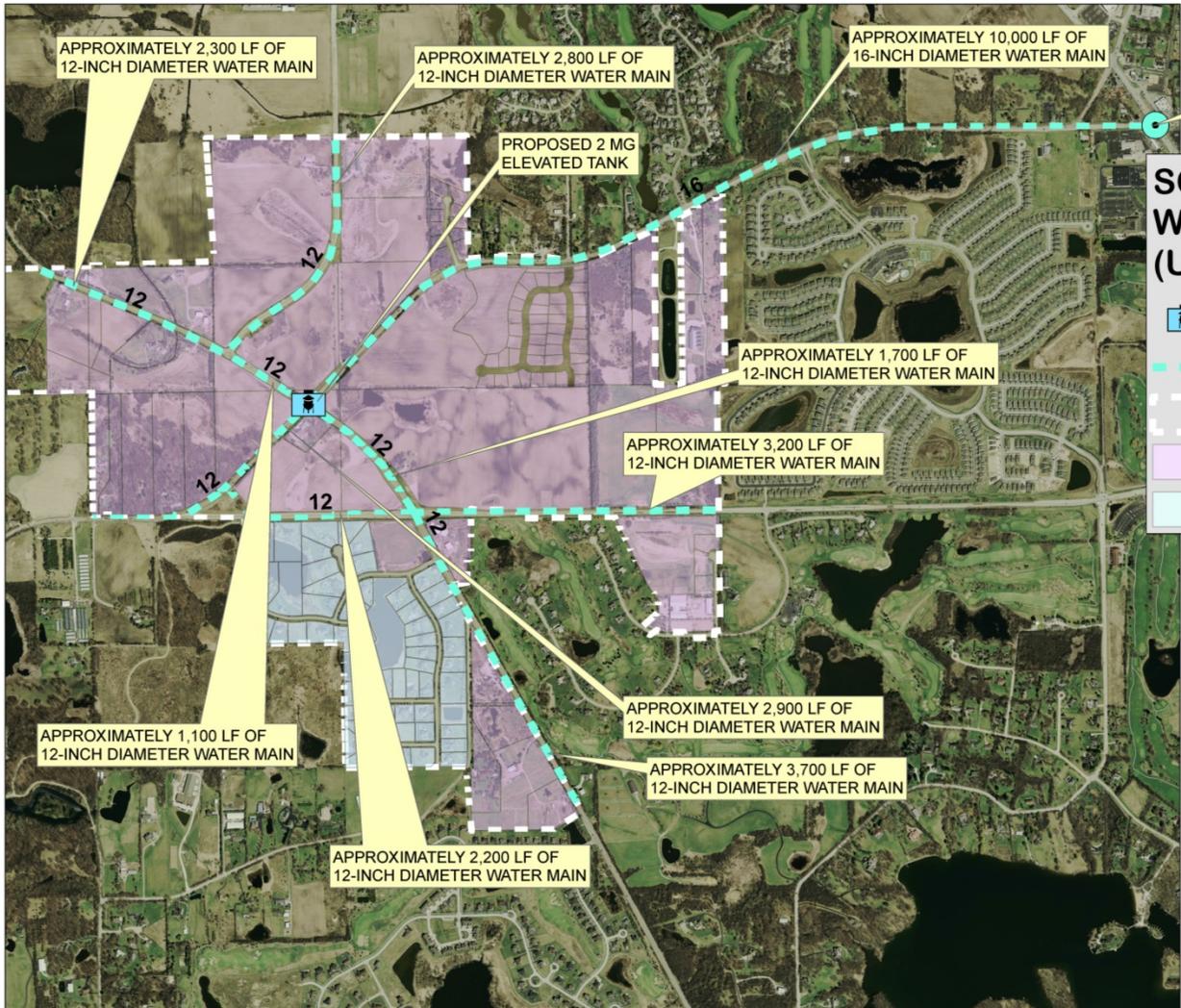
Village of Hawthorn Woods, Illinois

SCENARIO A.1 - AQUA SANITARY SEWER (DOWNTOWN)

- PS New Lift Station (Aqua)
- Existing Sewer (Other)
- Existing Sewer (Aqua)
- - - Proposed Force Main (Aqua)
- - - Proposed Sewer (Aqua)
- Study Area
- Downtown Parcels for Possible Future Development
- Downtown Parcels (Sewer Service Already Provided)

NOTES:
 1. SANITARY SEWER SERVICE FOR SSA4 PROPERTIES WILL BE PROVIDED BY THE EXISTING HAWTHORN WOODS SANITARY SEWER COLLECTION SYSTEM (COLLECTION SYSTEM NOT SHOWN IN THIS MAP). IT IS ASSUMED THAT NON-SSA4 PROPERTIES CANNOT BE SERVED BY EXISTING VILLAGE SEWER INFRASTRUCTURE.
 2. IT IS ASSUMED THAT DEVELOPERS WILL BE RESPONSIBLE FOR THE COST OF CONSTRUCTING ADDITIONAL UTILITIES AS NEEDED IN ORDER TO CONNECT TO THE UTILITY LOCATIONS SHOWN ON THIS MAP.
 3. THESE PARCELS HAVE SEWER SERVICE THROUGH EXISTING AGREEMENTS (SSA4, LAKE COUNTY, PUBLIC WORKS BUILDING AT 35 OLD MCHENRY ROAD, COMMUNITY PARK RESTROOMS, ETC.).



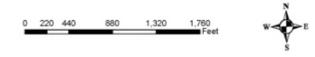


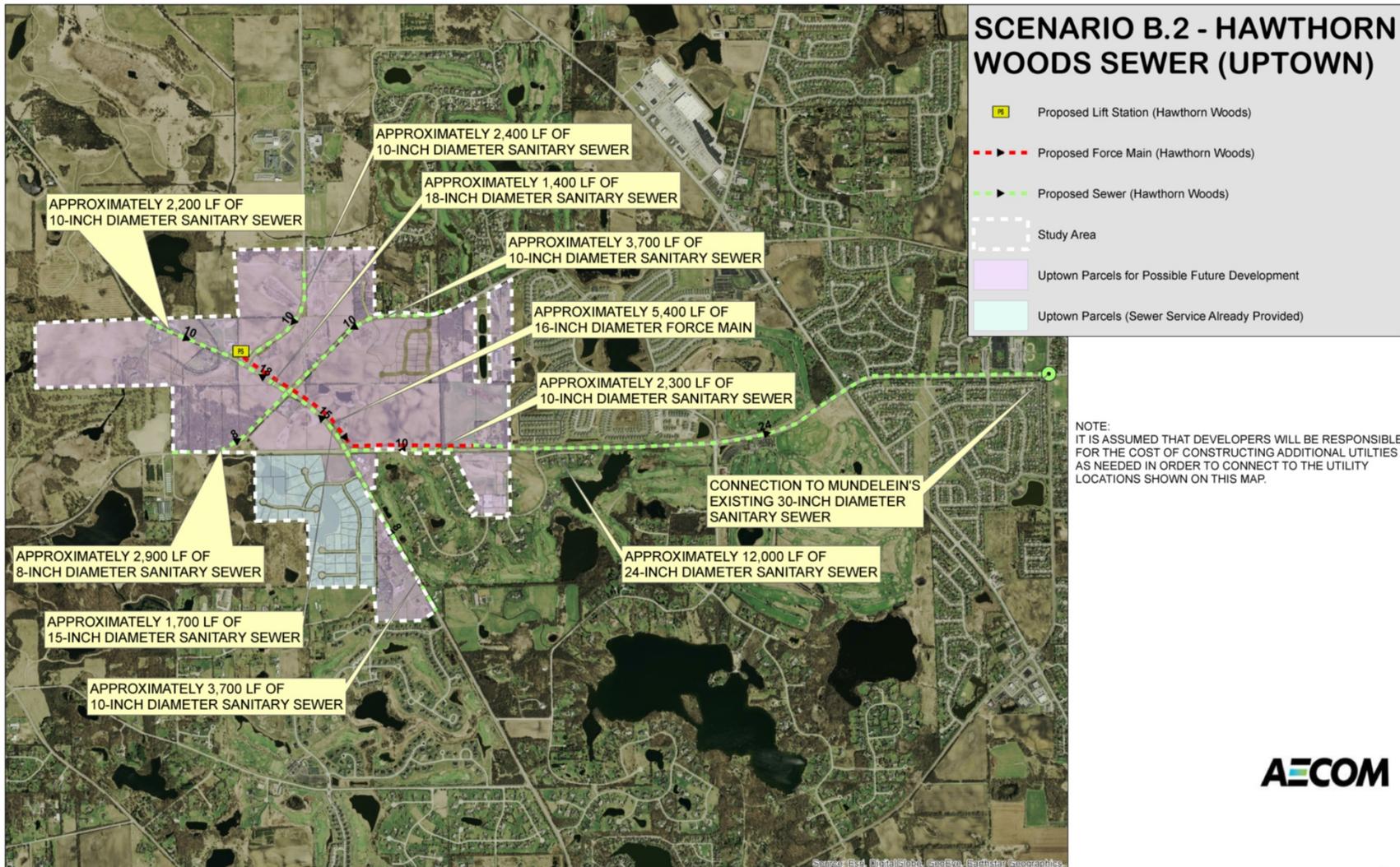
SCENARIO B.2 - HAWTHORN WOODS POTABLE WATER (UPTOWN)

- Proposed 2 MG Elevated Water Storage Tank (Hawthorn Woods)*
*Location not determined at this time; for illustrative purposes only.
- Proposed Water Main (Hawthorn Woods)
- Study Area
- Uptown Parcels
- Uptown Parcels (No Utility Service Needed)

NOTE:
IT IS ASSUMED THAT DEVELOPERS WILL BE RESPONSIBLE FOR THE COST OF CONSTRUCTING ADDITIONAL UTILITIES AS NEEDED IN ORDER TO CONNECT TO THE UTILITY LOCATIONS SHOWN ON THIS MAP.

Village of Hawthorn Woods, Illinois





Village of Hawthorn Woods, Illinois



The allocations of future demand are summarized below.

Figure 2 - Downtown Area, Existing and Proposed Development

	Units
Existing Retail / Commercial Space	193,600 sf
Planned Retail / Commercial Space	847,200 sf
Existing / Under Construction Housing Units	316 du
Planned Housing Units	341 du

Figure 3 - Uptown Area, Existing and Proposed Development

Uptown - Phase 1	Units
Existing Retail / Commercial Space	10,300 sf
Planned Retail / Commercial Space	438,900 sf
Existing / Under Construction Housing Units	50 du
Planned Housing Units	2,364

The assumptions are based on an average residential density of 4 units per acre across all parcels, with gross acreage converted down to net “developable” acreage by excluding mapped wetlands. All commercial uses assume development at a modest 13% lot coverage ratio, based on data provided by Village Staff. For the uptown area, a “mixed use” classification was introduced to allow for provision of commercial and residential uses within a given parcel. These assumptions then drive calculations of potable water and wastewater requirements and resulting PE ratios.

Scenario Development

Scenario A – Downtown Area

See below for a summary of future water and wastewater projections in the downtown area:

Figure 4 - Downtown Area, Potable Water

Category	Future Water Demand Requirements, gallons per day (gpd)
Average Day Demand ¹	343,000
Maximum Day Demand (1.8 x Average Day Demand)	617,400

1. See Appendix A for a detailed analysis of future demand projections.

Figure 5 - Downtown Area, Sewer

	Future Sewer Demand (gallons per day)	Future Sewer Demand (PE)
Total demand of all parcels ¹	346,000	3,460
Pulte parcels	77,000	770
SSA4 Properties ²	138,000	1,380
Other Properties ³	54,000	540
Net demand (Total demand of all parcels - Pulte - SSA4 - Other)	77,000	770
Peak Demand (Peaking Factor = 3.88 ⁴)	298,760	-

1. See Appendix A for a detailed analysis of future demand projections.

2. Sewer service for SSA4 properties will be provided by Hawthorn Woods and feed into Lake County's system via Lake Zurich.

3. Per discussions with the Village, Lake County will provide sewer service for parcels 1, 8, 11, 15, 17 and 18. Also, the Lake Zurich Sewer Agreement will cover parcels 10, 16, and 22.

4. See Illinois Title 35, Section 370, Figure 1, Appendix D, (refer to <ftp://www.ilga.gov/JCAR/AdminCode/035/03500370ZZ9996dR.html>). Assuming a population of 740, the peaking factor is approximately 3.88.

Scenario A.1 – Aqua (Downtown)

Aqua currently provides water and wastewater utility service to part of the downtown area. See Figure 5 for Aqua’s potable water capacity in the downtown area.

Figure 6 - Downtown Area – Existing Potable Water Capacity

Segment	Well Capacity, gpm ¹	Well Capacity, gpd ¹	Downtown Existing Avg. Day Demand (ADD), gpd ¹	Downtown Existing Maximum Day Demand ² (ADDx1.8), gpd	Additional Available Well Capacity during Maximum Day Demand, gpd
Well #1 at Midlothian/ Old McHenry	250	360,000	236,000	424,800	655,200 ³
Well #2 at Midlothian/ Old McHenry	500	720,000			
Well #1 near Country Club ³	800	1,152,000			
TOTAL	1,550	2,232,000		-	

1. Provided by Aqua at meeting with AECOM on July 1, 2016.

2. Maximum day demand is the largest volume of water pumped on any single day during the year (typically during the hot, summer months).

3. In order to meet 10 State Standards (i.e. the IEPA standard for wells), the largest pump must be assumed to be out of service. Therefore, the additional available well capacity is 655,200 gpd (2,232,000 – 1,152,000 – 424,800).

Based on Figures 4 and 5, the projected demand (617,400 gpd) is less than Aqua’s available capacity (655,200 gpd). Therefore, Aqua infrastructure could be used to meet future Village demand. It should also be noted that improvements to Aqua’s existing infrastructure would be required, which include the following:

- Modifications to existing wells (discussions with Aqua indicated that improvements were needed in order to provide the capacities shown in Figure 5).
- Increased capacity of Aqua’s proposed elevated water storage tank. If this scenario is selected, the tank capacity may need to be increased from 0.5 million gallons to approximately 1.2 million gallons (see Figure 7). Alternatively, Aqua could proceed with building their proposed 0.5 million gallon tank as currently planned. Then at a later time (if the Village needed), a second elevated storage tank could be constructed.

Figure 7 - Downtown Area – Existing Potable Water Capacity

	Recommended Storage (gallons)
Existing Average Day Demand Conditions	236,000 ¹
Additional Future Average Day Demand	343,000 ²
Fire Flow Protection	630,000 ³
Total Recommended Storage	1,209,000
1. Refer to Figure 5, "Existing Average Day Demand".	
2. Refer to Figure 3, "Average Day Demand".	
3. Fire flow is typically assumed to be 3,500 gpm for 3 hours (or 630,000 gallons) in accordance with Table 1-1 of AWWA M31.	

- New water main. Refer to map "Scenario A.1 – Aqua Potable Water (Downtown)"
- It is assumed that the above improvements would be paid by either Aqua or property developers, though it should be noted that Aqua would likely raise the Village's water rates to pay for these improvements. Additionally, while Aqua did indicate they would construct the required well modifications, as well as provide increased elevated water tank storage, it is not clear if they will construct new water mains unless the need for the utility service already exists. Therefore, the Village will need to consider other options to pay for the new water mains. The following figure provides a summary of the potential improvements that may be required for this scenario.

Figure 8 - Downtown Area, Potable Water Improvements – Engineer’s Opinion of Probable Construction Cost

Item	Quantity	Units	Unit Cost	Total Cost
12-inch diameter water main ¹	4,700	LF	\$220	\$1,034,000
8-inch diameter water main ¹	1,800	LF	\$200	\$360,000
Well Modifications	1	LS	By Aqua	
Proposed Elevated Water Storage Tank	1	LS	By Aqua	
Subtotal				\$1,394,000
Contingency at 30%				\$418,200
Engineering at 15%				\$209,100
Total				\$2,000,000^{2,3,4,5}
1. Aqua or a developer(s) may pay for this work. It should be noted that Aqua would likely pass any costs on to the Village by raising water rates.				
2. Rounded to the nearest \$500,000.				
3. Land acquisition not included.				
4. Utility relocation not included.				
5. Refer to Appendix B for additional cost details and backup.				

See following figure for wastewater treatment capacity for Aqua in the downtown area.

Figure 9 - Downtown Area – Existing Aqua Wastewater Treatment Capacity – Phase I¹

Capacity, PE	Existing Demand, PE	Available Capacity, PE
3,200	3,200	0

1. The information in this table was provided by Aqua (see email dated January 1, 2017).

Figure 10 - Downtown Area – Future Aqua Wastewater Treatment Capacity – Phase II (not yet constructed)¹

Capacity, PE	Existing Demand, PE	Available Capacity, PE
1,600	0	1,600

1. The information in this table was provided by Aqua (see email dated January 1, 2017).

Based on Figures 9 and 10, Aqua's available capacity (1,600 PE) exceeds the future, projected demand (740 PE, refer to Figure 5 and the Appendix). However, this will not be available until Phase II (i.e. the third lagoon) is constructed. However, Aqua infrastructure could be used to meet future Village demand. Improvements to existing infrastructure would be required, including the following:

- Improvements to the existing wastewater treatment plant (i.e. "Phase II").
- New sewers, lift stations and force main. Refer to map "Scenario A.1 – Aqua Sanitary Sewer (Downtown)"

It is assumed that the above improvements would be paid by Toll. Additionally, Toll did indicate they may be willing to construct the required Phase II treatment plant modifications. Therefore, the Village may need to consider other options to pay for the new sewer infrastructure, including sewers, force main and lift stations. Figure 11 is a summary of the potential improvements that may be required for this scenario.

Figure 11 - Downtown Area, Wastewater Improvements – Engineer’s Opinion of Probable Construction Cost

Item	Quantity	Units	Unit Cost	Total Cost
8-inch diameter sanitary sewer ¹	6,500	LF	\$200	\$1,300,000
4-inch diameter force main ¹	3,800	LF	\$175	\$665,000
6-inch diameter force main	5,400	LF	\$185	\$999,000
Lift Station ¹	2	EA	\$300,000	\$600,000
WWTP Modifications ¹	1	LS	By Toll	
Subtotal				\$3,564,000
Contingency at 30%				\$1,069,200
Engineering at 15%				\$534,600
Total				\$5,500,000^{2,3,4,5}

1. Toll may pay for this work (i.e. Phase II Expansion – Third Lagoon). However, the costs for the expansion have not been included in this table.

2. Rounded up to the nearest \$500,000.

3. Land acquisition not included.

4. Utility relocation not included.

5. Refer to Appendix B for additional cost details and backup.

Scenario A.2 – Village of Mundelein (Downtown)

Village staff indicated that utilizing the Village of Mundelein to provide utility service for the downtown area is not currently an option.

Scenario B – Uptown Area

The following figures summarize future water and wastewater projections in the uptown area:

Figure 12 - Uptown Area, Potable Water

	Future Water Demand Requirements, gpd
Average Day Demand ¹	1,100,000
Maximum Day Demand (1.8 x Average Day Demand)	2,000,000 ²

1. See Appendix A for a detailed analysis of future demand projections.

2. Rounded to the nearest 1,000,000.

Figure 13 - Uptown Area, Sewer

	Future Sewer Demand, gpd	Future Sewer Demand, PE
Total demand of all parcels ¹	1,100,000	11,000
Peak Demand (Peaking Factor = 2.91 ²)	3,201,000	-

1. See Appendix A for a detailed analysis of future demand projections.

2. See Illinois Title 35, Section 370, Figure 1, Appendix D (refer to <ftp://www.ilga.gov/JCAR/AdminCode/035/03500370ZZ9996dR.html>). Assuming a population of 11,000, the peaking factor is approximately 2.91.

Scenario B.1 – Aqua (Uptown)

Aqua currently provides water and wastewater utility service to the Ivanhoe system, which is located adjacent to the uptown area. See summary below for Aqua’s potable water capacity in the uptown area.

Figure 14 - Uptown Area – Existing Potable Water Capacity

	Well Capacity, gpm¹	Well Capacity, gpd¹	Uptown Existing Average Day Demand (ADD), gpd²	Uptown Existing Maximum Day Demand³ (ADDx1.8), gpd	Additional Available Well Capacity during Maximum Day Demand, gpd
Ivanhoe Well #1	220	316,800	66,500	119,700	197,100 ⁴
Ivanhoe Well #2	350	504,000			
TOTAL	570	820,800	-		

1. Provided by Aqua at meeting with AECOM on July 1, 2016.

2. Provided by Aqua in an email on January 10, 2017.

3. Maximum day demand is the largest volume of water pumped on any single day during the year (typically during the hot, summer months).

4. In order to meet 10 State Standards (i.e. the IEPA standard for wells), the largest pump (i.e. Well #2) must be assumed to be out of service. Therefore, the additional available well capacity is 197,100 gpd (820,800 – 119,700 – 504,000).

Based on above information, Aqua’s available capacity (197,100 gpd) during a maximum day demand scenario is far below the future, projected maximum day demand (2,000,000 gpd). Additionally, based on information provided by Aqua on May 1, 2017, Aqua's Ivanhoe Wastewater Treatment Plant is currently unable to meet the Village's future wastewater demands projected in the Uptown area.

Scenario B.2 – Village of Mundelein (Uptown)

Based on a meeting attended by the Village of Hawthorn Woods, Village of Mundelein, and AECOM on September 7, 2016, the following critical items are noted:

- Mundelein may have sufficient system capacity for water and sewer utilities, but this needs to be confirmed.
- Hawthorn Woods would likely need to own and operate the system
- Water Rates are currently 150% for external customers, though rates would still likely be cheaper than Aqua. Sewer rates are not marked up.
- Mundelein is a part of the Central Lake County Joint Action Water Agency (CLCJAWA), which would need to approve the new connection. Additionally, the Village may need to obtain its own IDNR Lake Michigan water allocation.

Mundelein indicated that they have a 30-inch diameter sewer interceptor at Hawley Street and Midlothian Road, as well as a 16-inch diameter water main at Route 83 and Route 176. Mundelein also has an 8-inch diameter sewer that ends at Hawley Street and La Vista Drive, which Hawthorn Woods may utilize. However, for the purposes of this study, it is assumed that Hawthorn Woods would connect to the 30-inch sewer and 16-inch water main in order to accommodate the future projected demand. Refer to the following maps:

- “Scenario B.2 – Hawthorn Woods Potable Water (Uptown)”
- “Scenario B.2 – Hawthorn Woods Sanitary Sewer (Uptown)”

Figure 15 - Uptown Area –Hawthorn Woods Pipe Sizing at the Mundelein Connection Points

	Uptown Area Design Flow, gpd	Uptown Area Design Flow, mgd	Pipe Diameter (inches)	Pipe Velocity (fps)
Water (Maximum Day Demand)	2,000,000	2.0	16	2.2 ¹
Sewer (Peak Flows)	3,201,000	3.2	24	2.0 ²
1. Velocity is within generally accepted design parameters.				
2. Minimum sewer pipe velocity required by the IEPA.				
3. The table above does not include peak hour rates or fire flows. However, depending on the final system design, the sizes in this table may still be sufficient to meet peak hour and/or fire flow demands. Preliminary engineering/design should include hydraulic modeling/analysis to confirm all pipe sizing (including those not listed in this table) and required facilities.				

Improvements to Mundelein’s system may be needed in the future to accommodate projected growth of Hawthorn Woods. Additionally, the uptown area may also need facilities for fire protection (e.g. elevated water storage tank, booster pump station, standpipe, etc.). However, this will need to be determined at a later time. It is also assumed that at least one sewer lift station (with force main) would be required to convey sewage to Mundelein.

The following figures summarize the improvements that are required for Scenario B.2 (utility connections with the Village of Mundelein).

Figure 16 - Uptown Area, Potable Water Improvements – Engineer’s Opinion of Probable Construction Cost

Item	Quantity	Units	Unit Cost	Total Cost
12-inch diameter water main	19,900	LF	\$220	\$4,378,000
16-inch diameter water main	10,000	LF	\$240	\$2,400,000
Meter Vault	1	LS	\$300,000	\$300,000
2 MG elevated storage tank	1	LS	\$4,750,000	\$4,750,000
Village of Mundelein Improvements (i.e. due to Hawthorn Woods connection at Route 83 and Route 176) ¹	1	LS	Unknown ²	
Subtotal				\$11,828,000
Contingency at 30%				\$3,548,400
Engineering at 15%				\$1,774,200
Total				\$17,500,000^{3,4,5,6}

1. At the September 7, 2016 meeting between the Villages of Mundelein and Hawthorn Woods, Mundelein indicated they had available capacity in their system. Given this, it is likely the existing Mundelein system can accommodate the future Hawthorn Woods demand without additional improvements. However, this should be confirmed by the Village of Mundelein. It should also be noted that Mundelein is a part of the Central Lake County Joint Action Water Agency (CLCJAWA), which would need to approve the new connection. Additionally, the Village may need to obtain its own IDNR Lake Michigan water allocation.
2. It is assumed that the Village of Hawthorn Woods would need to pay for any required improvements and/or additional required engineering/study,
3. Rounded up to the nearest \$500,000.
4. Land acquisition not included.
5. Utility relocation not included.
6. Refer to Appendix B for additional cost details and backup.

Figure 17 - Uptown Area, Wastewater Improvements – Engineer’s Opinion of Probable Construction Cost

Item	Quantity	Units	Unit Cost	Total Cost
8-inch diameter sanitary sewer	2,900	LF	\$200	\$580,000
10-inch diameter sanitary sewer	14,300	LF	\$210	\$3,003,000
15-inch diameter sanitary sewer	1,700	LF	\$250	\$425,000
18-inch diameter sanitary sewer	1,400	LF	\$260	\$364,000
24-inch diameter sanitary sewer	12,000	LF	\$320	\$3,840,000
16-inch diameter force main	5,400	LF	\$240	\$1,296,000
Lift Station (3 MGD)	1	LS	\$500,000	\$500,000
Village of Mundelein Improvements (i.e. due to Hawthorn Woods connection at Hawley St & Midlothian Rd) ¹	1	LS		Unknown ²
Subtotal				\$9,908,000
Contingency at 30%				\$2,972,400
Engineering at 15%				\$1,486,200
Total				\$14,500,000^{3,4,5,6}
1. At the September 7, 2016 meeting between the Villages of Mundelein and Hawthorn Woods, Mundelein indicated they had available capacity in their system. Given this, it is likely the existing Mundelein system can accommodate the future Hawthorn Woods demand without additional improvements. However, this should be confirmed by the Village of Mundelein.				
2. It is assumed that the Village of Hawthorn Woods would need to pay for any required improvements and/or additional required engineering/study,				
3. Rounded up to the nearest \$500,000.				
4. Land acquisition not included.				
5. Utility relocation not included.				
6. Refer to Appendix B for additional cost details and backup.				

Scenario C – Village of Hawthorn Woods (Downtown and Uptown Areas)

The Village of Hawthorn Woods could also build, own, operate and maintain their own water and wastewater utility for both the uptown and downtown areas. See Figures 16 and 17 for the Engineer’s Opinion of Probable Construction Cost.

Figure 18 - Downtown/Uptown Area, New Potable Water Distribution and Treatment System – Engineer’s Opinion of Probable Construction Cost

Item	Quantity	Units	Unit Cost	Total Cost
Water main	50,000	LF	\$225	\$11,250,000
2 MG elevated storage tank (Uptown)	1	LS	\$4,750,000	\$4,750,000
750,000 gallon elevated storage tank (Downtown)	1	LS	\$2,500,000	\$2,500,000
Deep well (1,000 gpm)	3	EA	\$2,000,000	\$6,000,000
Water Treatment Plant (3 mgd) ¹	1	LS	\$3,000,000	\$3,000,000
Subtotal				\$27,500,000
Contingency at 30%				\$8,250,000
Engineering at 15%				\$4,125,000
Total				\$40,000,000^{2,3,4,5}

1. Assumes treatment is only needed for radium and chlorine. Also includes a pump station.
2. Rounded up to the nearest \$500,000.
3. Land acquisition not included.
4. Utility relocation not included.
5. Refer to Appendix B for additional cost details and backup.

Figure 19 - Downtown/Uptown Area, New Wastewater Collection and Treatment System – Engineer’s Opinion of Probable Construction Cost

Item	Quantity	Units	Unit Cost	Total Cost
Sanitary sewer	35,000	LF	\$225	\$7,875,000
Lift Station	5	EA	\$400,000	\$2,000,000
Force Main	15,000	LF	\$200	\$3,000,000
Wastewater Treatment Plant (4 MGD) ¹	1	LS	\$28,000,000	\$28,000,000
Subtotal				\$40,875,000
Contingency at 30%				\$12,262,500
Engineering at 15%				\$6,131,250
Total				\$59,500,000^{2,3,4,5}
1. This assumes conventional and secondary treatment.				
2. Rounded up to the nearest \$500,000.				
3. Land acquisition not included.				
4. Utility relocation not included.				
5. Refer to Appendix B for additional cost details and backup.				

Anticipated wastewater effluent could be discharged to the Fox or Des Plaines River, but the exact location of the wastewater treatment plant is not known. Small streams or rivers may also be a possibility, though some additional treatment may be required (tertiary filters, etc.). It should be noted that these additional costs are not included in the table above, and that the concept of wastewater discharge may not be a viable option due to the distance to the Fox and Des Plaines rivers and associated extension costs.



Economic and Demographic Trends

Analysis Process

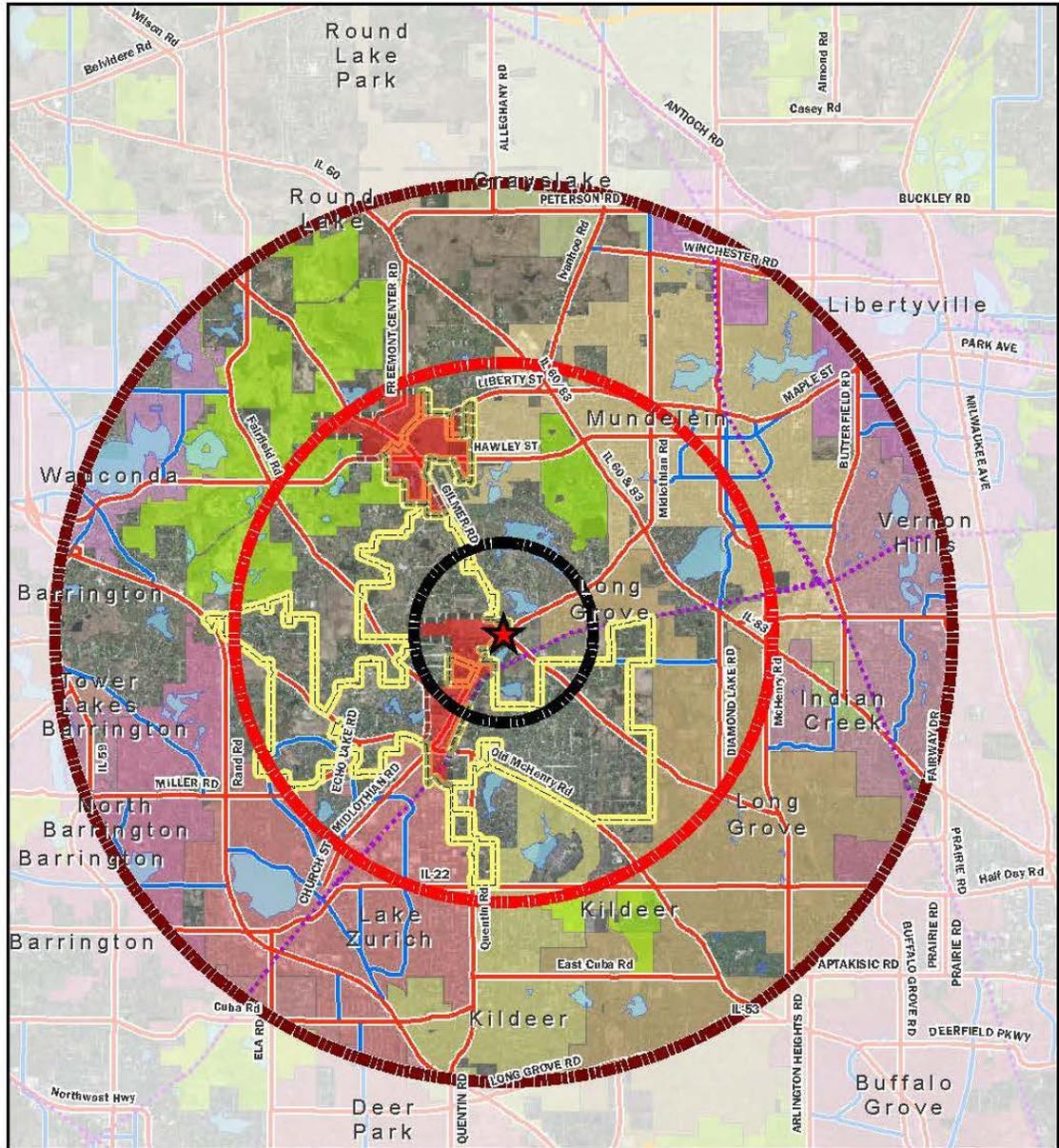
The following analysis provides an economic and demographic overview of Hawthorn Woods, the surrounding 5-Mile Radius, Lake County, Illinois, and the US. A sample of adjacent municipalities within the 5-Mile Radius has also been included to provide a geographic context for Hawthorn Woods. The variables observed in this analysis include income, population, age, employment, education, and household information. Data was collected from sources including the US Census, ESRI Business Analyst, and the US Department of Housing and Urban Development (HUD).

Definitions

- Chicago MSA – The Chicago Metropolitan Statistical Area has a population of over 9.5 million and is comprised of counties in Wisconsin, Illinois, and Indiana.
- Premium – A premium is the difference by which a product’s selling price exceeds or falls short of a benchmark price.
- Compound Annual Growth Rate (CAGR) – This is the average annual change in a value over a certain period of time.
- Per Capita – per person.

Key Implications

- The total number of households in Hawthorn Woods has gradually increased since 2000, while the size of these households has decreased. Residents of Hawthorn Woods have a higher median age and have aged at a faster rate than neighboring municipalities, Lake County, Illinois, and the US.
- Hawthorn Woods is a highly educated area with approximately one in four residents having earned a graduate degree and over 60% of residents with a Bachelor’s degree or higher.
- Despite low housing construction during the Recession, Hawthorn Woods has begun to build houses at a faster rate than the 5-Mile area and Lake County in recent years.
- Post-recession employment growth in Hawthorn Woods has been particularly strong, growing at an average annual rate of 6.4% compared to the 5-Mile radius (1.5%), Lake County (.6%), Illinois (%1), and the US (%2.1).
- In 2016, income per capita in Hawthorn Woods is approximately \$63,000, more than double the average income in Illinois and the US and \$15,000 more than the average income within a 5-Mile Radius around Hawthorn Woods.
- The number of people who live outside but work inside Hawthorn Woods has gradually increased since 2002. While the number of residents who leave Hawthorn Woods for employment has remained relatively unchanged.



Village of Hawthorn Woods, Illinois Trade Radius

-  Gilmer and Midlothian
-  1 Mile Buffer
-  3 Mile Buffer
-  5 Mile Buffer
-  Village of Hawthorn Woods
-  Forest Preserve District of Lake County



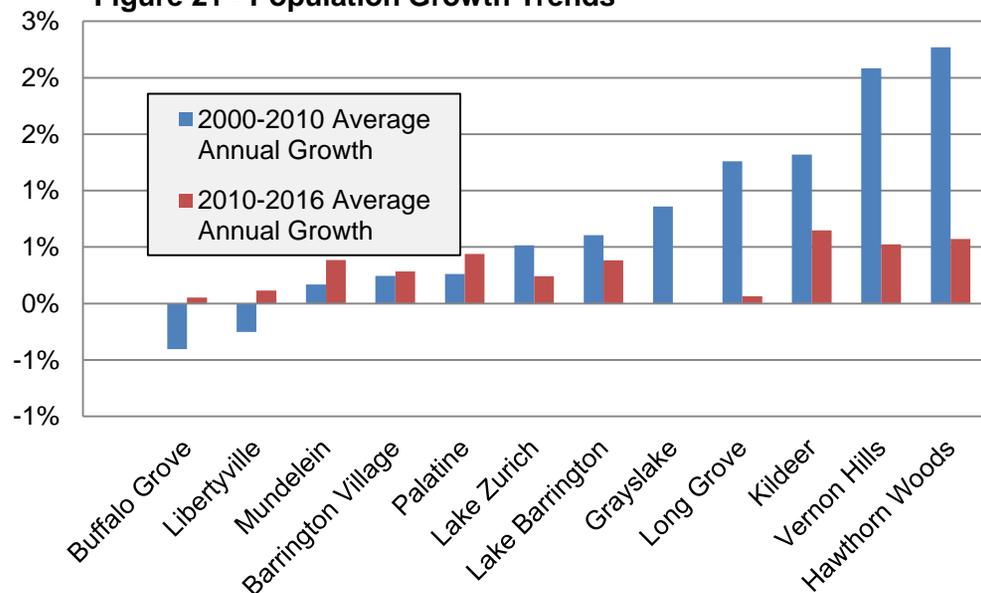
Figure 20 - Population (2000-2016) and Population Growth

Market Area	2000	2010	2016	2000-2016 CAGR	2000-2010 CAGR	2010-2016 CAGR
Hawthorn Woods	6,264	7,841	8,114	1.6%	2.3%	0.6%
5-Mile Radius	257,368	275,710	279,147	0.5%	0.7%	0.2%
Lake County	644,356	703,462	710,368	0.6%	0.9%	0.2%
Illinois	12,419,293	12,830,632	13,022,485	0.3%	0.3%	0.3%
USA	281,421,906	308,745,538	323,580,626	0.9%	0.9%	0.8%

Source: Esri Business Analyst, US Census

- Population in Hawthorn Woods has increased by approximately 1,000 residents since 2000, growing at an average annual rate of 1.6%, faster than all market areas and adjacent municipalities except Wauconda.
- Since the Recession, population growth in Hawthorn Woods has drastically reduced, yet remains higher than a majority of the adjacent municipalities, Lake County, and Illinois.

Figure 21 - Population Growth Trends

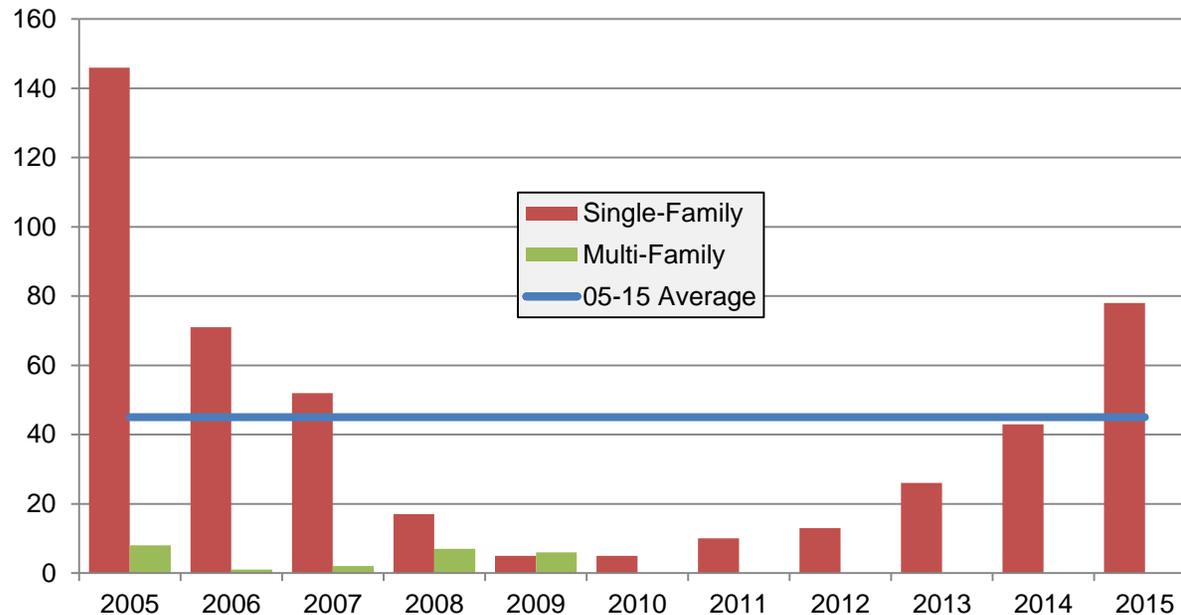


Source: Esri Business Analyst, US Census

Housing Permits & Household Trends

The annual number of housing permits issued in Hawthorn Woods has fluctuated significantly since 2005, due in large part to the Recession. Prior to the Recession, the number of single-family permits issued was higher than the long run average of 45. From 2008 to 2013, housing permits remained well below the long run average. In 2015, permits began to reach and exceed pre-recession levels as well as the long run average. Modest multi-family development happened between 2005 to 2009.

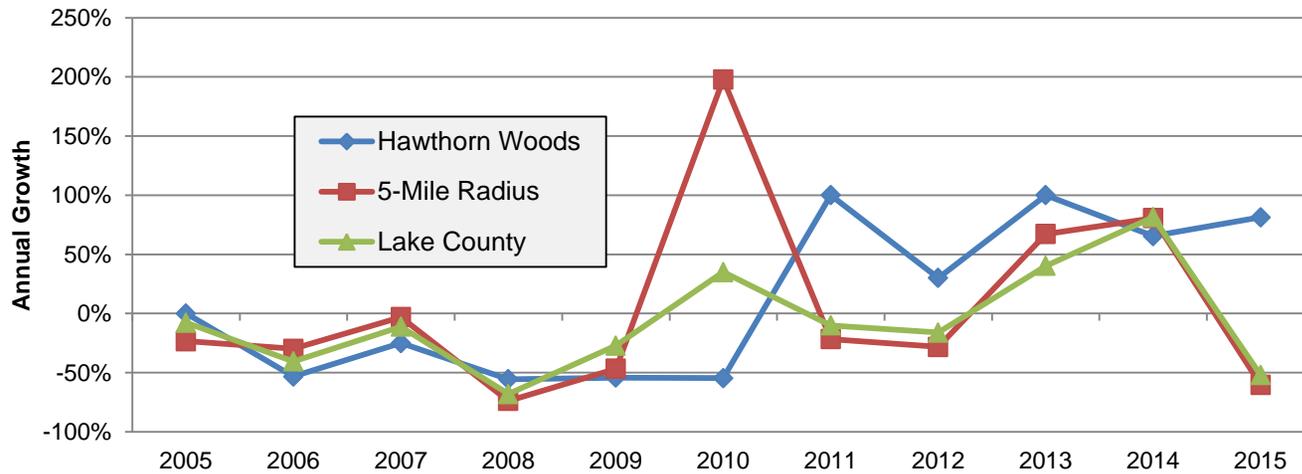
Figure 22 - Hawthorn Woods Housing Permits



Source: Village of Hawthorn Woods

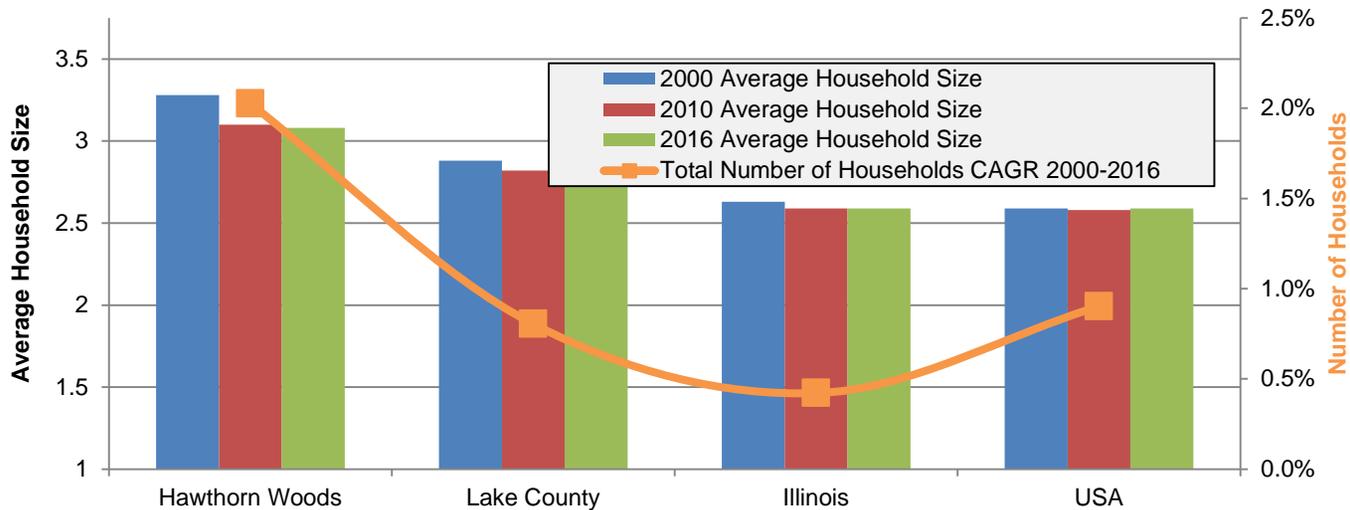
The number of housing permits issued in Hawthorn Woods has grown at a faster rate than the 5-Mile and Lake County areas, following a post-recession trend of housing growth. The average household size in Hawthorn Woods has decreased faster than the other market areas, while the total number of households in Hawthorn Woods has increased at a faster rate.

Figure 23 - Hawthorn Woods Housing Permit Growth



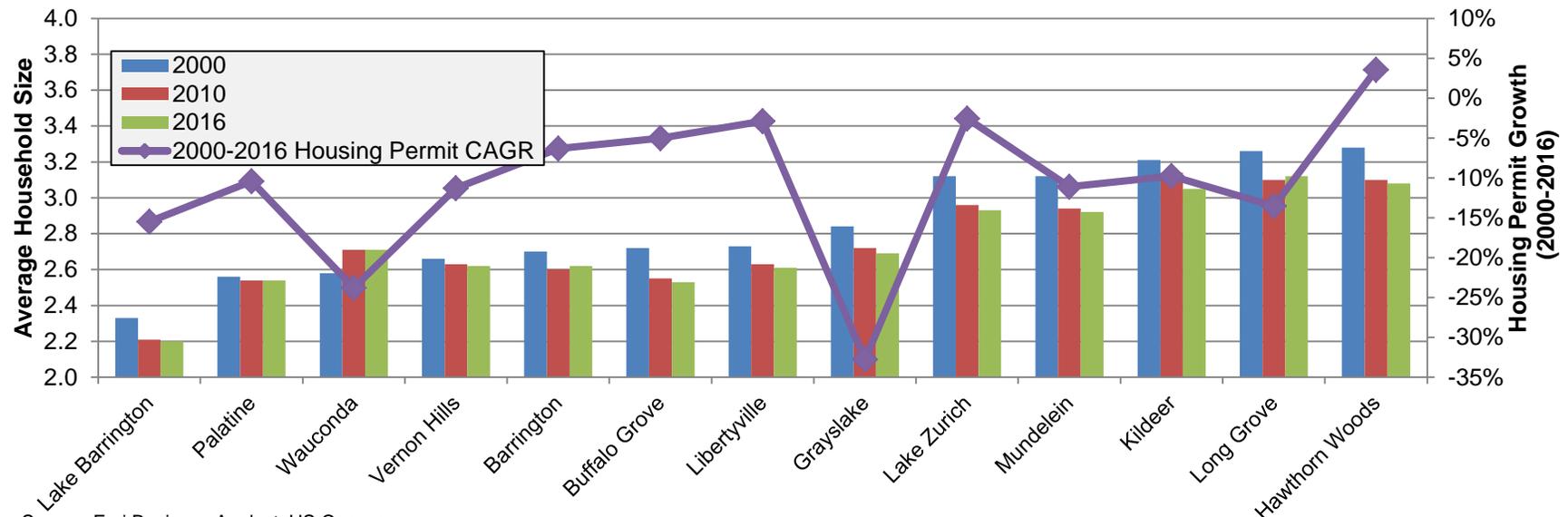
Source: SOCDs, Village of Hawthorn Woods

Figure 24 - Average Household Size and Total Household Growth



Source: Esri Business Analyst, US Census

Figure 25 - Average Household Size Trends



Source: Esri Business Analyst, US Census

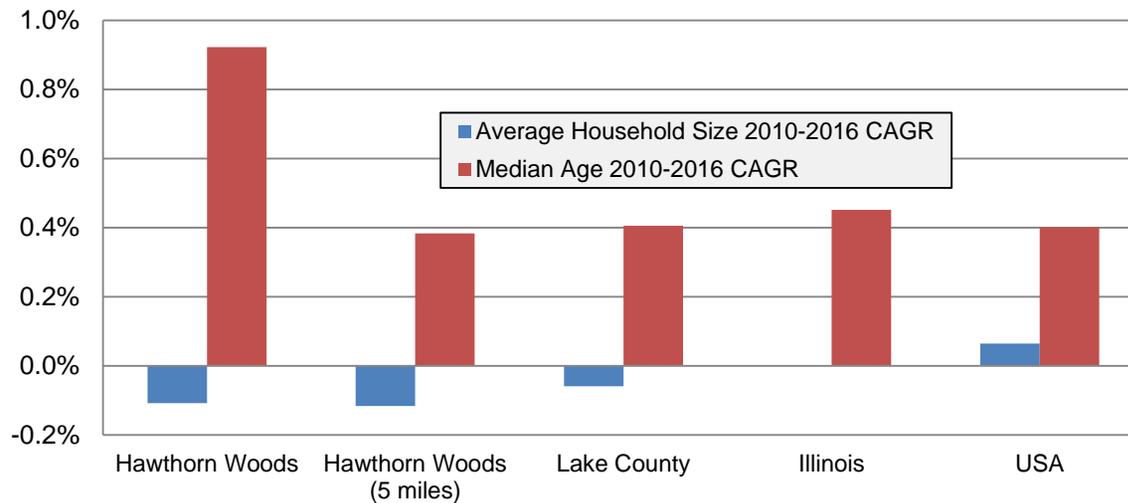
Owner Occupied Household Size (CAGR 2000-2014)

Household Size	Hawthorn Woods	Lake County	Illinois	United States
Total	2.5%	0.5%	0.2%	0.5%
1-person	8.3%	1.6%	1.0%	1.2%
2-person	4.2%	0.9%	0.6%	0.8%
3-person	2.7%	0.4%	0.0%	0.0%
4-person	0.0%	0.2%	-0.3%	-0.3%
5-person	-1.8%	-0.6%	-0.7%	-0.4%
6-person	4.0%	-0.1%	-1.0%	-0.2%
7-or-more	-3.1%	-2.5%	-2.0%	-0.6%

Source: US Census

- The average household size in Hawthorn Woods has decreased at an average annual rate of .39% since 2000. Only Buffalo Grove (.45%) and Mundelein (.41%) have seen larger decreases during the 16 year period.
- While Hawthorn Woods household size has decreased since 2000, it remains higher than a majority of adjacent municipalities within a 5-Mile radius. Housing permit growth since 2000 also remains higher in Hawthorn Woods than in adjacent municipalities
- The decreasing household size trend is reinforced by the increase in the number of households with one and two people. 1-person and 2-person households have increased at annualized rate of 8.3% and 4.2% respectively.

Figure 26 - Average Household Size and Median Age

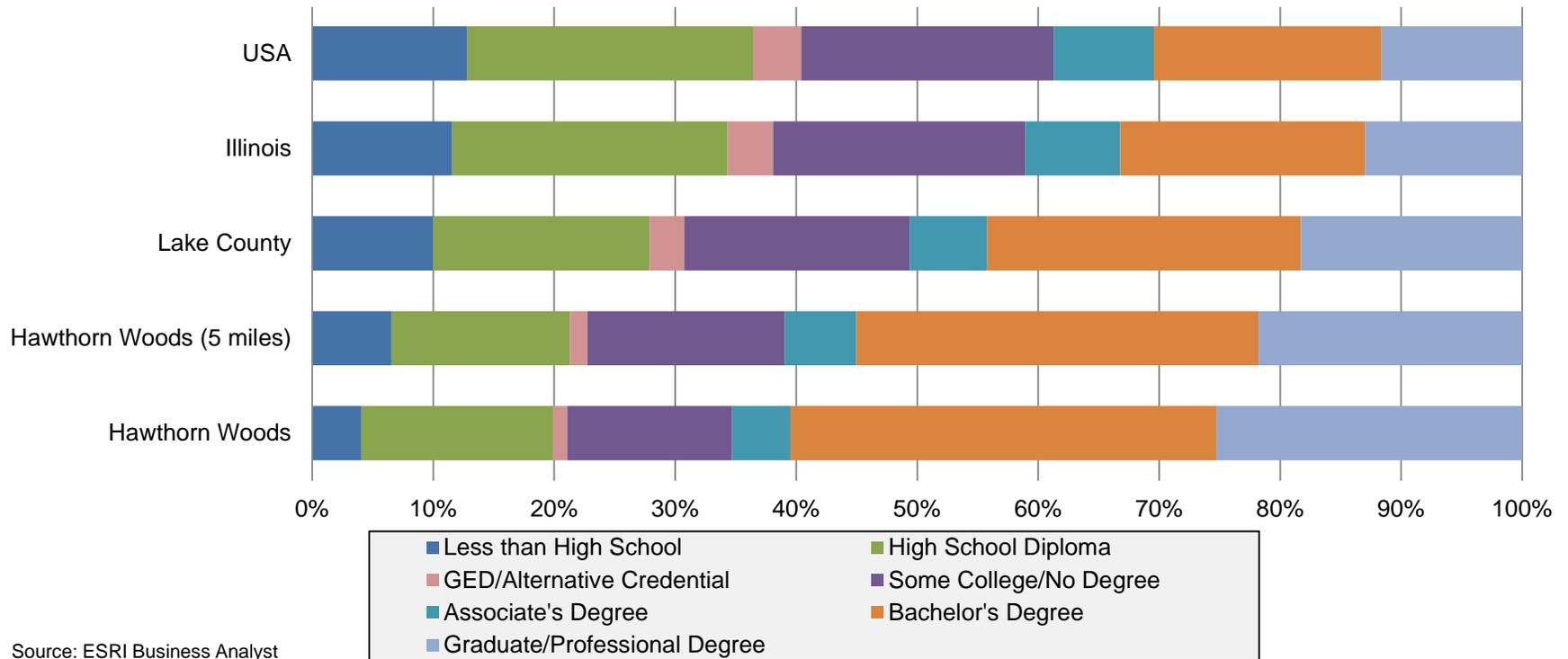


Source: Esri Business Analyst, US Census

- The average household size in Hawthorn Woods has decreased by .1% annually, since 2010, while the median age has increased at an annual rate of almost 1%, which indicates that households are getting smaller and older.
- This disparity between household size and median age is larger in Hawthorn Woods than in the 5-Mile Radius and implies that the village may be gradually transitioning toward a retiree-based community with older residents fewer families.
- Residents of Hawthorn Woods have aged at a faster rate than a majority of the adjacent municipalities as well as county, state and national rates.
- The median age of residents in Hawthorn Woods is approximately 45, seven years older than the national median age.

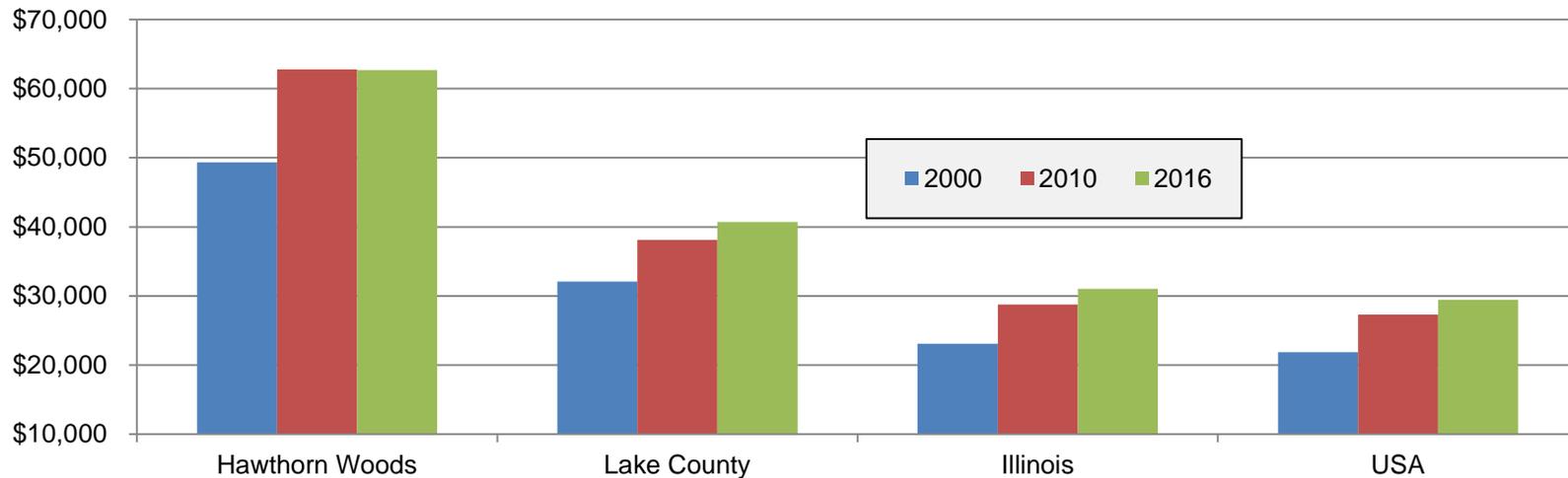
Educational Attainment, Income, and Employment Trends

Figure 27 - Educational Attainment Trends



- In 2016, over 60% of the population in Hawthorn Woods has a Bachelor’s and/or Graduate/Professional Degree, compared to the 5-Mile Radius (55%), Illinois (33%), and US (30%). One in four residents of Hawthorn Woods has a Graduate Degree.
- Of the five market areas, Hawthorn Woods has the fewest number of residents with an education below high school level.

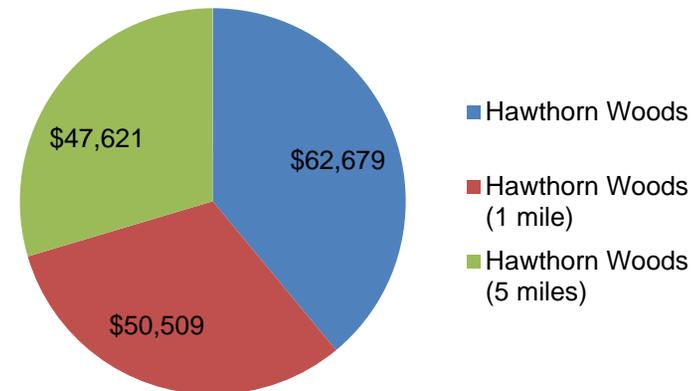
Figure 28 - Income Per Capita



Source: ESRI Business Analyst, US Census

- While income per capita is significantly higher in Hawthorn Woods compared to other market areas, average annual income growth since 2010 (0%) has been lower than County (1.1%), State (1.3%) and National (1.3%) rates.
- According to ESRI estimations, income per capita in Hawthorn Woods is approximately \$63,000, more than double the average income in Illinois and the US and \$15,000 more than the average income within a 5-Mile radius around Hawthorn Woods.
- Organizations such as the Brookings Institute have established long-standing correlations between higher education and age with higher income.

Income Per Capita 2016



Source: ESRI Business Analyst, US Census

Figure 29 - Total Employment (2002-2014)

Year	Hawthorn Woods	5 Mile Radius	Lake County	Chicago MSA	Illinois	USA
2002	760	125,394	305,125	4,149,516	5,521,181	114,008,823
2003	851	124,151	303,186	4,057,504	5,407,141	114,905,828
2004	799	126,287	302,047	4,113,686	5,453,985	119,610,168
2005	887	129,826	309,387	4,140,771	5,488,726	122,094,282
2006	902	131,255	313,545	4,195,893	5,551,041	124,191,038
2007	827	132,479	317,337	4,292,949	5,661,432	126,045,245
2008	822	132,448	325,159	4,299,988	5,666,063	126,221,262
2009	766	125,365	312,695	4,143,675	5,467,249	121,724,269
2010	1,241	122,015	309,342	4,161,510	5,480,233	123,232,617
2011	972	134,622	316,294	4,255,555	5,598,264	129,089,599
2012	1,095	137,265	314,975	4,297,454	5,622,264	130,235,853
2013	1,039	132,484	319,049	4,348,205	5,651,658	132,485,114
2014	1,043	135,271	321,784	4,412,546	5,738,741	134,901,076
CAGR 02-14	2.7%	0.6%	0.4%	0.5%	0.3%	1.4%
CAGR 02-09	0.1%	0.0%	0.4%	0.0%	-0.1%	0.9%
CAGR 09-14	6.4%	1.5%	0.6%	1.3%	1.0%	2.1%

Source: US Census

- Despite the fact that Hawthorn Woods accounts for .3% of Lake County employment, total employment in Hawthorn Woods has grown at an annualized rate of 6.4% since the Recession, while employment in the 5-Mile Radius (1.5%), Lake County (0.6%), MSA (1.3%), Illinois (1%), and US (2.1%) have continued to lag behind Hawthorn Woods.

Figure 30 - Employment by Industry (2014)

Employment Industry	Hawthorn Woods	5-Mile Radius	Lake County	Chicago MSA	Illinois	USA
Agriculture, Forestry, Fishing and Hunting	0.8%	0.2%	0.1%	0.1%	0.3%	0.9%
Mining, Quarrying, and Oil and Gas Extraction	0.0%	0.0%	0.0%	0.0%	0.2%	0.6%
Utilities	0.0%	0.9%	0.5%	0.4%	0.5%	0.6%
Construction	3.9%	3.7%	3.2%	3.3%	3.4%	4.6%
Manufacturing	0.6%	14.3%	16.4%	9.5%	10.3%	9.1%
Wholesale Trade	4.8%	7.3%	7.2%	5.6%	5.3%	4.3%
Retail Trade	6.2%	13.7%	11.9%	10.5%	10.5%	11.2%
Transportation and Warehousing	22.7%	2.6%	1.6%	4.3%	4.2%	3.5%
Information	1.2%	2.7%	1.5%	2.1%	2.0%	2.2%
Finance and Insurance	4.8%	4.3%	4.0%	5.1%	4.9%	4.2%
Real Estate and Rental and Leasing	1.0%	1.3%	1.1%	1.4%	1.3%	1.5%
Professional, Scientific, and Technical Services	9.9%	10.8%	6.8%	7.8%	6.8%	6.3%
Management of Companies and Enterprises	0.7%	2.2%	2.4%	2.0%	1.8%	1.7%
Administration & Support, Waste Management	3.7%	5.5%	8.1%	7.9%	7.1%	6.3%
Educational Services	15.9%	7.3%	9.5%	9.5%	9.9%	9.5%
Health Care and Social Assistance	6.9%	10.1%	11.0%	13.2%	13.7%	14.6%
Arts, Entertainment, and Recreation	0.4%	1.7%	2.5%	2.1%	1.8%	1.7%
Accommodation and Food Services	9.2%	6.7%	7.0%	8.2%	8.2%	9.2%
Other Services (excluding Public Administration)	3.3%	3.2%	2.7%	3.7%	3.6%	3.2%
Public Administration	4.1%	1.4%	2.4%	3.3%	4.2%	4.8%
Total Jobs	1,043	135,271	321,784	4,412,546	5,738,741	134,901,076

Source: US Census

- Top employment sectors in Hawthorn Woods include transportation/warehousing, educational, and professional services and account for approximately 50% of all jobs in Hawthorn Woods.
- The 5-Mile market specializes in manufacturing, retail trade, and professional services; approximately 40% of all jobs within the 5-Mile Radius.

- In recent years, employment in Hawthorn Woods has followed similar growth trends to the 5-Mile and Lake County market areas, allowing for volatility during the recession.
- Since 2009, the number of people who reside and work in Hawthorn Woods and the 5-Mile radius has outpaced those who live inside and work outside the market areas.
- The growth rate of residents who live in Hawthorn Woods but are employed outside has decreased since 2009, pointing to an increasing number of retirees living in Hawthorn Woods.

Figure 31 - Annual Employment Growth

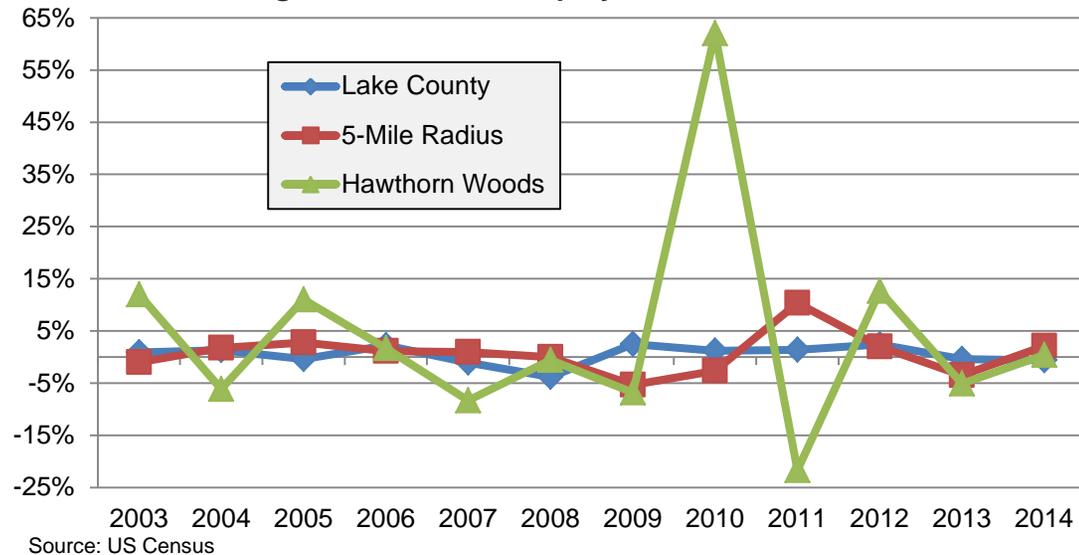
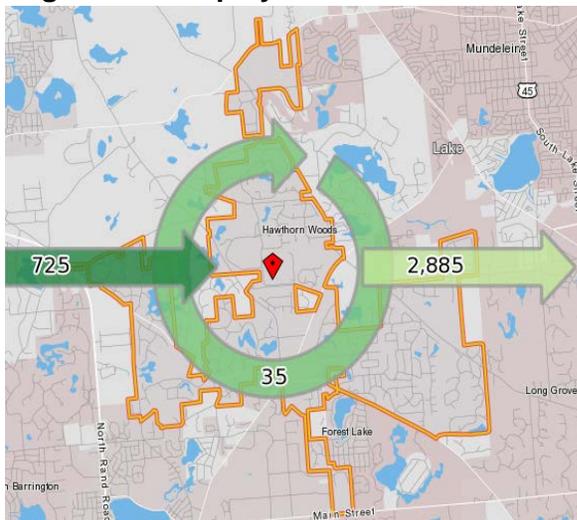


Figure 32 - Employment Inflow and Outflow

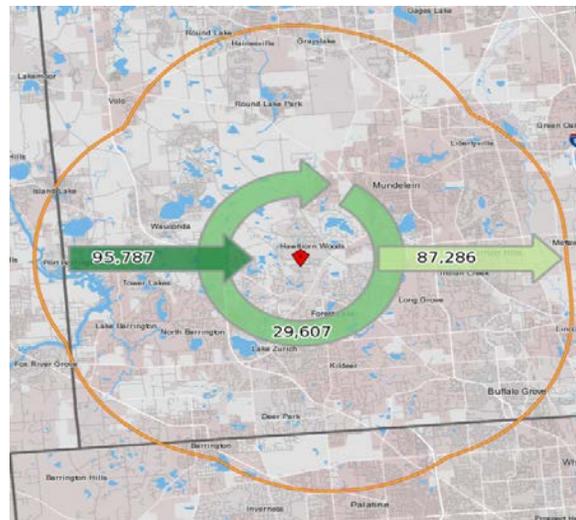
Market Area	Average Annual Growth	Live and Employed in Area	Live in Area but Employed Outside	Employed in Area	Employed in Area but Live Outside
Hawthorn Woods	09-14 CAGR	4.70%	-3.67%	6.37%	6.44%
	02-09 CAGR	-1.72%	3.19%	0.11%	0.20%
5-Mile Radius	09-14 CAGR	0.94%	0.42%	1.53%	1.71%
	02-09 CAGR	-0.46%	2.37%	0.00%	0.13%
Lake County	09-14 CAGR	0.19%	0.92%	0.57%	0.93%
	02-09 CAGR	-0.64%	2.13%	0.35%	1.37%

Source: US Census

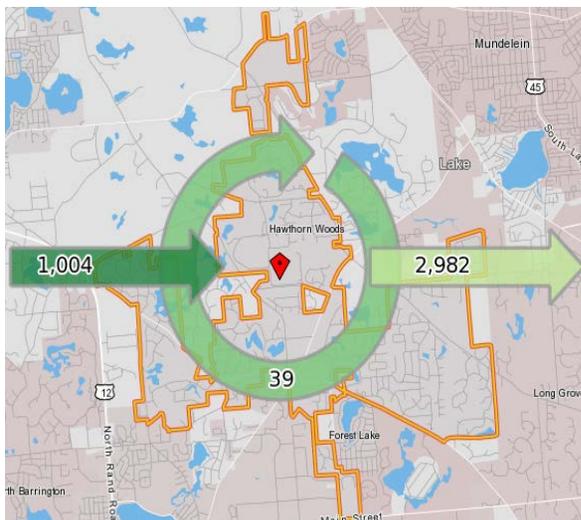
Figure 33 - Employment Flows



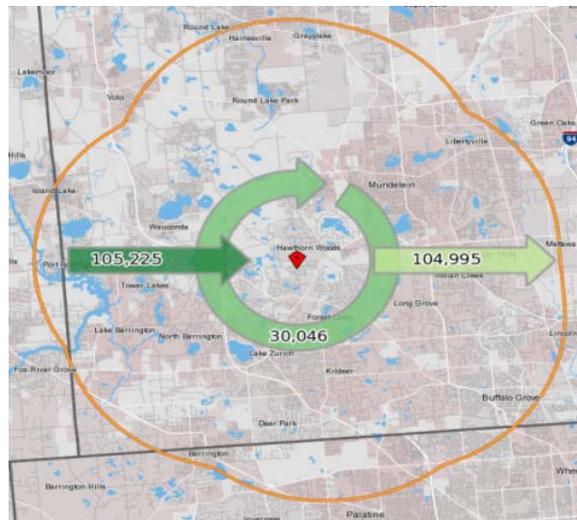
2002 Hawthorn Woods



2002 5-Mile Radius



2014 Hawthorn Woods



2014 5-Mile Radius

- Maps to the left illustrate employment flows in and out of Hawthorn Woods and the 5-Mile radius.
- Since 2002, the number of people who live outside but work inside Hawthorn Woods has increased by 300 employees. While the number of residents who leave Hawthorn Woods for employment has remained relatively unchanged.
- The number of people who leave the 5-Mile radius for employment has grown at a faster rate than those who enter the 5-Mile radius for employment.

Commercial Real Estate Market Analysis



Analysis Process

The following analysis provides an overview of office, industrial, and retail real estate in the 5-Mile Radius, Lake County, and the Chicago MSA. CoStar was used to extract the following real estate quarterly data for each property type from 2006-2016:

- Inventory Square Footage – Total square footage of buildings that have received a certificate of occupancy and are able to be occupied by tenants.
- Rent – This represents the amount for which the landlord is offering their space per square foot, per year for lease for a listing.
- Vacancy – Vacant space refers to all space not currently occupied by a tenant, regardless of any lease obligation that may be on the space.
- Occupancy – Occupied space is defined as the square footage of space that is physically occupied by a tenant.
- Absorption – Refers to the change in occupancy over a given time period.
- Deliveries – The annual square footage of added real estate inventory.

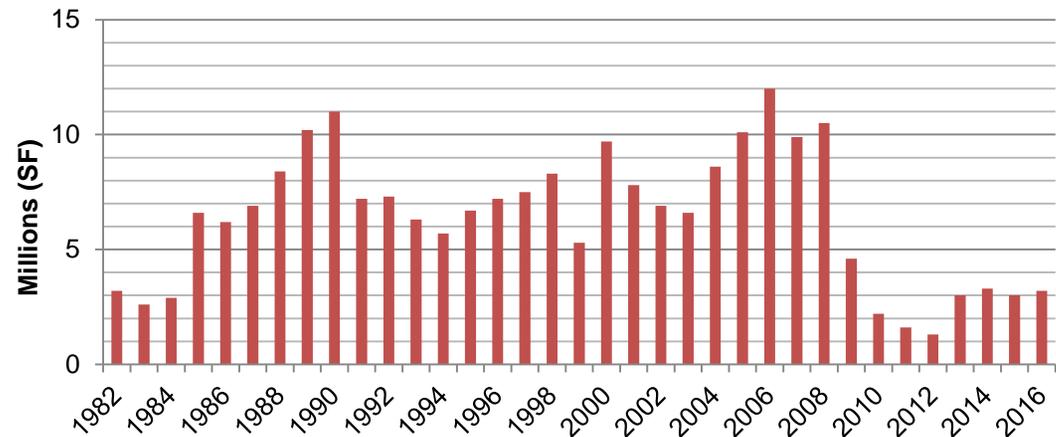
Key Implications

- In context with regional trends, the 5-Mile Radius market has seen a decrease in retail and office occupancy since 2006. Approximately 19% of office and 9% of retail space within the 5-Mile Radius are currently vacant, compared to 13% vacant office space and 7% vacant retail space in the Chicago MSA.
- Office space in the 5-Mile Radius has seen an increase in vacancy along with a decrease in rent, suggesting that demand for office space in the 5-Mile Radius is lower than in Lake County and Chicago.
- Retail and Office inventory built after 2005 demands a significant rent premium compared to all inventory. Among the three property types, retail space typically demands the highest premium (\$4/sf) for new inventory across all market areas.
- Prior to the Recession, additional retail inventory was consistently delivered each quarter, while absorption was well below long run averages.
- Despite increases in retail and office inventory, occupied square footage for both property types in the 5-Mile Radius has continued to decline since 2006.
- The 5-Mile Radius has absorbed 12% of all retail inventory deliveries since 2006, while Lake County has absorbed 31% and the Chicago MSA has absorbed 55%.

Metro Chicago Real Estate Perspective

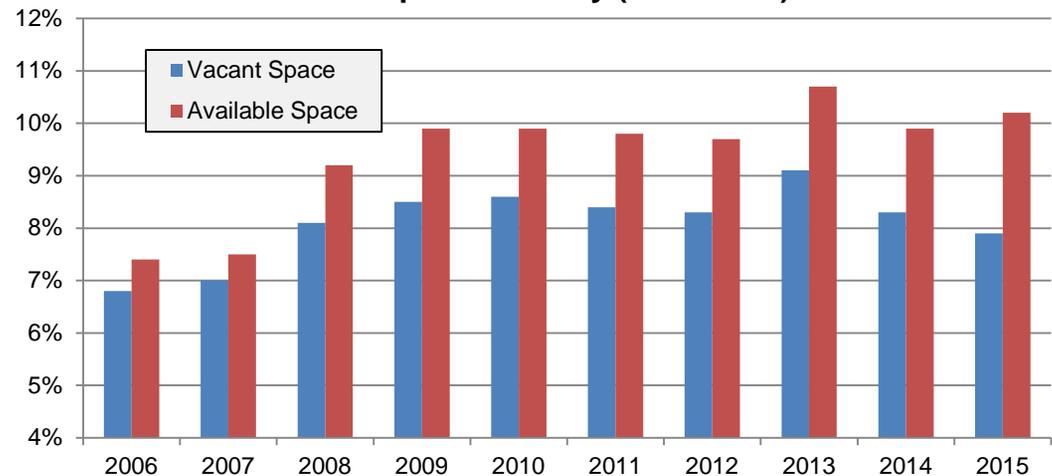
- Construction of new retail space across Metropolitan Chicago has slowly re-started, but at a pace well below long term (1982 to 2015) averages; about 6.5 million square feet per year.
- Between 2005 and 2009, the region added over 9 million sf per year, well above long-term averages.
- Since 2009, the average has been about 2.7 million sf per year. Decreased construction has helped boost retail occupancies to an extent.
- Retail vacancy has improved across the region, falling to just under 8% through 2015, proximate to pre-recession levels.
- Vacancy levels remain impacted by divergence between vacant space and available space, which likely links with continued trends for store closures. The distinction here is that “available” space is actively marketed space for lease or sale, regardless of occupancy status.

Retail Space Construction (1982-2016)



Source: CoStar

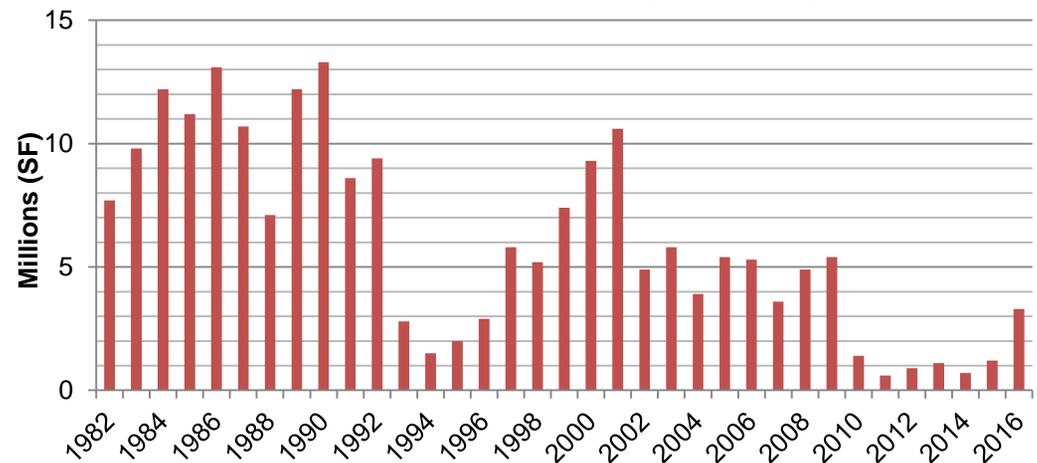
Retail Space Vacancy (2006-2015)



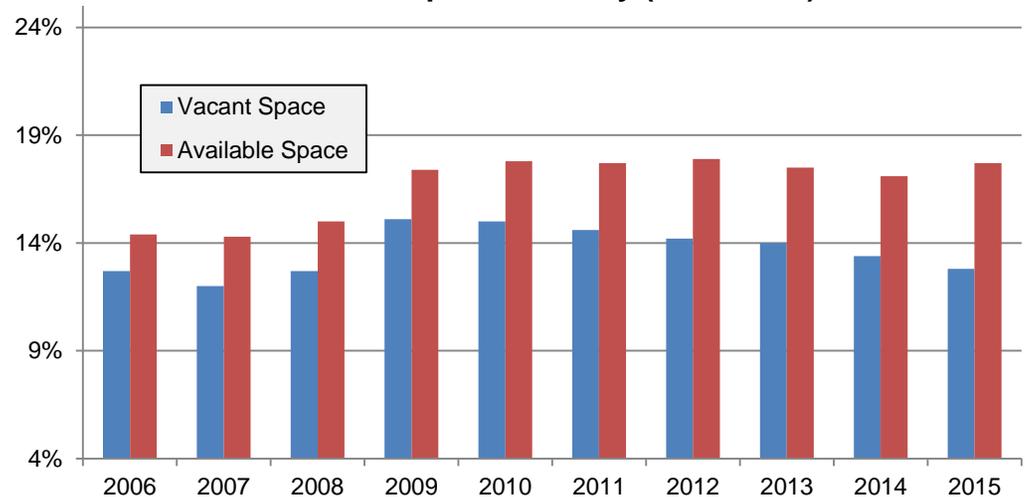
Source: CoStar

- After the 2008 Recession, office space construction has gradually begun to increase yet remains well below the long run average of 6 million square feet per year.
- Since 2010, the average number of delivered office square footage has been about 1.3 million per year; as a result, lower supply of office space has slightly boosted office occupancy.
- Office vacancy has improved within the Chicago Metro Area, from approximately 15% in 2009 to 12.8% in 2015.
- In recent years, the divergence between office vacancy and available office space has continued to increase. The implication being that there has been an increase in office closures as available space is actively marketed for lease compared to vacant.

Office Space Construction (1982-2016)

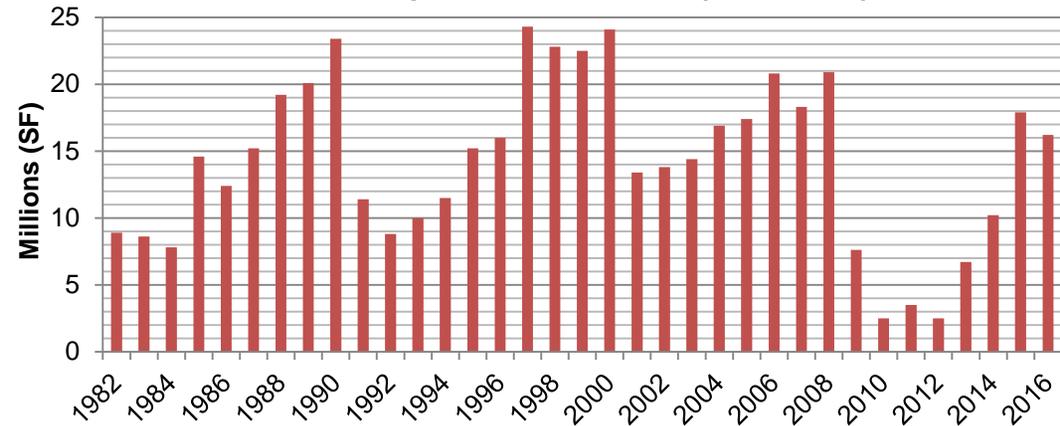


Office Space Vacancy (2006-2015)

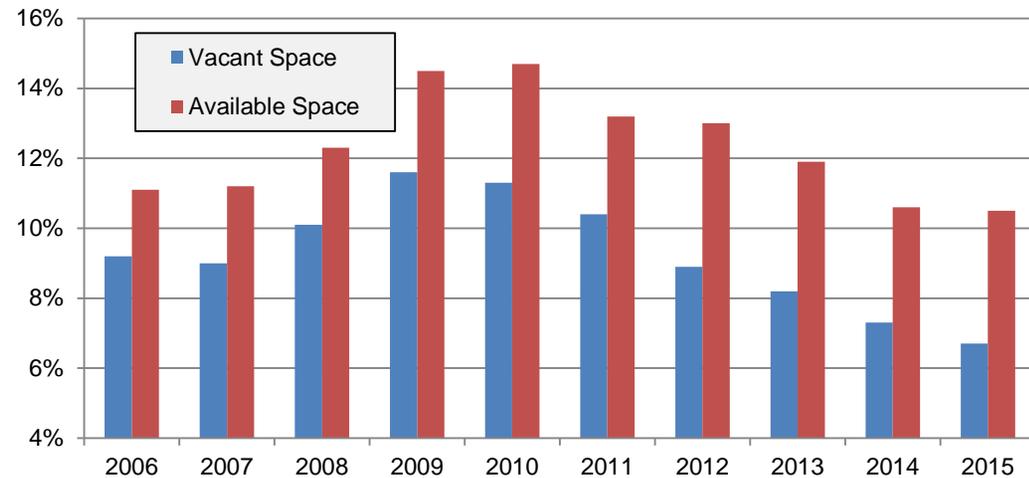


- Industrial space construction has seen significant fluctuations in deliveries since 1982.
- Unlike retail and office space, industrial construction has drastically increased in recent years, reaching and exceeding Pre-Recession levels of deliveries.
- Vacancy and available space in the metro area have drastically reduced since 2009. Vacancy has decreased from 11.6% to 6.7% and available space has fallen from 14.5% to 10.5%.
- Lower vacancy and available space in addition to above average construction indicates that demand for industrial space has been relatively high in recent years.

Industrial Space Construction (1982-2016)



Industrial Space Vacancy (2006-2015)



- The three major concentrations of retail space and income in the Chicago region are Barrington, Downers Grove, and the north side of Chicago.
- There is about 21 million square feet of retail space within an 8-mile radius of Barrington and 41 million within an 8-mile radius of Downers Grove. The north side has approximately 48 million square feet of retail space.
- The three pockets of retail space account for 20% of all retail space in the metro area.

Chicago MSA Total Household Income by Zip Code

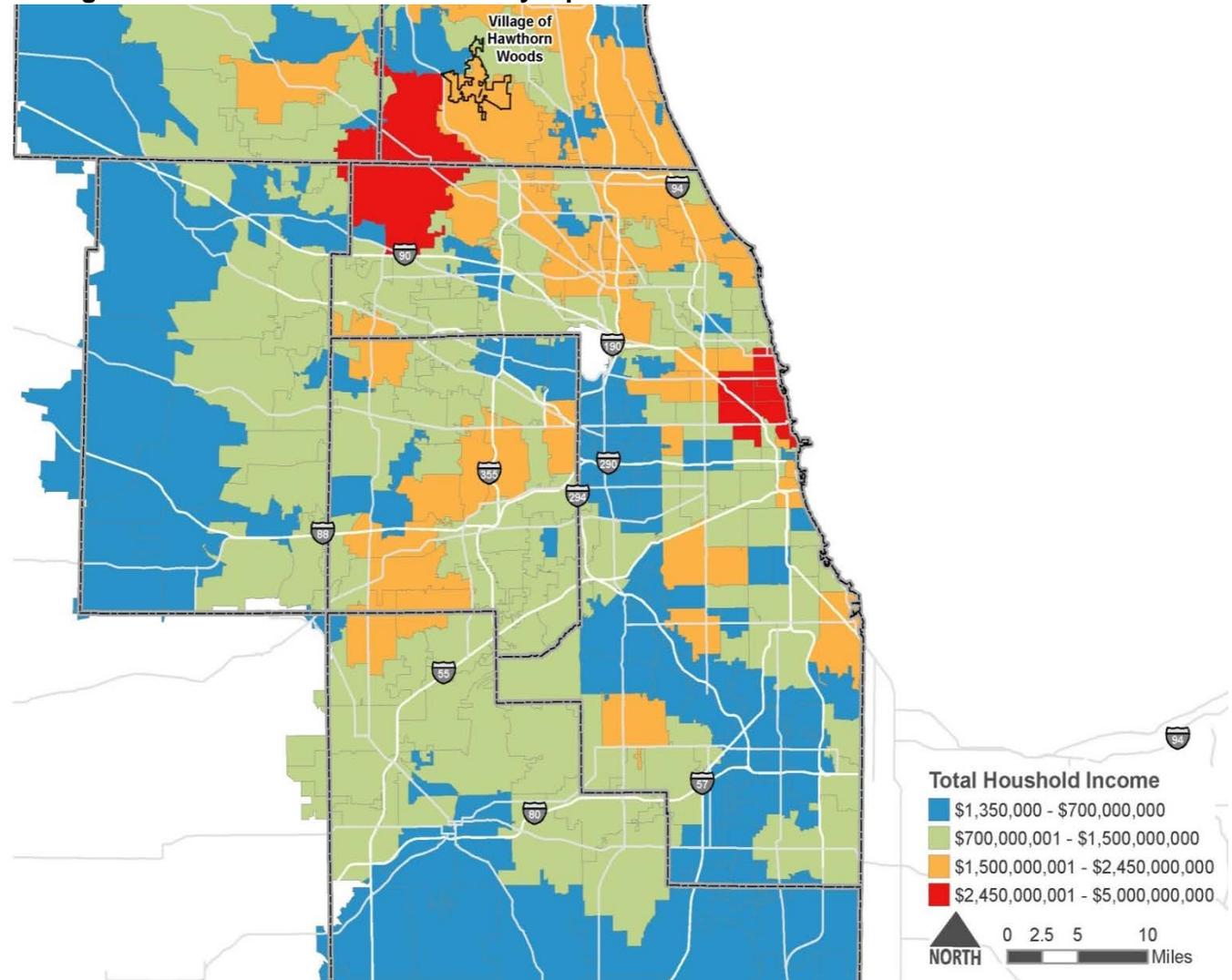


Figure 34 - Major Retail Areas

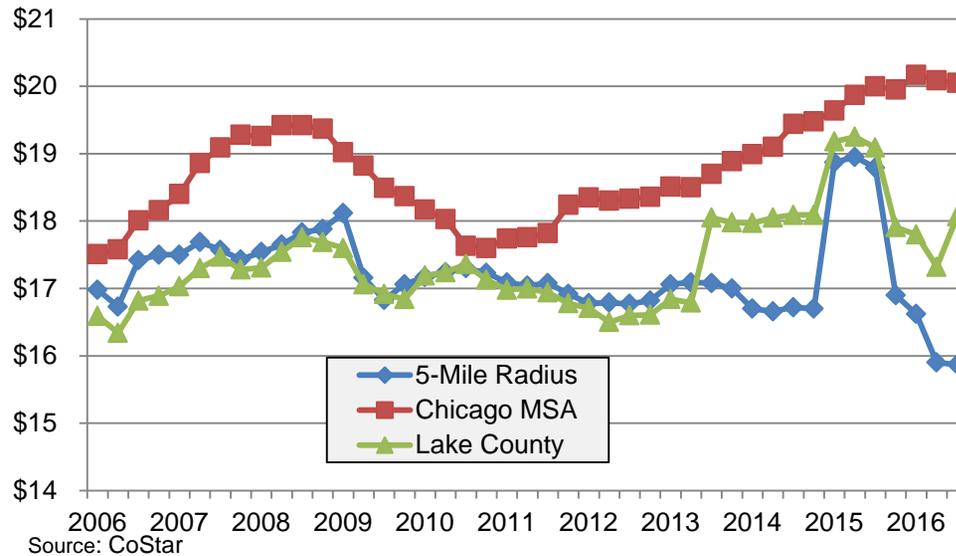
Retail Variables	Downers Grove 8-Mile Radius	Chicago North Side	Barrington 8-Mile Radius	5-Mile Radius
Population	610,679	529,978	325,965	279,147
Per Capita Income	\$43,797	\$48,420	\$42,901	\$43,640
Total Income	\$27 Billion	\$26 Billion	\$14 Billion	\$12 Billion
Retail Inventory	40,836,702	47,255,924	17,640,868	22,542,415
Inventory Per Capita	67	89	54	81
Vacancy	7.5%	4.4%	10%	9.3%

Source: CoStar, US Census

- According to the table above, per capita income in the 5-Mile Radius is consistent with the Barrington, Downers Grove, and North Side markets, yet retail space per capita within the 5-Mile Radius (81) is well above square footage per capita in Downers Grove (67) and Barrington (54) and consistent with the North Side (89).
- Though the 5-Mile Radius has similar retail space per capita to the North Side, it has roughly double the vacancy rate of Chicago's North Side.
- The Chicago North Side market includes Michigan Avenue as well as Clybourn Corridor.

Figure 35 - Office Inventory Analysis

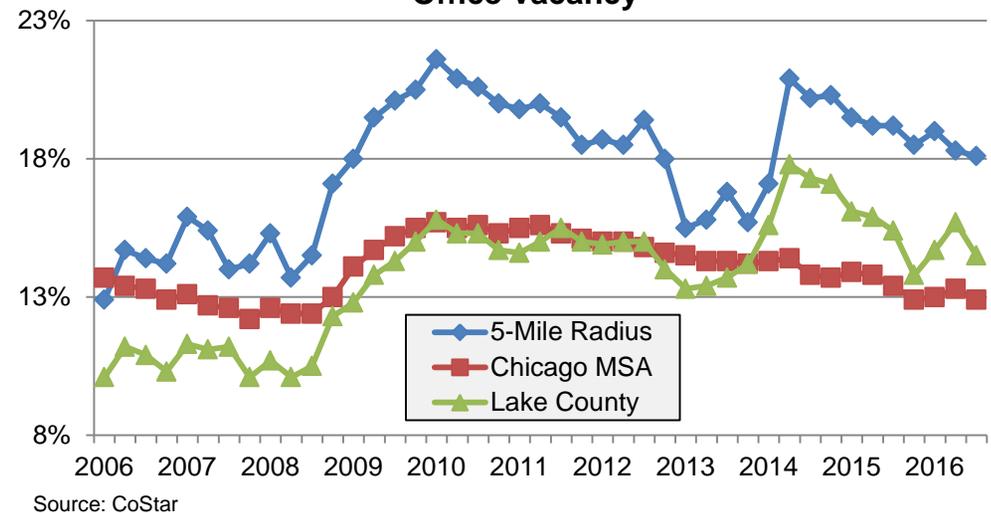
Office Rents

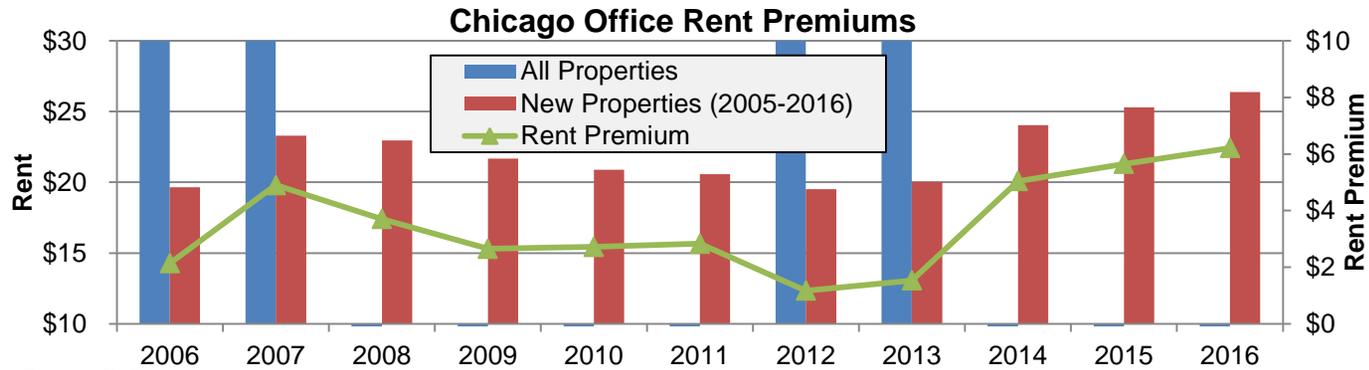


- Average rent for office space in the Chicago MSA is \$20 compared to \$18 in Lake County and \$16 in the 5-Mile Radius.
- The difference in office rent between Chicago and the 5-Mile Radius has grown to approximately \$5 in 2016.

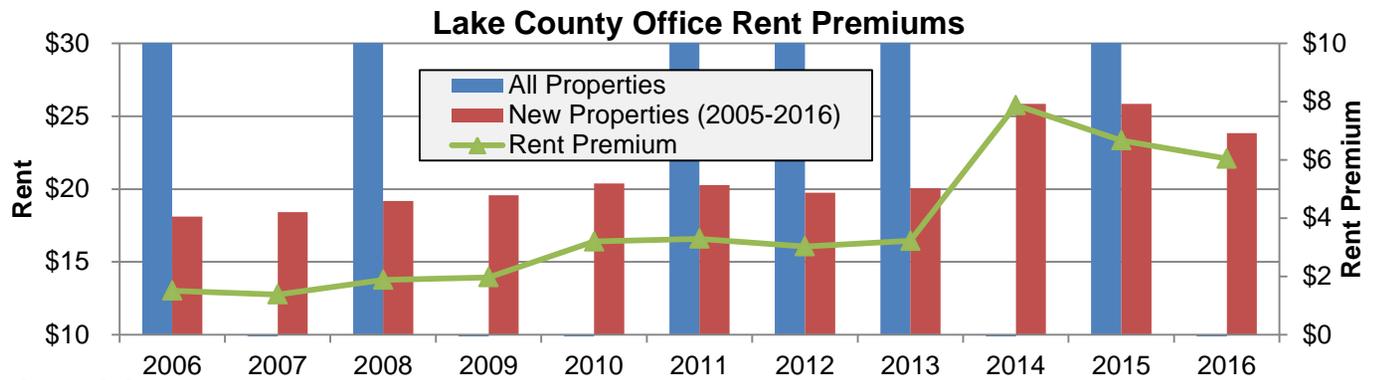
- During the ten-year period, office vacancy in the 5-Mile Radius has been consistently higher than vacancy in Lake County and Chicago.
- Office vacancy in the 5-Mile Radius increased by over 7% after the Great Recession.

Office Vacancy

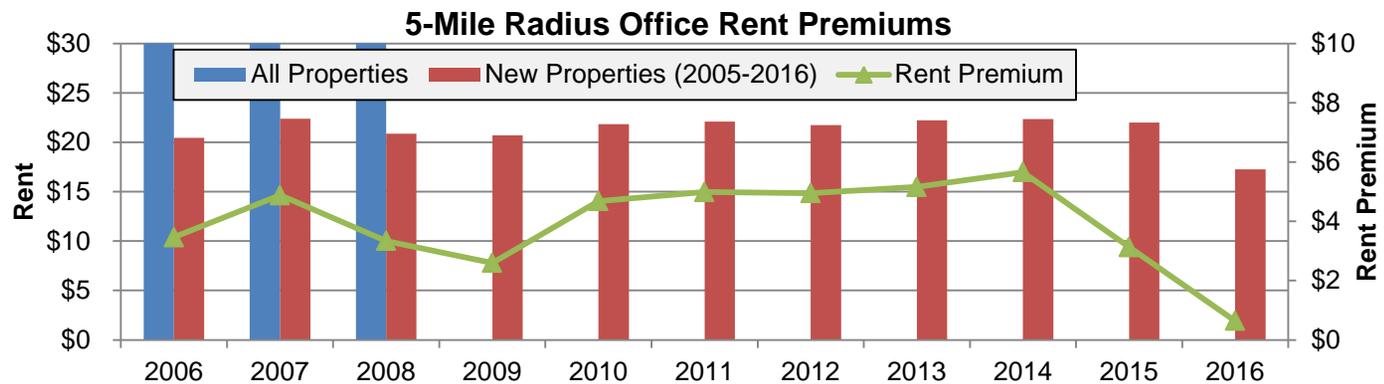




Source: CoStar



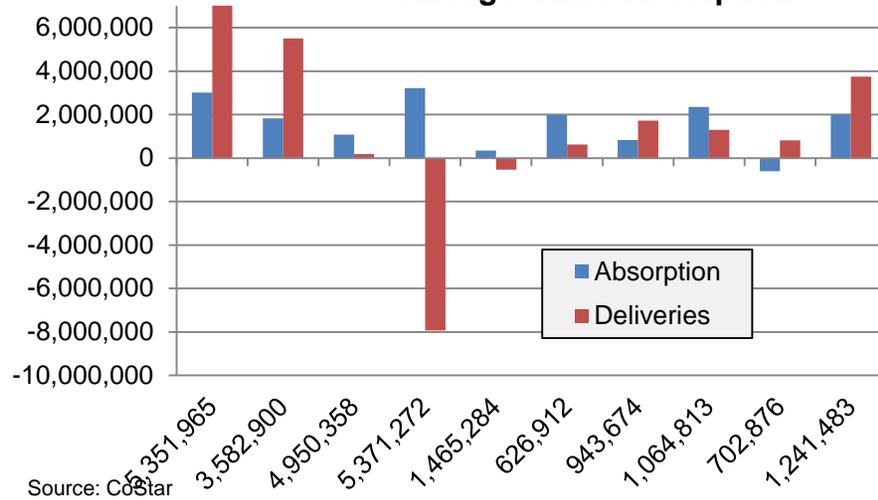
Source: CoStar



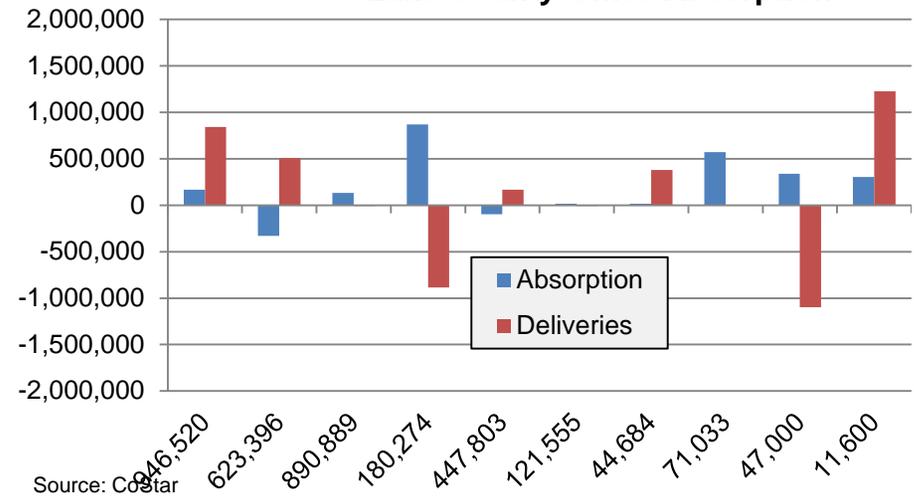
Source: CoStar

- Since 2012, the rent premium for new Chicago office space has increased at annualized rate of 52%.
- In contrast, the rent premium for new office space in the 5-Mile Radius has decreased at an average annual rate of -41% since 2012.

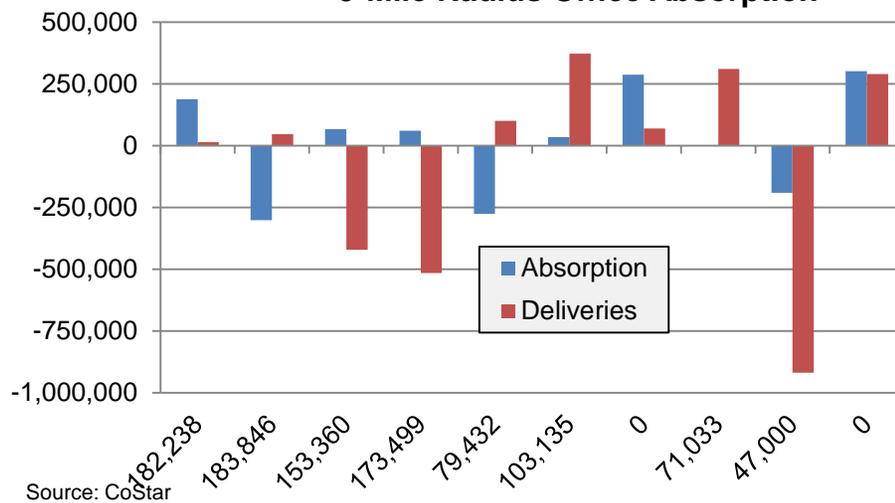
Chicago Office Absorption



Lake County Office Absorption



5-Mile Radius Office Absorption



- Each market area has seen drastic reductions in the number of annual office deliveries (supply), due in large part to the 2008 Recession and its effect on real estate.
- Since 2006, the total net absorption in the 5-Mile Radius is approximately -500,000 square feet, compared to almost one million square feet in deliveries, indicating that demand is not keeping up with supply.

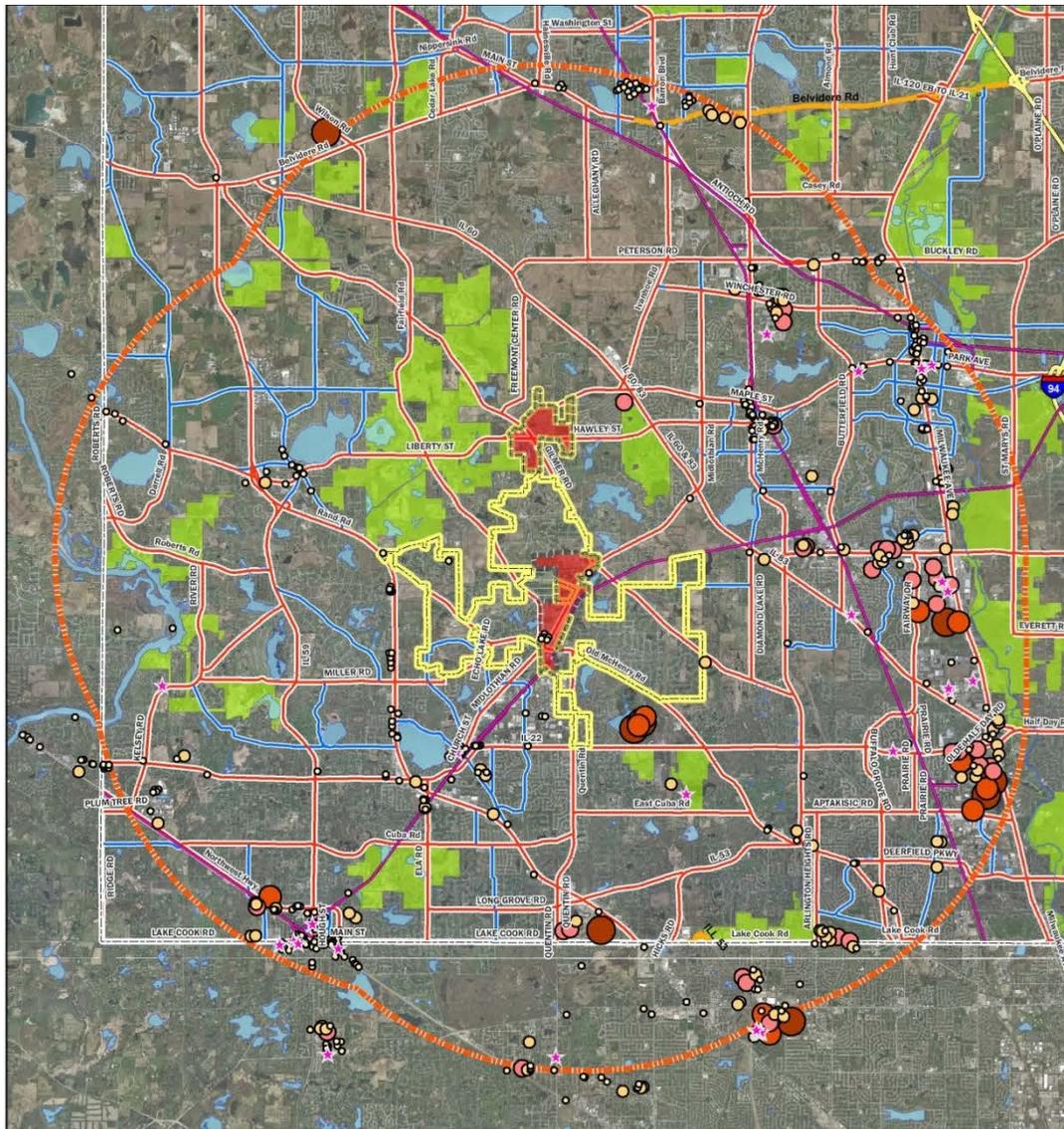
Figure 36 Cumulative Office Inventory Change (2006-2016)

Property Type	Chicago	Lake County	5-Mile Radius
Total Absorption (SF)	15,143,115	835,246	-513,907
Total Deliveries (SF)	26,055,113	3,399,054	993,543
Total Occupancy Change (SF)	12,618,561	734,591	-670,453
Total Vacancy Change (SF)	-1,733,621	2,088,297	1,205,579
2006 Inventory	457,797,884	35,668,358	18,696,486
Total Deliveries % of 2006 Inventory	5.7%	9.5%	5.3%

Source: CoStar

- The supply of office space has increased by approximately one million square feet since 2006, while occupied square feet has decreased by almost 700,000 square feet.
- For the 5-Mile Radius, while inventory growth (5.3% of 2006 inventory) is consistent with metro averages, there is an implication that more dramatic inventory growth across Lake County (representing 9.5% of 2006 inventory) has altered the market.
- The 5-Mile Radius is the only market area with a cumulative decrease in occupied office space, decreasing at an average annual rate of -0.5%.

Village of Hawthorn Woods, Illinois Office Buildings within 5-Mile Radius



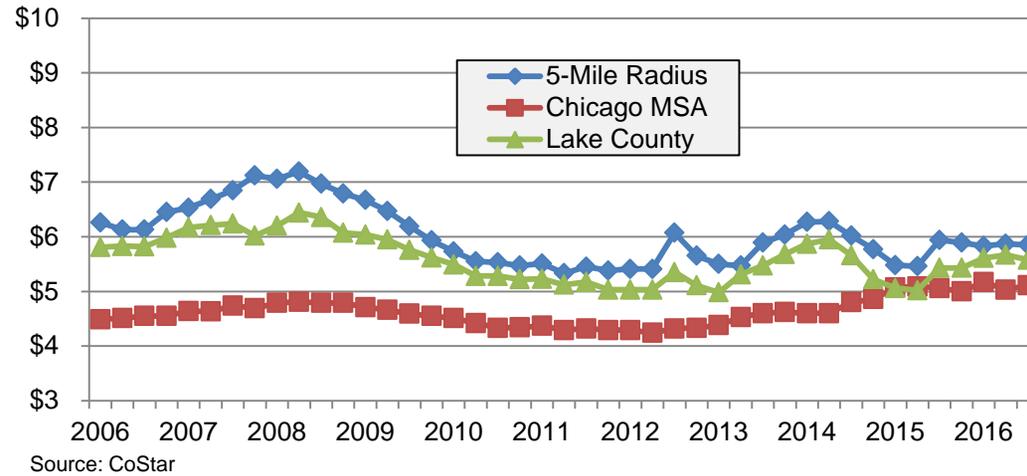
- Village of Hawthorn Woods
- Forest Preserve District of Lake County
- - - 5-Mile Buffer
- ★ Vacant Buildings (1,474,600 SF)
- Rentable Building Area (16,837,076 SF)**
 - Less than 25,000 (21%)
 - 25,001 - 75,000 (24%)
 - 75,001 - 150,000 (19%)
 - 150,001 - 300,000 (14%)
 - Greater than 300,001 (22%)

Total Office - 563 Buildings
Within the Village of Hawthorn Woods - 7 Buildings



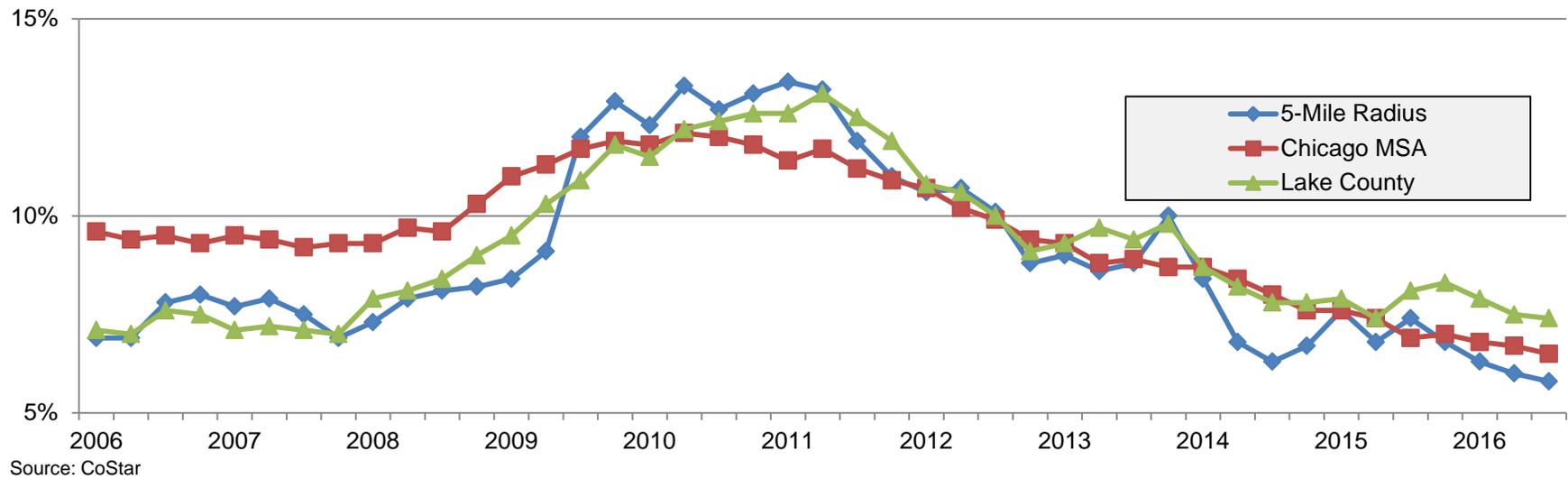
Figure 37 - Industrial Inventory Analysis

Industrial rents

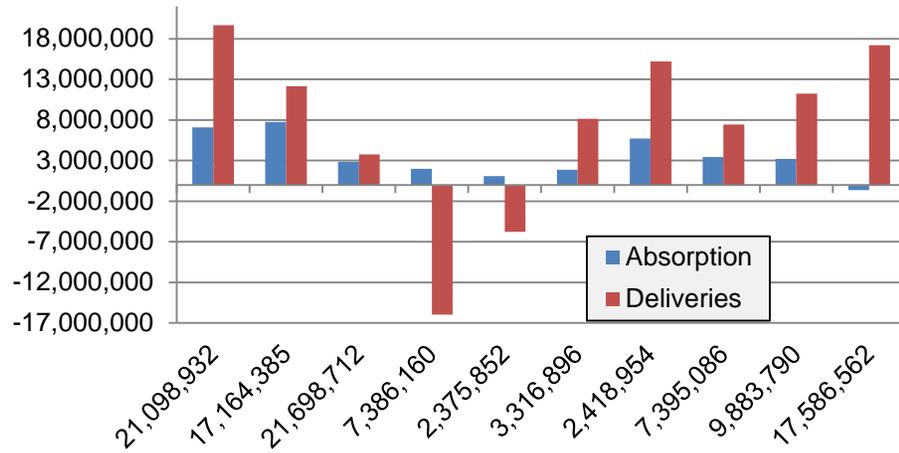


- Average rent for industrial space is approximately \$6 in the 5-Mile Radius and Lake County, compared to \$5 in the Chicago MSA.
- Lake County and the 5-Mile Radius have followed similar rent trends since 2006, gradually declining to the \$5-\$6 mark, while Chicago has increased industrial rent to \$5 per square foot.
- Across all market areas, industrial vacancy has consistently declined since 2011.
- The 5-Mile Radius currently has the lowest industrial vacancy rate among the three market areas.

Industrial Vacancy

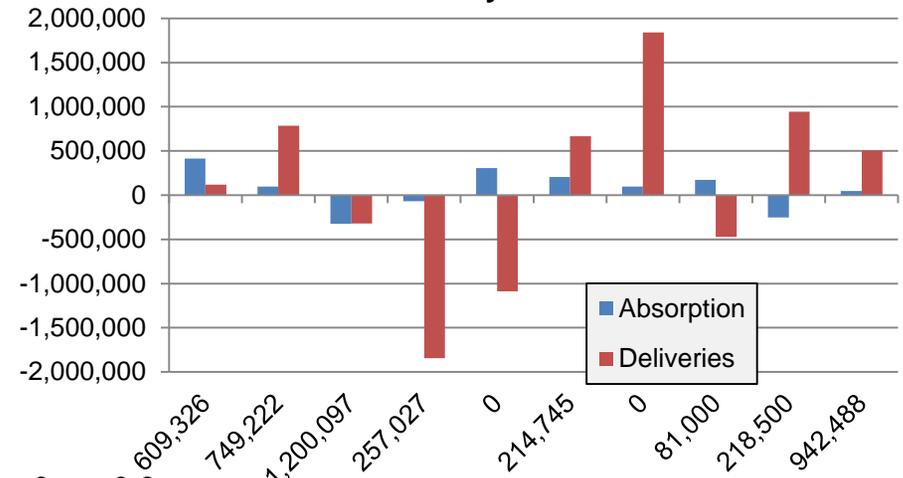


Chicago Industrial Space Absorption



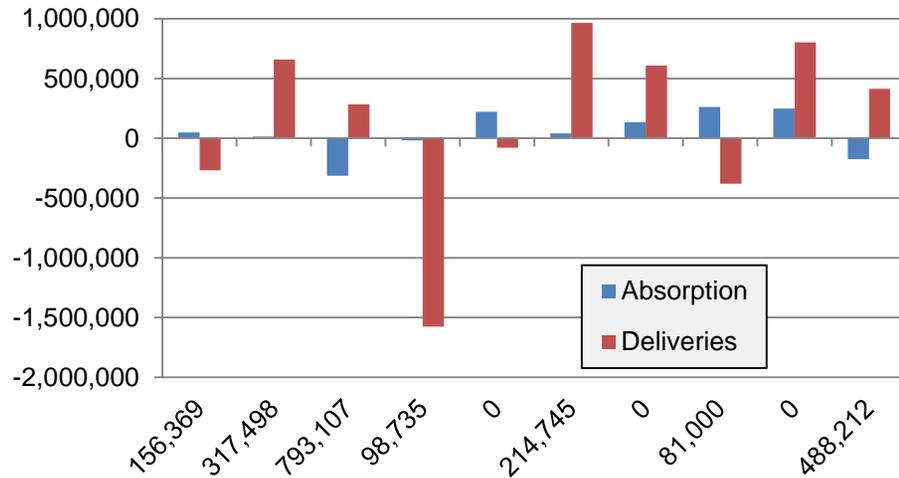
Source: CoStar

Lake County Industrial



Source: CoStar

5-Mile Radius Industrial



Source: CoStar

- During the years following the Recession, absorption of industrial space in the 5-Mile Radius and Lake County has been significantly higher than deliveries.

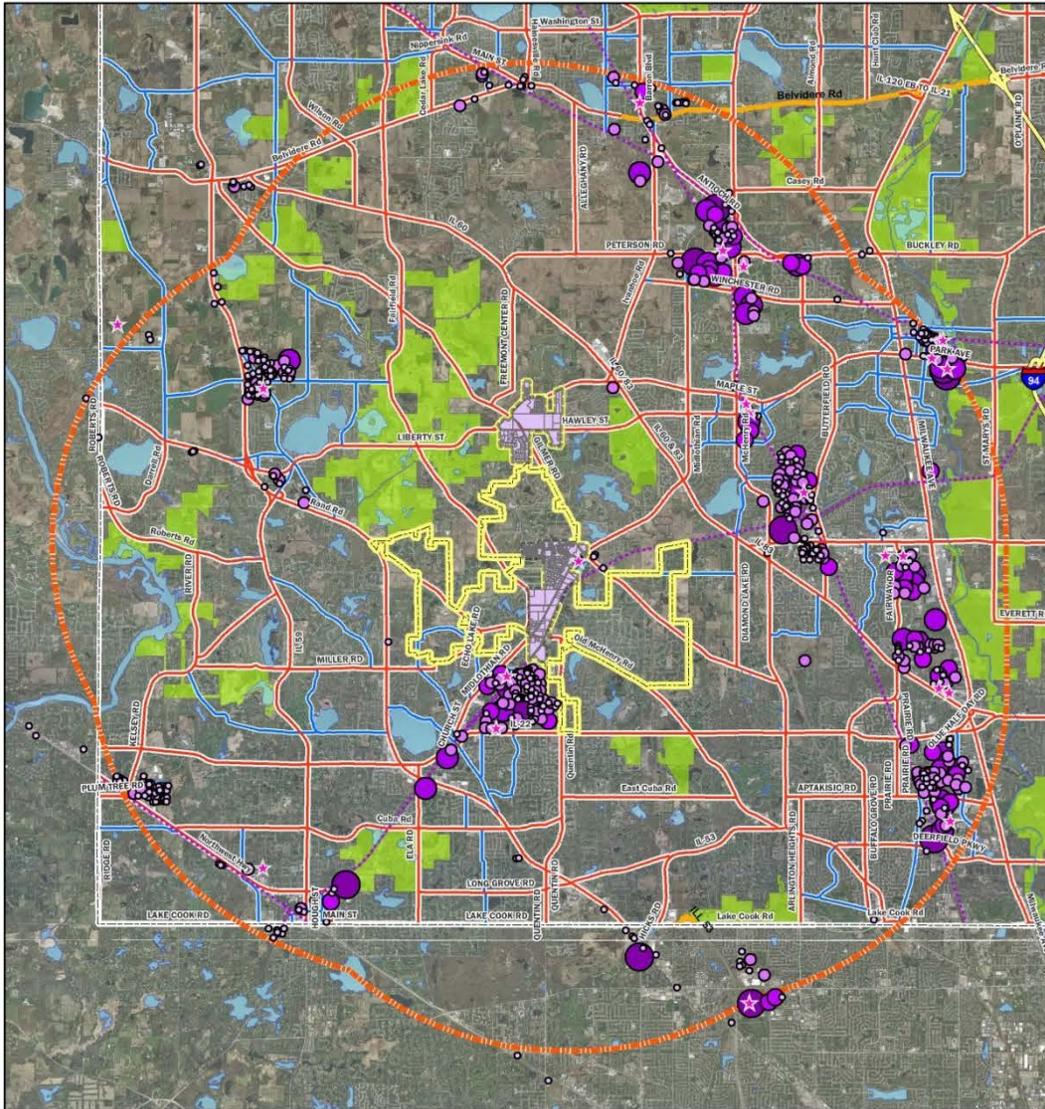
Figure 38 - Cumulative Industrial Inventory Change (2006-2016)

Property Type	Chicago	Lake County	5-Mile Radius
Total Absorption (SF)	76,357,526	2,386,592	1,636,997
Total Deliveries (SF)	116,704,350	4,978,418	2,228,831
Total Occupancy Change (SF)	83,257,795	2,787,180	1,704,466
Total Vacancy Change (SF)	-26,879,277	755,779	-112,842
2006 Inventory	1,068,056,025	72,064,771	34,047,765
Total Deliveries % of 2006 Inventory	10.9%	6.9%	6.5%

Source: CoStar

- Unlike retail and office, industrial occupied square footage in the 5-Mile Radius has increased by approximately 1.7 million square feet, at an average annual rate of 0.5%.
- For the 5-Mile Radius, deliveries since 2006 accounted for 6.5% of total inventory in 2006 (lower than all other market areas), suggesting more measured pace of growth in line with market fundamentals.
- The total change in industrial occupancy in the 5-Mile Radius represents approximately 61% of all the industrial occupancy change in Lake County.
- Approximately 73% of industrial inventory deliveries since 2006 have been absorbed in the 5-Mile Radius.
- The analysis points to an interesting industrial market position within five miles of Hawthorn Woods.

Village of Hawthorn Woods, Illinois Industrial Buildings within 5 Mile Radius



- 5-Mile Buffer
- Village of Hawthorn Woods
- Forest Preserve District of Lake County
- ★ Vacant Buildings

Rentable Building Area (34,057,774 SF)

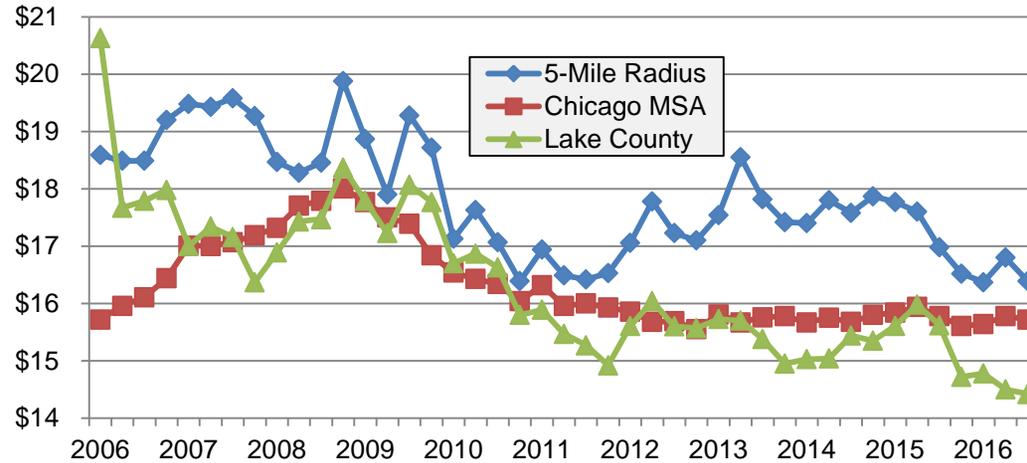
- Less than 36,000 SF (20%)
- 36,001 - 100,000 SF (30%)
- 100,001 - 175,000 SF (19%)
- 175,001 - 300,000 SF (17%)
- > 300,001 - 880,000 SF (14%)

Total Industrial - 659 Buildings
Within the Village of Hawthorn Woods - 0 Buildings



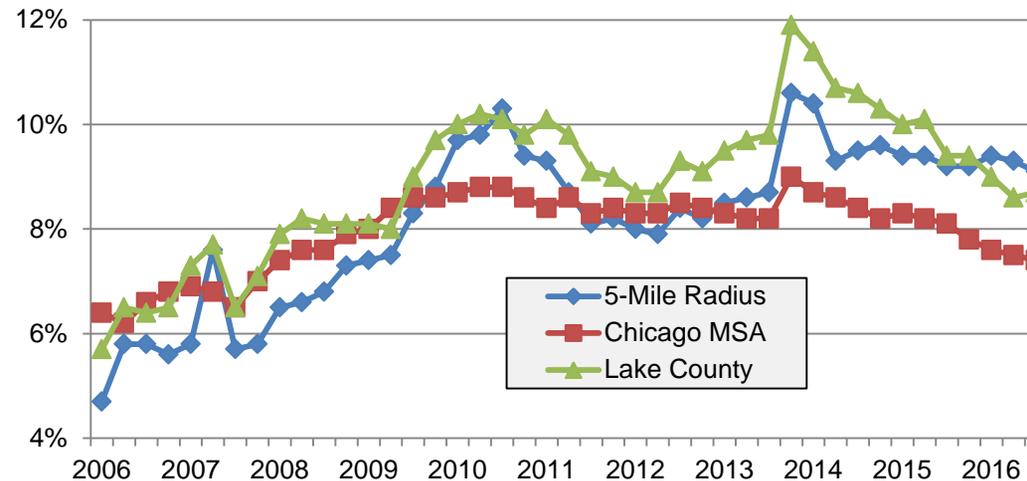
Figure 39 - Retail Inventory Analysis

Retail Rents



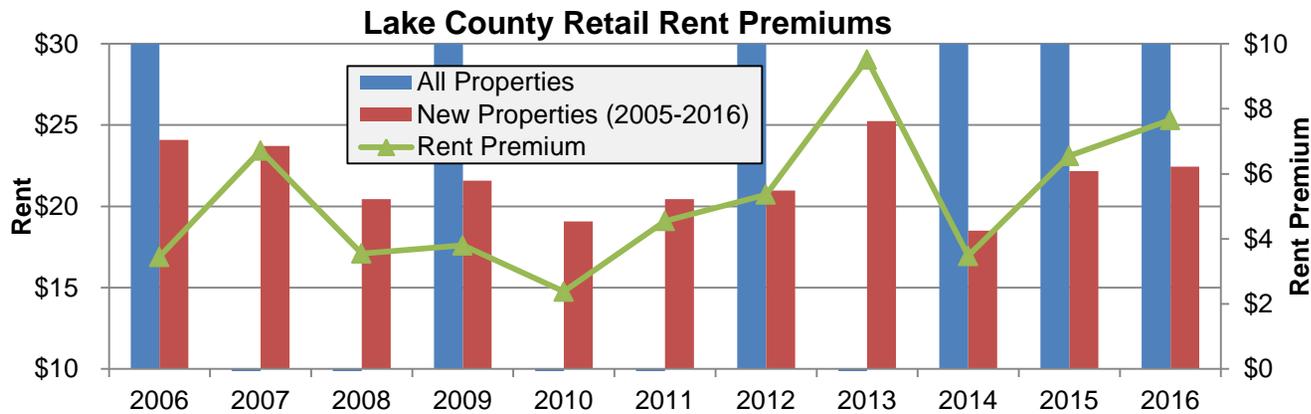
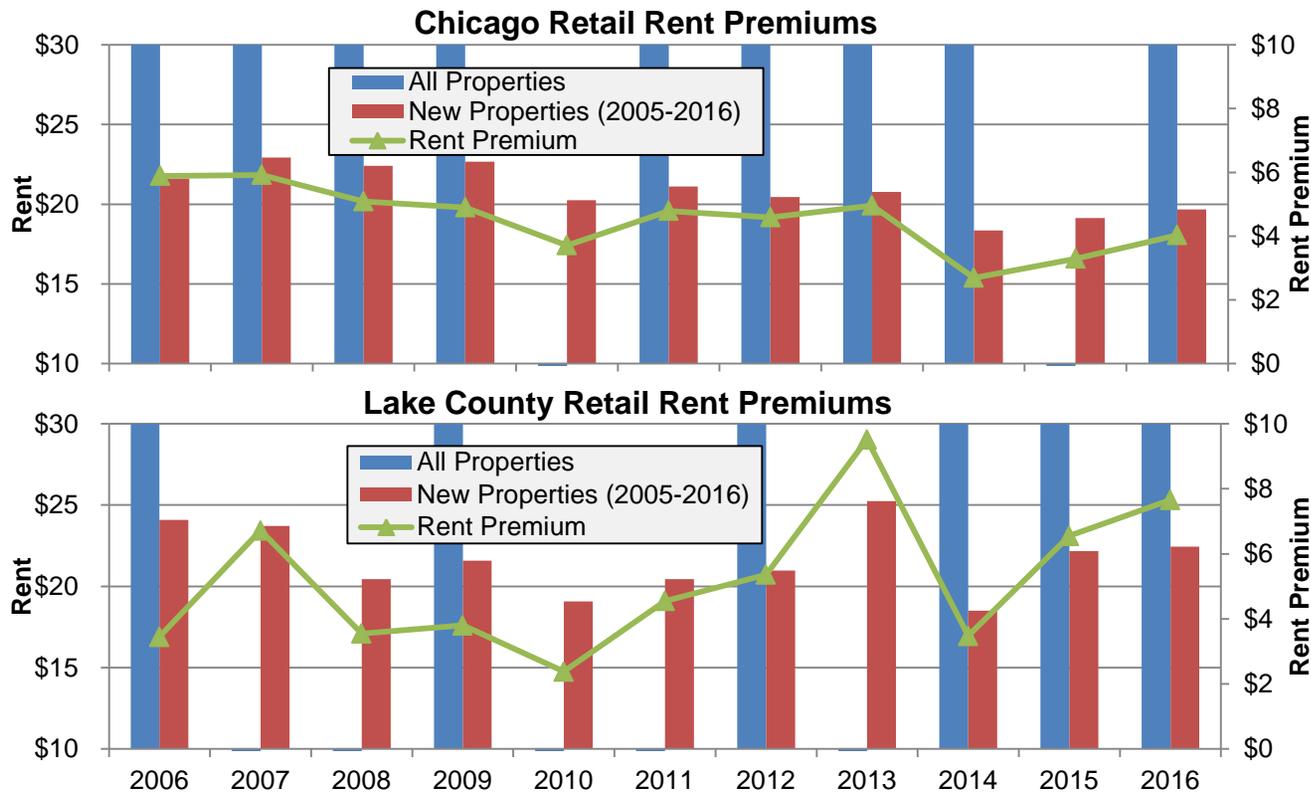
Source: CoStar

Retail Vacancy

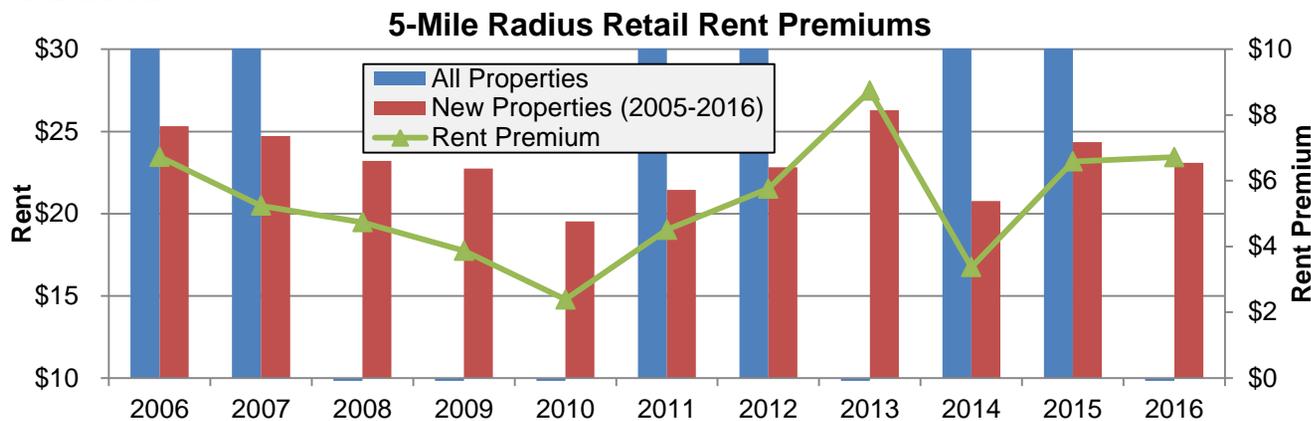


Source: CoStar

- While retail vacancy followed similar trends for all three market areas through 2013, vacancy trends for the 5-Mile Radius and Lake County have diverged since 2014.
- Of the three market areas, the 5-Mile Radius currently has the highest retail vacancy rate at approximately 9%.
- In a stark contrast from office rent, retail rent in the 5-Mile Radius has been consistently higher than both the Chicago MSA and Lake County.
- As of 2016, average retail rent in the 5-Mile Radius is approximately \$17, compared to \$16 in the Chicago MSA and \$14 in Lake County.

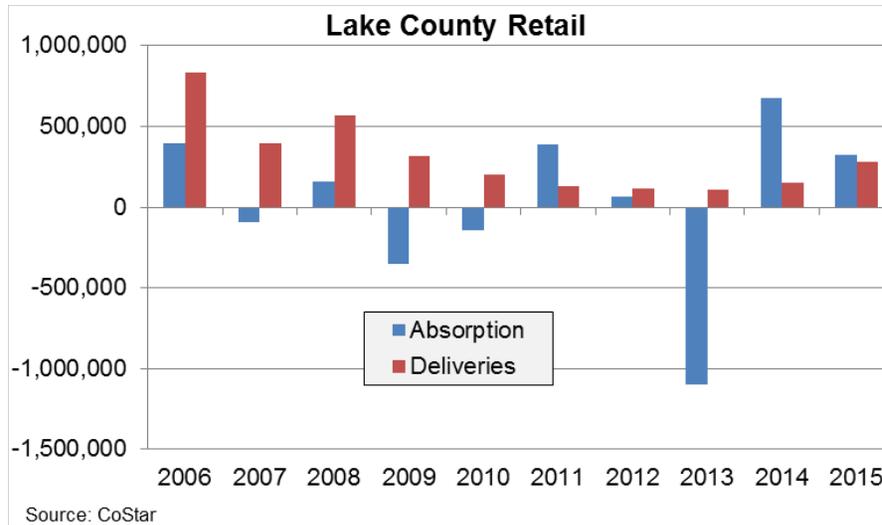


Source: CoStar



Source: CoStar

- The rent premium for new retail space in Chicago is the lowest among all market areas, nearly half the premium in Lake County and the 5-Mile Radius.
- New retail property rent in Lake County and the 5-Mile Radius hit a significant increase in 2013, when new property rent was nearly double the rent for all retail properties.
- In 2016, the rent premium for new properties in Lake County and the 5-Mile Radius has leveled out around the \$6-\$7 mark.



- During the years prior to the Recession, retail deliveries (supply) in all market areas were higher than absorption (demand), lending to the prospect of overbuilt retail space in the 5-Mile Radius and the Greater Chicago area.
- Since 2014, each market area has increased their respective net absorption, higher than deliveries, indicating a slow but substantial recovery from the 2008 Recession.

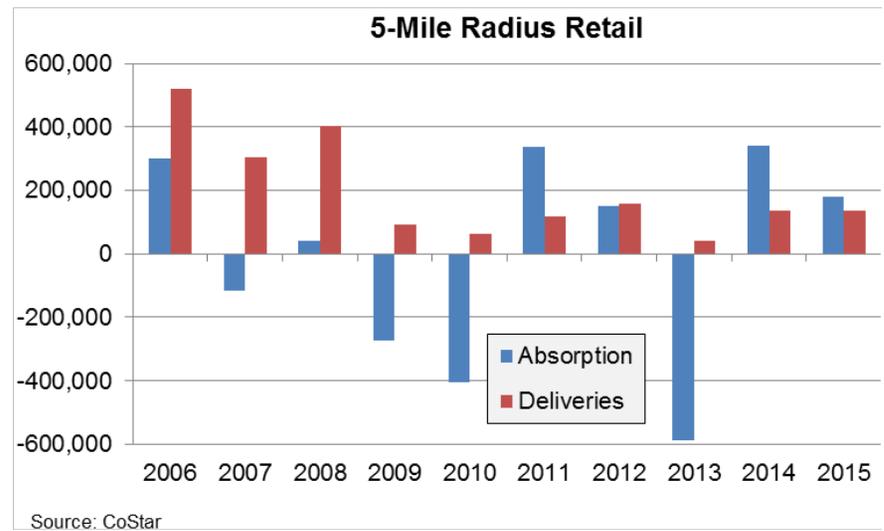
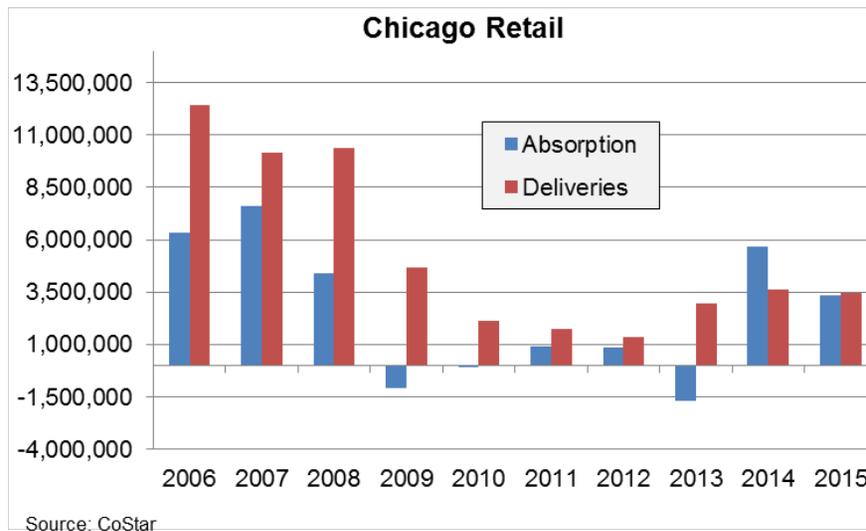


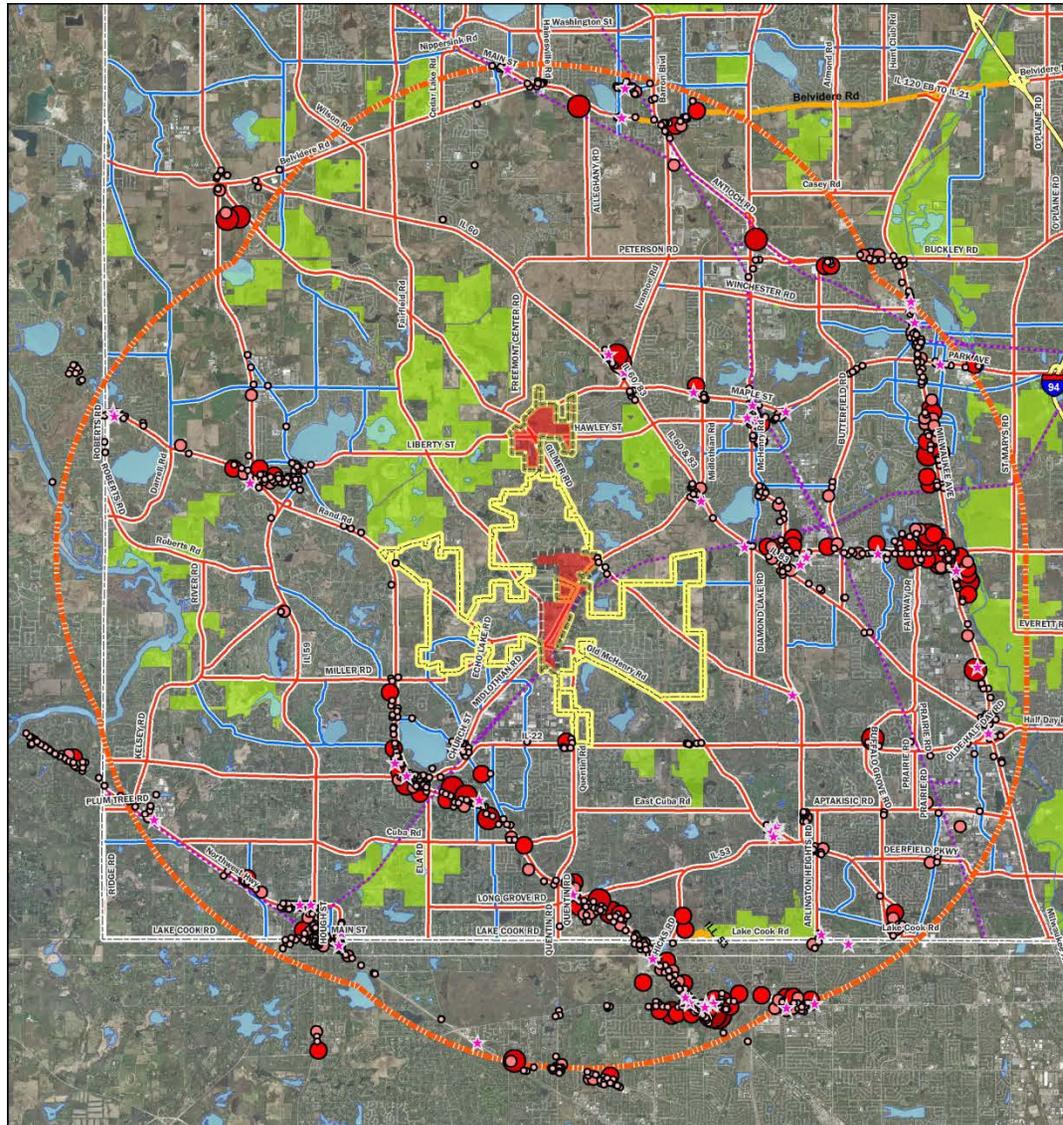
Figure 40 - Cumulative Retail Inventory Change (2006-2016)

Property Type	Chicago	Lake County	5-Mile Radius
Total Absorption (SF)	29,843,961	1,045,852	242,054
Total Deliveries (SF)	54,552,936	3,394,349	2,042,057
Total Occupancy Change (SF)	27,510,426	806,781	-148,547
Total Vacancy Change (SF)	8,567,551	1,408,341	1,106,150
2006 Inventory	502,866,134	37,859,340	21,874,373
Total Deliveries % of 2006 Inventory	10.8%	9.0%	9.3%

Source: CoStar

- Since 2007, all three markets added space at a rapid pace (9% to 10.8% of 2006 inventory).
- Retail deliveries in the 5-Mile Radius have accounted for 60% of all retail deliveries in Lake County.
- The 5-Mile Radius has absorbed 12% of all retail deliveries since 2006, while Lake County has absorbed 31% and Chicago has absorbed 55%.
- The implication is that the 5-Mile Radius is over built with retail space. Later in this report, the analysis will further evaluate the relationships between growth inventory and growth in retail sales.

Village of Hawthorn Woods, Illinois Retail Buildings within 5-Mile Radius



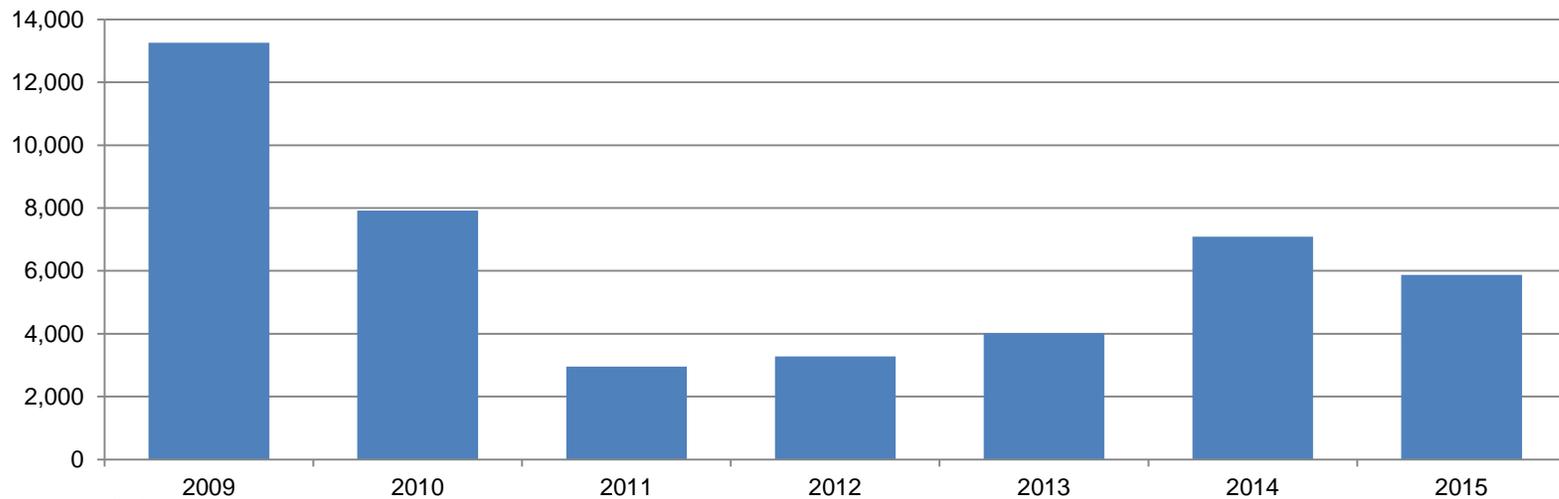
- Village of Hawthorn Woods
 - Forest Preserve District of Lake County
 - 5-Mile Buffer
 - ★ Vacant Buildings (939,599 SF)
 - Rentable Building Area (22,551,839 SF)**
 - Less than 25,000 SF (32%)
 - 25,001 - 50,000 SF (22%)
 - 50,001 - 150,000 SF (19%)
 - 150,001 - 300,000 SF (19%)
 - Greater than 300,001 SF (8%)
- Total Retail - 1204 Buildings
Within the Village of Hawthorn Woods - 3 Buildings



National Retail Sales Trends - The Legacy of the Recession

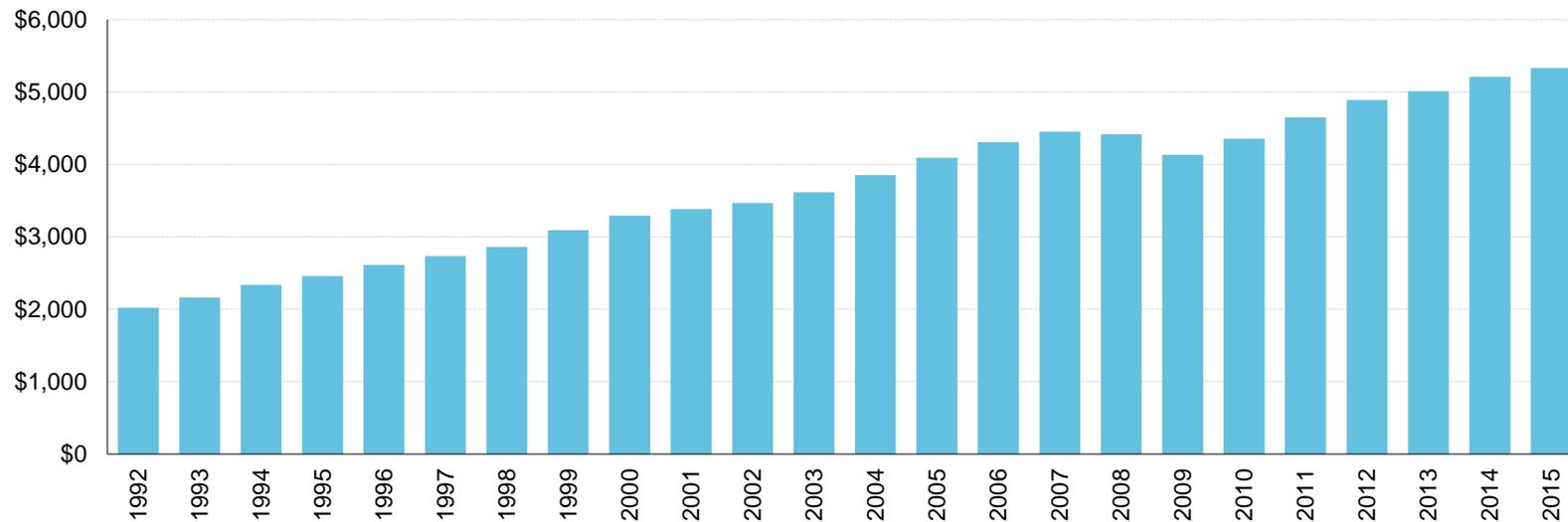
AECOM examined retail spending from 1992 through 2015 to provide clarity regarding significant changes that have unfolded in national retail markets. The Great Recession had significant and lingering impacts on the U.S. retail market. Retail spending has recovered from the recession, increasing over 26% from \$4.1 trillion in 2009 to \$5.3 trillion in 2015. Per U.S. household, this equates to an average spending increase of \$7,531 or 21%. From 1992 to 2015, retail sales per household more than doubled from \$21,105 to \$42,782. The following chart summarizes national retail sales from 1992 to 2015. The impact of tighter credit markets, decreased consumer spending and over-construction led to a wave of bankruptcies among American retailers after 2009. While chains such as Sharper Image, Circuit City and Linen ‘n Things filed for bankruptcy protection, other chains like Office Depot, Lowe’s and J.C. Penny were forced to downsize operations; General Motors and Ford also experienced dramatic auto dealership closures, resulting in significant local fiscal impacts.

Figure 41 - Announced Retail Store Closings



Source: Retailindustry.about.com

Figure 42 - Retail Sales, Millions of Dollars



Source: US Census

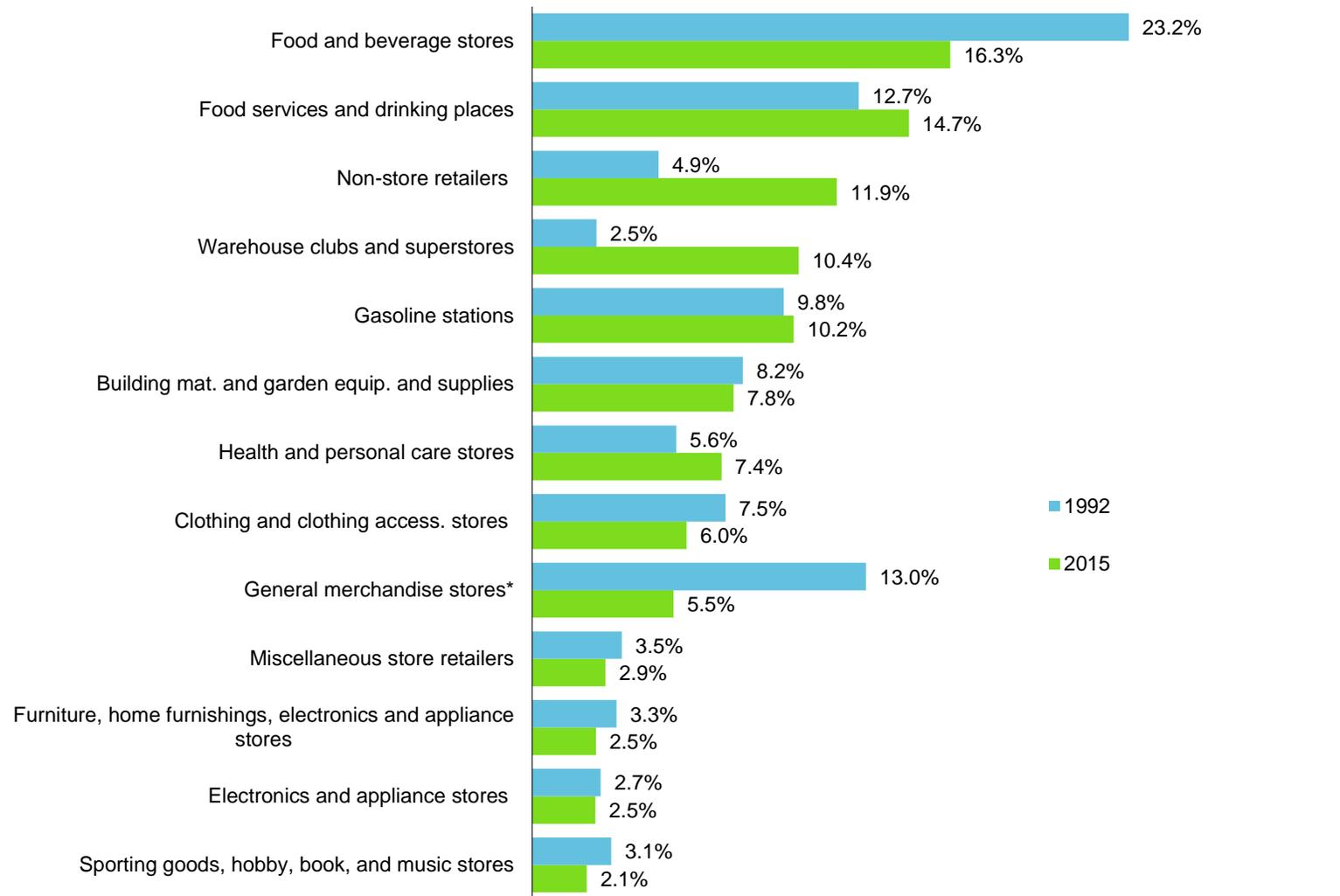
- While the pace of store closures has slowed, trends for 2014 and 2015 are impacted by the bankruptcy of Radio Shack, as well as the Staples/Office Depot merger announcement (which did not gain SEC approval) and the Sports Authority closure.
- Trends also reflect the reality of improved occupancies, linked with limited new retail construction since 2010. Tenanting options have expanded beyond critical care centers, dollar stores, and Aldi.
- Auto sales were particularly hard hit during the Great Recession. Auto-related sales dropped by almost 26% from 2007 to 2009. Unprecedented closings and substantial loans from the federal government reflected the precarious financial state of automobile firms. By 2015, auto-related sales have recovered dramatically.
- During the recession, spending patterns shifted throughout the country. Wal-Mart, dollar stores and other discount retail stores captured market share from more upscale competitors. Auto repair stores thrived as consumers invested in their vehicles rather than buy new ones. Full-service restaurants experienced declining sales; however, fast food and limited-service restaurants sales slightly increased. Grocery store sales also remained competitive as more people chose to eat at home rather than out at restaurants.

Shifting Consumer Spending

As consumers have regained confidence and retail markets have regained strength, spending patterns have been influenced by other factors. Key trends relating to shifting retail market spending were identified:

- Where American's are spending their money is changing. Non-store retailers – infomercial, catalog, door-to-door, internet retailers, etc. – and warehouse clubs and superstores are capturing larger shares of total retail spending while food and beverage stores and general merchandise stores are losing shares. The following chart displays the distribution of retail dollars by category between 1992 and 2015.
- The expansion of warehouse clubs and superstores has fueled the decline in sales at food and beverage stores, general merchandise stores, and department stores. Warehouse clubs and superstores have expanded locations as well as offerings, adding grocery and other products to their inventory. In 1992, 2.8% of general retail dollars were spent at stores such as Costco, Sam's Club, Wal-Mart and Target. In 2015, this share increased to 11.6%.
- The rapid growth of e-commerce has allowed non-store retailers such as Amazon to capture substantially more retail market spending from traditional retailers. However, it is important to note that non-store retail is not synonymous with e-commerce: Only 54% of retail sales from non-store retailers are e-commerce based.
- Drug stores and pharmacies are offering an increasing large scale of products and services, contributing to the growth in sales at health and personal care stores.
- Building material stores (Lowe's, Menards and Home Depot) have dramatically altered the market for home improvement supplies. In general, sales grew strongly through 2006, only to suffer through the recession. While sales have recovered, appreciate that local housing markets have not recovered to pre-recession construction trends.
- Grocery stores have remained relatively stable. Between 1992 and 2015, spending on food and beverage stores grew at an annualized rate of 2.7%.
- From 1992 to 2015, gasoline sales increased at a 4.5% annual rate. Gasoline prices play a major role in determining the growth of gasoline retail sales. Gasoline sales spiked from \$373 billion in 2009 to \$552 billion in 2013, a 47.8% increase. However, recent dramatic decreases in gasoline prices have led to an uncharacteristic 21.7% decrease in gasoline sales from 2013. Future factors contributing to lower gas prices are more fuel efficient vehicles.
- The rollout of Macy's as a national brand highlights the disappearance of more than ten regional department store brands and has had a significant impact on existing shopping malls. In the same context, the pivot of Sears/Kmart towards a REIT structure raises concerns for the eventual need to reposition a large number of regional malls still anchored by these chains. Sears and Kmart have been closing stores consistently for the last two years.

Figure 43 - Percent of General Retail Dollars by Category, 1992 and 2015



* General merchandise stores not including warehouse clubs and superstores
 Source: US Census

- Shopping centers are adapting to the changing retail market by providing a more varied collection of tenants looking to experience shopping, with the evolution of the “Lifestyle Center” as a specific example. Existing malls have seen the incorporation of outdoor lifestyle elements to sustain competitive positioning. Of note, health care is being looked at as an anchor use in these projects.
- For traditional regional shopping malls, the general sense is that the stronger, well-located malls are doing well, while older malls are running into difficulties, particularly if the mall is an older property.
- Big box formats are increasingly engaging in battles for market share. In most cases, retailers involved locate stores in close proximity to pull sales from a competitor, or keep older stores dark to prevent competitors from relocating into a market. While precise implications are not clear, there is a general sense that larger format retailers have added new space faster than they have grown sales, resulting in lowered store sales per square foot and greater competitive pressures for independent store owners.
- Project scale drives market reach, with large projects needing a regional market to sustain project fundamentals, and smaller projects tied to neighborhood, campus, or community scale markets. On a practical basis, regional destination scale projects generally start at about 175,000 sq. ft. of retail, space and can culminate at more than 2 million sq. ft. of rentable space.
- National chain stores in the apparel, shoes, and accessories segment tend to prefer tenaning scenarios where they can cluster together. Pre-recession, the combination of Chico’s, Ann Taylor, Coldwater Creek, and Talbots was a typical example; not all of these chains survived the recession.

Tracking E-Commerce Sales

The U.S. Census Bureau tracks retail sales and e-commerce through the Annual Retail Trade Survey. Retail sales are collected by industry and companies self-report both sales and e-commerce sales.

E-Commerce Defined

E-Commerce: Sales from any industry that occur online as self-reported by retailers.

Non-Store Retailers: A specific subsector that includes retailers selling though paper and electronic catalogs, door-to-door solicitation, in-home demonstration, "infomercials," selling from portable stalls or through vending machines.

Electronic Shopping and Mail Order House: A specific industry group of retailers selling through catalogs, toll free telephone numbers, or interactive television or computer media.

The Rise of E-Commerce

The internet has transformed most sectors throughout the country and the retail sector is no exception. Important trends and implications of this transformation were identified:

- Since 1998, e-commerce sales have exploded from \$5 billion to \$300 billion in 2014. This represents a nearly 30% annualized increase in e-commerce sales, compared to under 4% for retail sales overall.
- As of 2014, e-commerce sales represented 6.4% of all non-food service retail sales, up from 0.2% in 1998. Post-recession, the share of total retail sales from e-commerce has grown on average 10% a year.
- The change in consumer behavior and general increase in e-commerce spending have led traditional department stores such as Wal-Mart, Kohl's, Best Buy and Target to boost their online presence and reduce traditional big-box establishments. This reallocation of a brand's retail sales from brick-and-mortar stores to online platforms is of little concern to retail chains, but has a significant importance for municipalities relying on retail sales taxes in the community.
- The spread of wireless and mobile technologies and the expansion of technical capabilities are leading retailers to develop new ways of interacting and connecting with consumers. For example, data capture and analysis capabilities are allowing retailers to target potential customers more effectively; the share of internet retailing over mobile devices is quickly growing allowing retailers to connect with consumers virtually 24-7.
- Retailers are developing new distribution and sales channels, merging the boundaries between traditional brick-and-mortar store retail and internet retailing. Omni-channel retailing is emerging, with the goal of providing consumers a consistent, integrated experience across retail channels. For example, some traditionally online-only retailers are opening small brick-and-mortar stores while other traditionally offline retailers are integrating online and in-store sales through services such as "Order online, pick-up in store," turning retail stores into quasi-distribution centers.
- The growth in e-commerce sales has increased the demand for large scale fulfillment and distribution centers located close to major metropolitan areas.

Retail Market Implications

Overall retail trends in 2016 are mixed. The big headlines seem to focus on challenges – Sports Authority went bankrupt (although Dick's Sporting Goods are picking up many former locations and employees), department stores such as Macy's have had a difficult year so far, and Gap/Old Navy is closing several locations. With the exception of Walmart, large format store sales in 2016 are off from same store sales in 2015. Foreign retailers, such as UNIQLO, have scaled back their US expansion plans. Sources such as Kiplinger predict that department store earnings will continue to be a disappointment for the year, citing a struggle to put inventory online and a need to offer more

entertainment in stores to engage customers. They also suggest that only a few department stores will be able to adjust to the new digital/in-store world and that some will not survive. Kiplinger forecast for the second-half of 2016 for the retail sector is 4.2% growth from 4.7% in 2015.

Trends are not negative in all aspects of retail. JLL global retail chairman David Zoba at ICSC RECon 2016 said that food & beverage and local retailers are "...busier than ever..."; examples include 100 new 5 Guys hamburger locations in 2016. Difficult spaces to lease are larger spaces at regional malls previously held by department stores or large format stores such as recently bankrupt Sports Authority or locations being closed by Macys, Gap, and Old Navy. (Bisnow May 23, 2016). While auto sales have continued to grow through 2016, trends for 2017 point to slowing growth. Off-price stores are doing well (T.J. Maxx & Marshall's) and other full price chains are betting on off-price (more Nordstrom Racks than regular Nordstrom stores; Macy's expanding Backstage stores; etc.)

The biggest overarching trend is the link to technology and the relationship between online sales and web-presence and the sales in the physical store ("omni-channel strategy"). The growth of online sales continues and climbing at double-digit rates. Online and mail-order sales accounted for 10% of all goods sold in April 2016. Amazon's recent expansion of clothing sales will have an impact on clothing sales at large and small stores, particularly in locations where one and two-day delivery are available. Physical stores will need to be linked to an online presence to keep up with changes in the industry and consumer expectations.

Shoppers now use the web to search store inventory and to compare prices before going to the physical store. Store that do not have a web presence are at a distinct disadvantage. Shops offering a range of electronic payment options are part of that trend. More payment options are available, such as Pay Pal, Apple Pay and Android Pay. Other payment trends include in-store mobile devices such as tablet-based POS (point-of-service) devices. Examples of this are found in Apple and Nordstrom Rack stores, where roaming staff members work from an iPhone to check out customers; peripheral equipment is inexpensive and could easily be used by smaller retailers.

The lines are being blurred between online retailing and in-store presence. Pop-ups by previously online only stores (such as Birchbox) show that the customer will easily move between the digital and physical platforms and that retailers should do the same. One category that doesn't worry too much about online competition is home improvement stores. Lowes and Home depot continue to experience sales growth even though there are specialty outlets online. Most customers want home improvement and garden items right away. However, both of the large format leaders offer purchase online with in-store pickup.

Even though fast food chains have been touting their "artisan" menu items, customers know the difference and prefer authentic goods and services. The Farm-to-Table and locally-sourced food trend is growing in restaurants and specialty food purveyor stores. So too is the popularity of unique gifts and crafts accompanied with stories of their production. Small-scale, craft brewers/brewpubs are still trending in the food and beverage category. Although the "hipster" fad is fading in major markets, the residual trend toward craft remains. This should

be a positive note for smaller downtowns and Main Streets with a focus on retail-dining-entertainment (RDE) clusters. Food & Beverage sector trends include:

- The impact of technology is also being felt in the restaurant industry. Tech-driven delivery is becoming more wide-spread in the F&B category. App-connected food delivery services are springing up and could be assembled in a downtown setting that doesn't already have a service available.
- "Clean Menus" – the drive for more natural ingredients is showing up at McDonald's, Panera Bread, and Chipotle. Independent operators will begin to feel the pressure from customers who will expect such steps.
- Bringing food into retail (i.e. Ikea, Urban Outfitters bought Pizzeria Vetri) will put retailers in competition with restaurants. Outdoor World (owned by Bass Pro Shops) is putting Islamorada Fish Company restaurants in their stores with hunting and fishing equipment. Smaller operators might consider this idea as a way to share space with a sub-tenant and draw additional customers.
- App-based reservation systems like Open Table, Nex Table, and Reserve are becoming common at non-chain and upscale restaurants. Patrons are comfortable working in the tech space and like the links to smartphones.

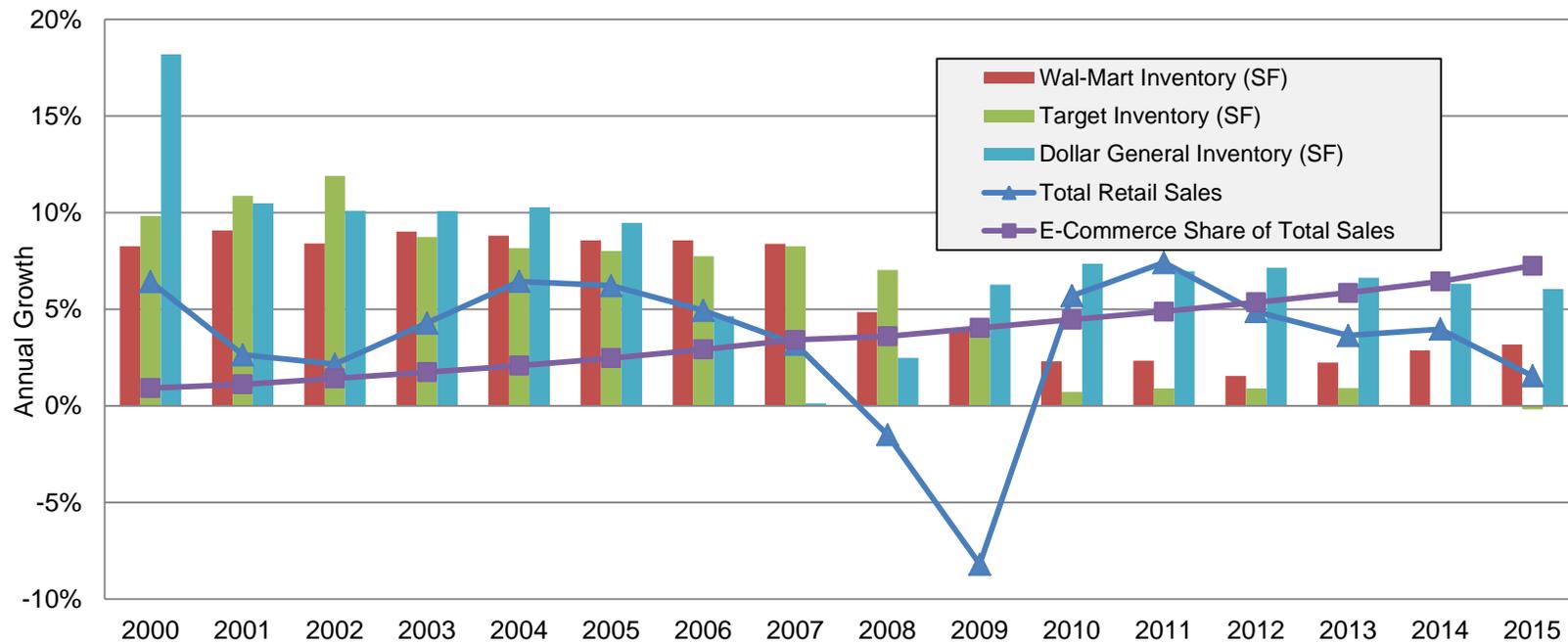
Other Retail Store Type Trends identified by the National Retail Federation include::

- Growth in pet supplies and accessories (particularly specialty dog stores).
- Even though large format Sports Authority went bankrupt, running stores and yoga apparel is strong.
- Health care is expected to become a more significant tenant in suburban malls.
- Unstaffed convenience stores coming to US market. Currently found in Europe, the shops of 480 square feet sell milk, bread, diapers, and limited convenience inventory. No tobacco, OTC medicines or alcohol are offered.

Expansion Trends for Major Retailers

Since 2000, major retailers such as Target, Wal-Mart, Dollar General, Gap, Macy's and Kohl's have experienced significant fluctuations in retail inventory square footage. During the first half of the 15 year period, major retailers in the US added retail space at a much higher rate than national retail sales. After the Recession, the same retailers began to decrease the amount of delivered retail square footage each year, and in some cases, began closing stores.

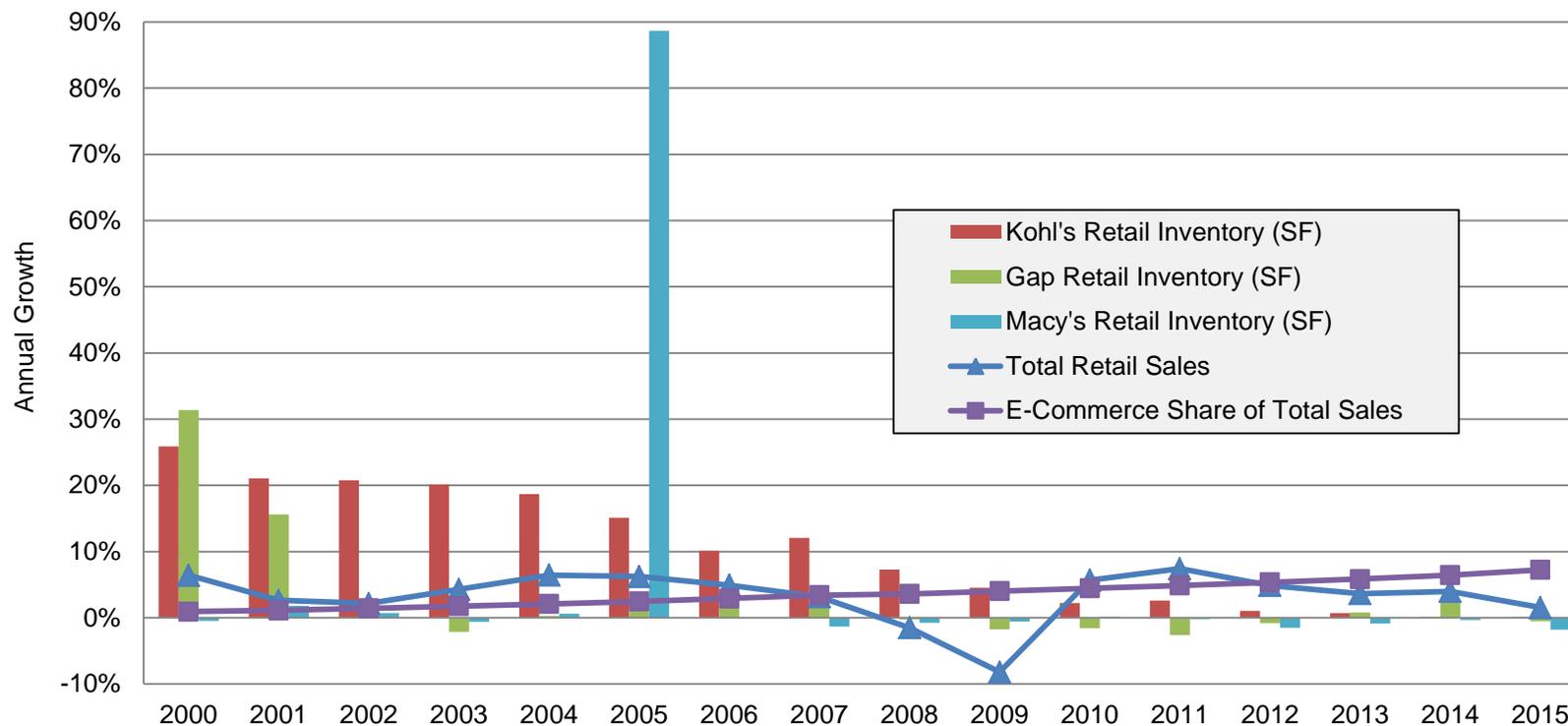
Figure 44 - General Merchandise Store Inventory and National Retail Sales Growth (2000-2015)



Source: US Census, Company 10k Filings

From 2000 to 2007, Wal-Mart added an average of 32.7 million square feet annually (8.7% CAGR), Target added 13.1 million (9.1% CAGR), and Dollar General added 3.5 million (7.8% CAGR) while national retail sales grew at an average annual rate of 4.3%, effectively half the rate of retail space deliveries. Since 2008, both Wal-Mart and Target have added significantly less retail space, with Wal-Mart adding an average of 17.4 million (2.6% CAGR) square feet per year, Target adding 3.9 million (1.1% CAGR), while national retail sales have increased at an average annual rate of 2.6%. As national retail sales have gradually returned to Pre-Recession levels of growth, retail inventory growth has remained lower than long term averages. In contrast, Dollar General has remained consistent with pre-Recession retail space deliveries, adding approximately 33.6 million square feet annually (6.7% annually) since 2008. This slowing of retail inventory growth can be attributed to a number of factors. Prior to the Recession, major retailers added square footage at a much faster rate than retail sales, effectively outpacing demand and creating a market determined capacity that limits the amount of retail square footage retailers can currently deliver. Since 2000, e-commerce sales have rapidly increased, decreasing the demand for in-store shopping.

Figure 45 - Apparel Store Inventory and National Retail Sales Growth (2000-2015)



Source: US Census, Company 10k Filings

Kohl's, Gap, and Macy's have experienced similar retail inventory trends. From 2000 to 2007, Kohl's added, on average, 6.4 million sf of retail space per year (16.8% CAGR), Gap added approximately 2 million sf annually (3.4% CAGR), and Macy's added 9.3 million sf annually (9.7% CAGR). Macy's retail deliveries are heavily skewed due to the 2005 acquisition of the May Company which essentially doubled the amount of Macy's total retail square footage. Since 2008, Kohl's has added an average of 1.7 million retail sf per year (1.6% CAGR), while Gap and Macy's have closed 212,500 (-0.6% CAGR) and 1.1 (-0.7% CAGR) million sf of store space. The significant increase in retail inventory during the years leading up to the Recession has set a self-imposed capacity similar to general merchandise stores, resulting in store closings and a decrease in annual retail space deliveries since 2008. In addition to lower deliveries and store closings, apparel retailers have been particularly impacted by the increase in national e-commerce sales, as a large portion of online sales stem from apparel and accessories, further decreasing demand for in-store sales.

Retail Sales Analysis



Analysis Process

The following analysis provides an overview of retail sales data for Hawthorn Woods, the 5-Mile Radius surrounding Hawthorn Woods, Lake County, the Chicago MSA, Illinois and the US. Primary data sources include, the Illinois Department of Revenue, CoStar, and ESRI Business Analyst.

Retail Sales

The Illinois Department of Revenue shows standard industrial classification code (SIC) data for municipal sales tax collections by place and year. Industries are separated into ten categories:

1. General Merchandise: Department stores, variety stores and miscellaneous general merchandise stores.
2. Food: Grocery stores, meat and fish markets, bakeries and miscellaneous food stores.
3. Drinking and Eating Places: Restaurants, bars, fast-food restaurants, hotels and motels.
4. Apparel: Clothing stores, accessory stores and shoe stores.
5. Furniture, Household and Radio: Furniture stores, electronic stores, repair stores and computer stores.
6. Lumber, Building and Hardware: Construction, electrical work, roofing, excavation and hardware stores.
7. Drugs and Miscellaneous Retail: Drugstores, jewelry stores, florists and tobacco stores.
8. Automotive & Filling Stations: Dealers selling new and used automobiles, and gasoline service stations.
9. Agriculture & All Others: Agricultural production, forestry, commercial fishing, hunting and trapping, and related services
10. Manufacturers: Plants, factories, or mills that engage in the mechanical or chemical transformation of materials or substances into new products.

These sectors classify retailers, not products. Some retailers sell items from several categories, but each retailer is classified according to its primary business. For example, the primary business of Walgreen's is to sell drugs and related personal care products (category 7). Walgreen's also stocks food and light hardware equipment. However, all sales are classified according to the retailer's primary business, so any groceries purchased at Walgreen's will show up as sales in category 7—drugs (In the same way, prescriptions filled at Jewel will be counted as category 2—food). Also, the State of Illinois reports on sales tax do include some disclosure issues, where the number of stores in a given community is low enough that reported sales tax can be linked with a specific company. In these cases sales within specific line items are not disclosed, but are included in the totals.

Pull Factor Analysis

Pull factors are ratios that compare local and state retail sales; they are weighted by a community's population. Pull factors less than 1.0 show that an area captures less in retail spending than its population would suggest; therefore, it is reasonable to conclude that this area is losing retail sales to adjacent areas. Pull factors equal to one show that the community captures exactly as much retail sales as its population weighting suggests. Pull factors greater than 1.0 show that an area is an importer of retail sales, above what the resident market would support.

Key Implications

- Total retail sales within the 5-Mile Radius account for approximately 50% of all retail sales in Lake County. Prior to the Recession, Hawthorn Woods ranked fourth in retail sales growth compared to adjacent municipalities, growing at an annualized rate of 2.2%. Post-Recession, Hawthorn Woods ranks sixth in total retail sales growth, growing at an annualized rate of 4.9%. Despite Hawthorn Woods' growth in retail sales, surrounding markets continue to increase at a faster rate.
- Since 2000, Hawthorn Woods has increased retail sales by over \$3 million, at an average annual rate of 2.1%. However, using a pull factor analysis, adjusted for income differences, Hawthorn Woods has experienced a downward trend in captured retail sales across a majority of store types. This likely relates to a surge in competitive retail inventory within five miles since 2006.
- The low pull factors found in Hawthorn Woods indicate that the village captures less retail spending than its population would suggest which implies that a number of the sectors in Hawthorn Woods are experiencing significant leakage to nearby municipalities where retail sales continue to increase.
- Illinois total retail sales per capita provide a statewide benchmark for average retail sales per person (\$13,556). When multiplied by the number of citizens in Hawthorn Woods, the result is \$107,919,557 total potential retail sales compared to Hawthorn Woods' current retail sales of \$12,541,944. After subtracting Hawthorn Woods current retail sales from potential sales, the result is \$95,377,613, which represents the potential leakage of sales out of Hawthorn Woods into adjacent markets. The following provides estimated leakage for select store types:
 - Restaurants – \$11,012,926
 - Food – 13,455,105
 - Drugs – \$16,188,649
 - Automotive – \$18,174,222

- Retailers typically target high income areas for potential locations. Given the large concentration of wealth in the 5-Mile Radius, Hawthorn Woods could play a more active role in the rapidly expanding retail market surrounding the Village. Retail inventory per capita in the 5-Mile Radius is significantly higher at 82 retail square feet per person than state (52) and national (51) averages, reinforcing the trend of overbuilt retail space in the 5-Mile area compared to Illinois and the US. While some municipalities have decreased occupancy since 2006, they have not always seen a corresponding decrease in sales. The implication being that occupied retail space does not always drive sales within the 5-Mile Radius.

Local Market Analysis

Figure 46 - Retail Sales by Store Type (2015)

Total Retail Sales	Hawthorn Woods	5-Mile Radius	Lake County	HW % of 5-Mile	5-Mile % of Lake County
General Merchandise	\$0	\$611,527,390	\$1,239,950,766	0.0%	49.3%
Food	\$9,607	\$744,176,057	\$1,305,973,826	0.0%	57.0%
Drinking and Eating Places	\$2,885,000	\$511,828,360	\$1,132,853,094	0.6%	45.2%
Apparel	\$4,521	\$110,809,222	\$350,208,658	0.0%	31.6%
Furniture & H.H. & Radio	\$2,260	\$745,455,954	\$1,008,166,232	0.0%	73.9%
Lumber, Bldg, Hardware	\$2,450,909	\$346,243,052	\$662,283,765	0.7%	52.3%
Automotive & Filling Stations	\$5,670,744	\$1,485,195,247	\$2,795,175,169	0.4%	53.1%
Drugs & Misc. Retail	\$300,215	\$822,939,788	\$1,971,024,954	0.0%	41.8%
Agriculture & All Others	\$938,705	\$495,033,179	\$1,159,268,469	0.2%	42.7%
Manufacturers	\$279,983	\$69,918,921	\$219,323,904	0.4%	31.9%
Total	\$12,541,944	\$5,964,102,464	\$11,844,228,837	0.2%	50.4%

Source: Illinois Dept. of Revenue

- Retail sales in Hawthorn Woods account for approximately 0.2% of retail sales within the 5-Mile Radius.
- Automotive, dining, and lumber/hardware stores are the primary sectors in terms of retail sales in Hawthorn Woods.
- Total retail sales in the 5-Mile area account for over 50% of retail sales in Lake County, and almost 75% of all furniture sales.

Figure 47 - Hawthorn Woods Retail Sales by Store Type (2010-2015)

Store Type	2010	2011	2012	2013	2014	2015	2010-2015 CAGR	5-Mile Radius 2009-2015 CAGR*	Illinois 2009-2015 CAGR*
General Merchandise	\$0	\$0	\$0	\$0	\$0	\$0	-	0.3%	1.7%
Food	\$39,727	\$24,741	\$13,358	\$4,873	\$4,648	\$9,607	-24.7%	2.3%	2.4%
Drinking and Eating Places	\$2,469,656	\$2,557,486	\$2,525,823	\$2,651,821	\$2,688,047	\$2,885,000	3.2%	4.5%	4.9%
Apparel	\$20,000	\$48,300	\$31,400	\$26,551	\$52,329	\$52,329	21.2%	1.2%	3.2%
Furniture & H.H. & Radio	\$27,494	\$19,374	\$14,472	\$13,275	\$11,217	\$11,217	-16.4%	9.5%	2.1%
Lumber, Bldg, Hardware	\$2,263,287	\$2,294,206	\$2,325,547	\$2,349,210	\$2,547,121	\$2,450,909	1.6%	5.6%	3.1%
Automotive & Filling Stations	\$3,720,000	\$5,200,000	\$5,650,000	\$5,850,000	\$5,863,379	\$5,670,744	8.8%	5.7%	5.4%
Drugs & Misc. Retail	\$578,992	\$616,232	\$357,460	\$1,174,608	\$2,052,657	\$300,215	-12.3%	4.3%	3.6%
Agriculture & All Others	\$544,822	\$509,404	\$487,657	\$436,671	\$897,419	\$938,705	11.5%	5.1%	1.8%
Manufacturers	\$206,729	\$205,618	\$229,908	\$213,984	\$218,887	\$279,983	6.3%	-3.0%	2.1%
Total	\$9,870,687	\$11,475,410	\$11,632,229	\$12,720,993	\$14,335,704	\$12,541,944	4.9%	4.4%	3.4%

Source: Illinois Department of Revenue

*5-Mile Radius and Illinois experienced effects of Recession in 2009 as opposed to 2010 in Hawthorn Woods.

- Although many sectors in Hawthorn Woods have seen an average annual decrease in sales, total retail sales have grown by 4.9% annually since 2010, as primary store types such as automotive, lumber, and dining have all increased sales.
- Average annual growth in retail sales has been higher in Hawthorn Woods (4.9%) than in the 5-Mile Radius (4.4%) and Illinois (3.4%) since the Recession.
- Hawthorn Woods saw the impact of the Great Recession one year later compare to other markets.

Figure 48 Hawthorn Woods Retail Sales by Sector (2000-2015)

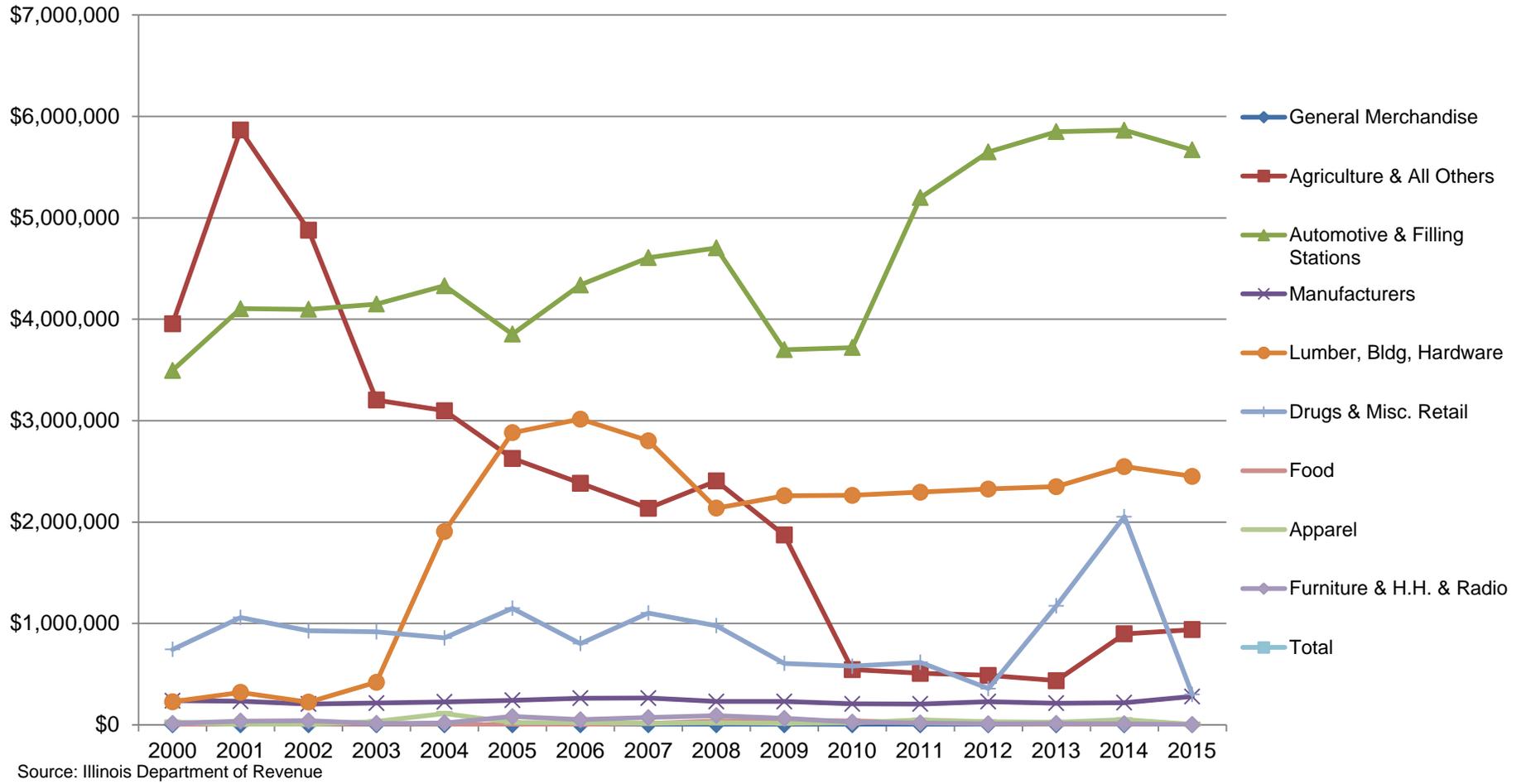
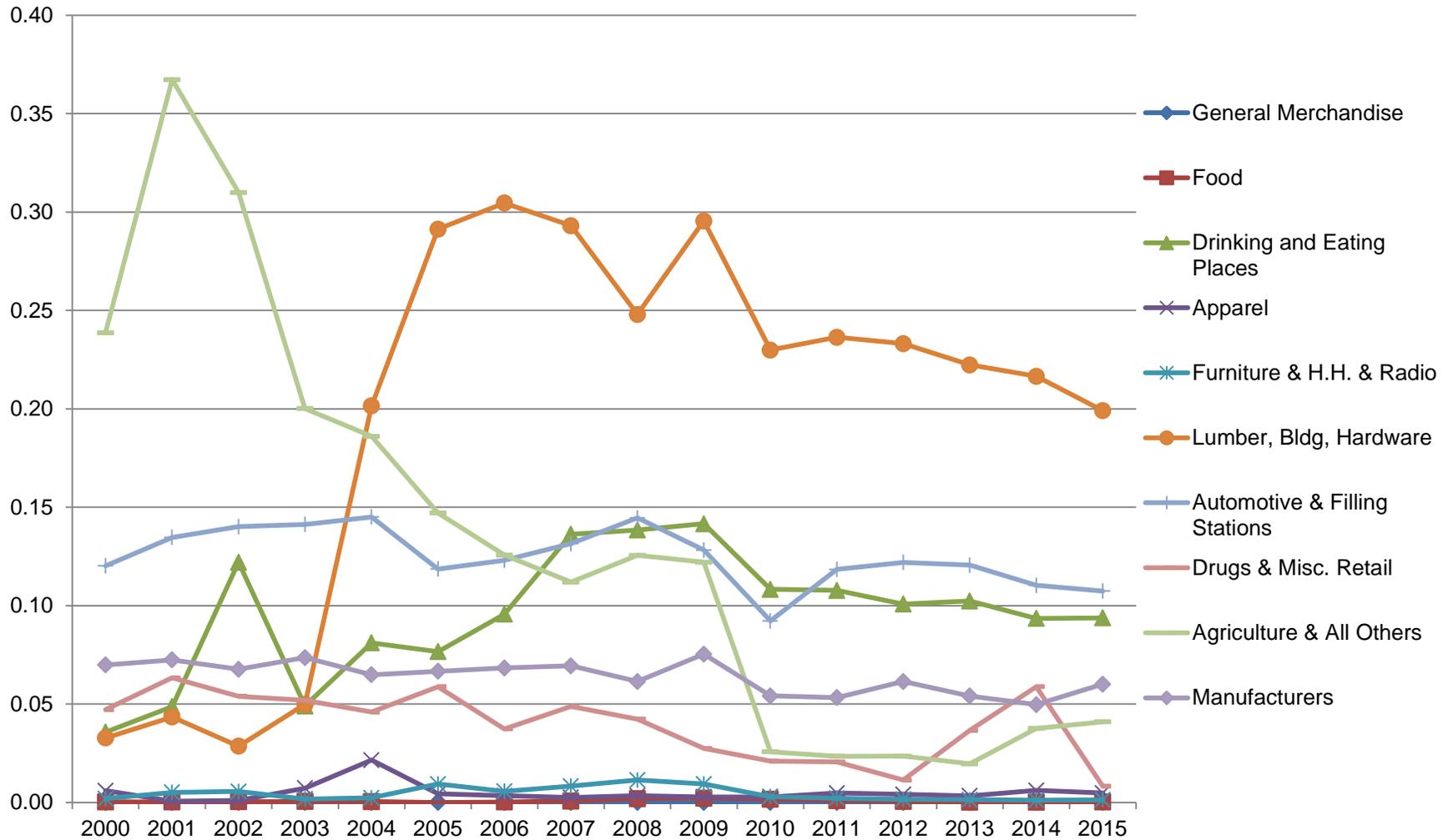
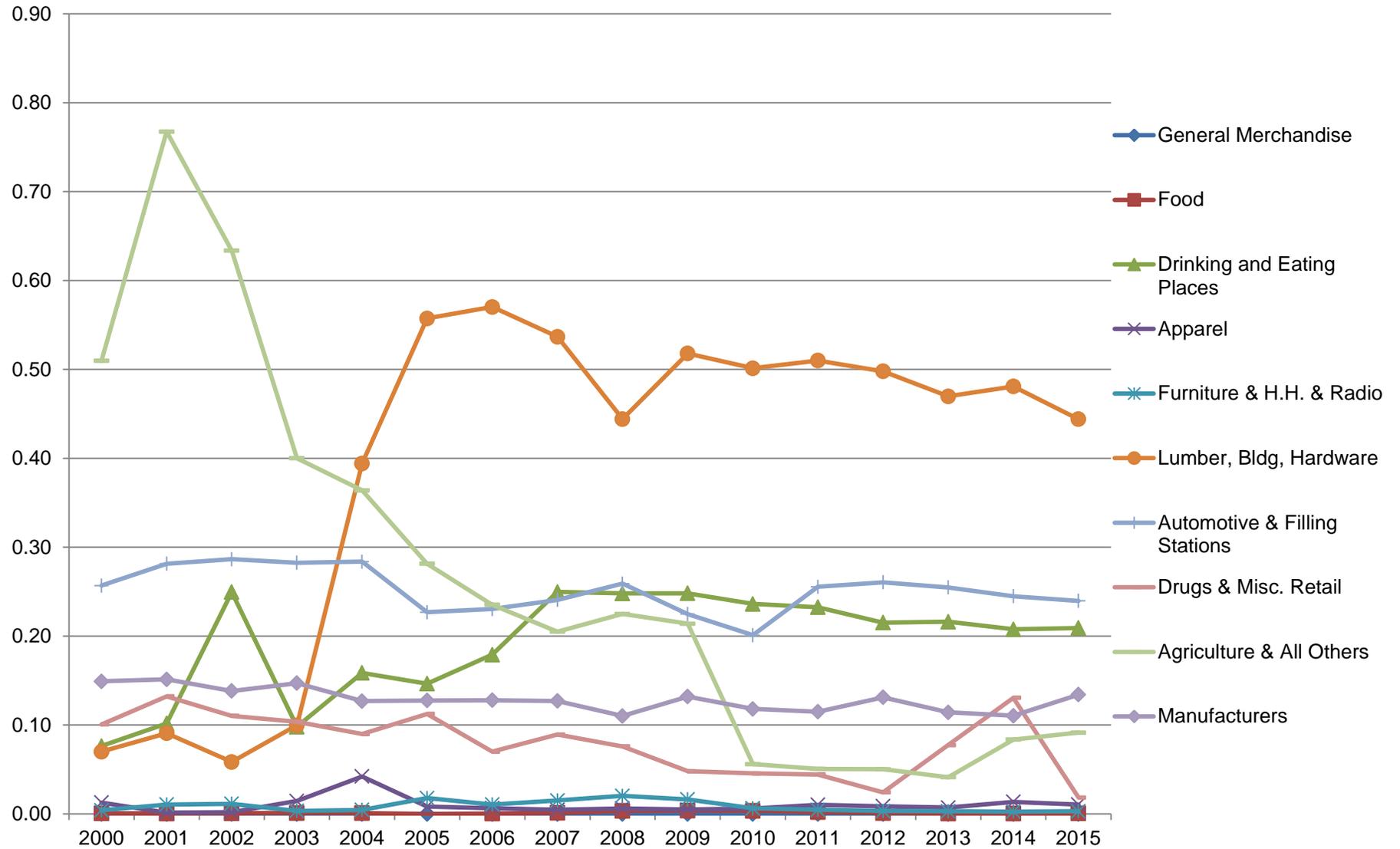


Figure 49 - Hawthorn Woods Income Adjusted Retail Pull Factors



Source: Illinois Department of Revenue

Figure 50 - Hawthorn Woods Non-Income Adjusted Retail Pull Factors



Source: Illinois Department of Revenue, US Census

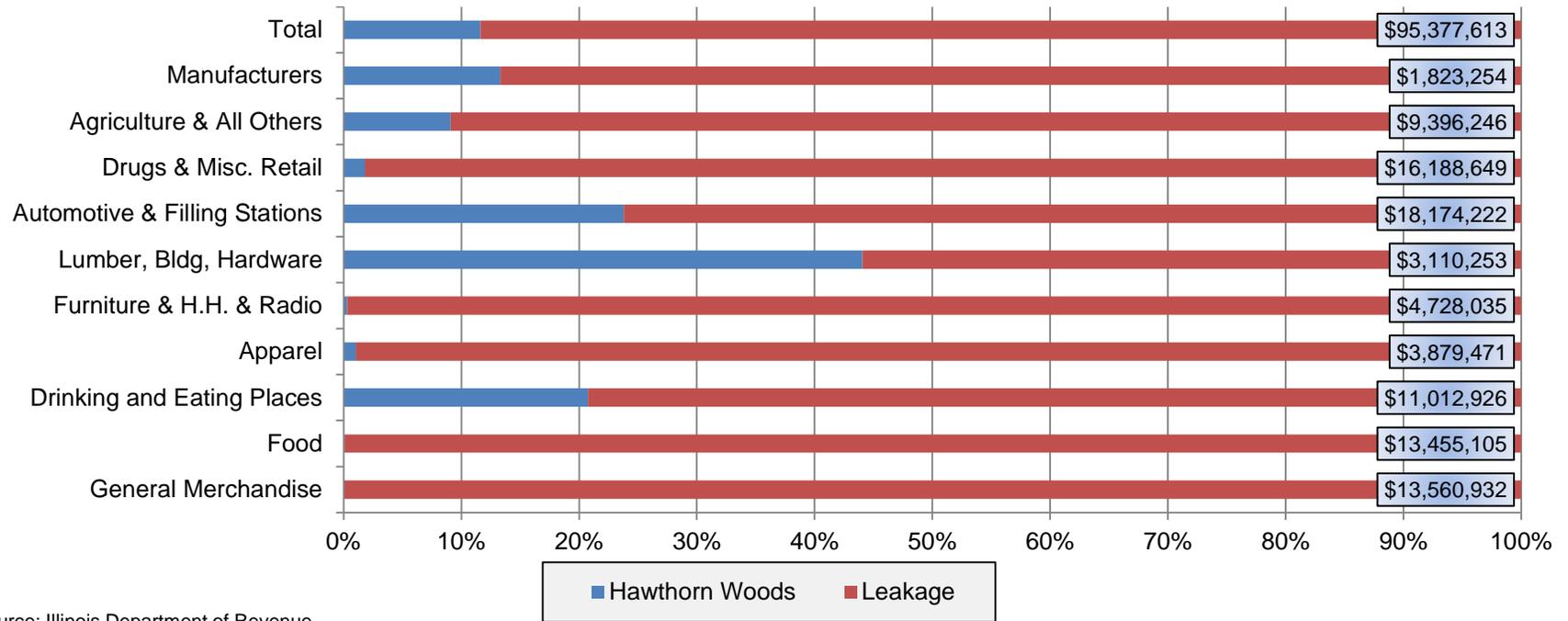
Hawthorn Woods Income Adjusted Pull Factor Implications

- The pull factors above are indicators of retail sales performance based on adjustments for local incomes and populations relative to state averages. Pull factors greater than 1.0 show that an area is an importer of retail sales, above what the resident market would support. Pull factors less than 1.0 show that an area captures less in retail spending than its population's statewide average.
- All store types in Hawthorn Woods have a pull factor rating below 0.5 which is an indication of below average retail sales in addition to potential sales leakage.
- The low pull factors found in Hawthorn Woods indicate that the village captures less retail spending than its population would suggest which implies that a number of the sectors in Hawthorn Woods are experiencing significant leakage to nearby municipalities where retail sales continue to increase.

Hawthorn Woods Non-Income Adjusted Pull Factor Implications

- Adjusting for state and local incomes tends to raise or lower pull factor levels depending on the level of local income. If an area has a particularly high income per capita, the pull factor will compensate for that higher income and lower the value of the pull factor. A non-income adjusted pull factor will not compensate for income, allowing for analysis of a direct ratio of local to state sales.
- Non-income adjusted pull factor levels across all store types in Hawthorn Woods remain below one, indicating that sales in Hawthorn Woods are underperforming and leaking sales without compensating for higher income levels.

Figure 51 - Retail Sales Leakage 2015

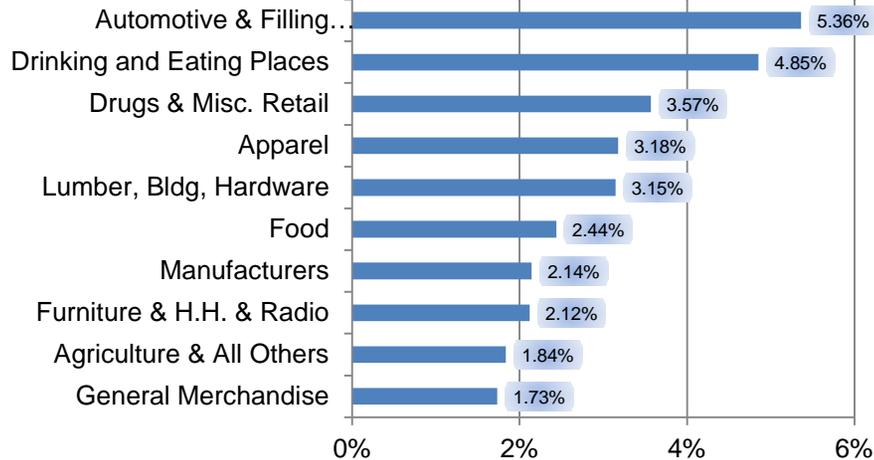


Source: Illinois Department of Revenue

- The chart above illustrates potential retail sales leakage out of Hawthorn Woods, based on Illinois and Hawthorn Woods retail sales per capita. The difference between the two can be seen as sales that Hawthorn Woods may be losing to other market areas based on statewide averages.
- The dollar values on the right side of the table represent the difference between Illinois sales per capita multiplied by Hawthorn Woods population and Hawthorn Woods total retail sales.
- According to statewide annual averages, an area with the population of Hawthorn Woods has the potential of earning \$107,919,557 total retail sales.
- Given that Hawthorn Woods earns \$13 million in total retail sales, approximately \$95 million in retail sales is leaking into adjacent markets.

Figure 52 - 5-Mile Radius Retail Sales Analysis

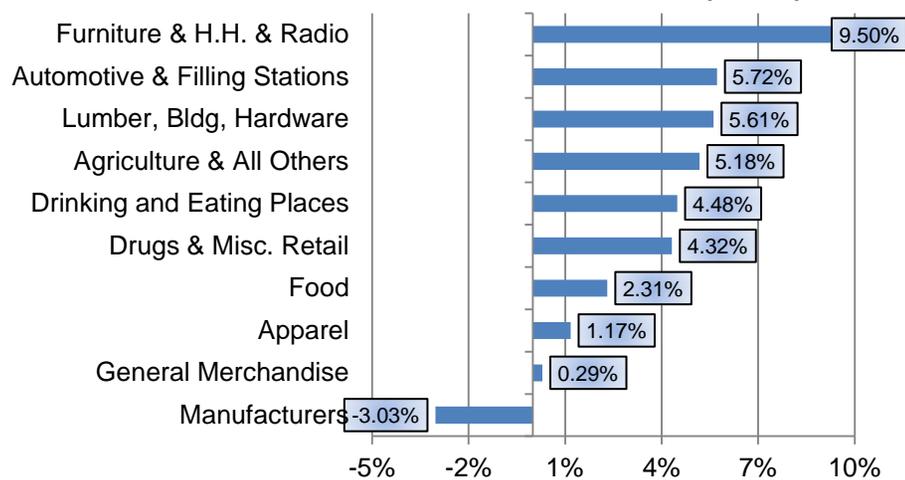
State of Illinois Growth in Retail Sales (09-15)



Source: Illinois Department of Revenue

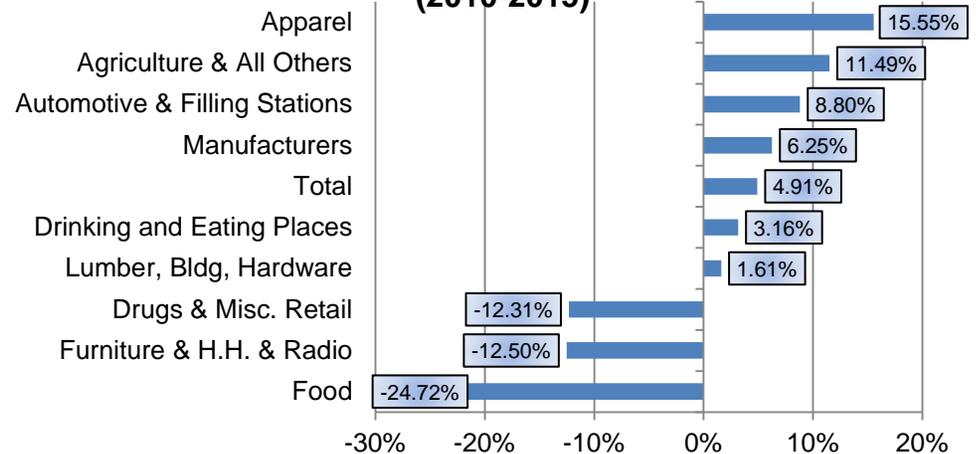
- Three of nine industries in Hawthorn Woods have seen an average annual decrease in retail sales since 2009.
- Despite a decrease in manufacturing sales in the 5-Mile Radius, manufacturing sales in Hawthorn Woods have increased by 6.3%. As manufacturers will record retail as well as wholesale transactions, growth points to improvement in local manufacturing.

5-Mile Radius Growth in Retail Sales (09-15)



Source: Illinois Department of Revenue

Hawthorn Woods Growth in Retail Sales (2010-2015)



Source: Illinois Department of Revenue

5-Mile Radius Retail Sales, Inventory, and Occupancy



Source: CoStar, Illinois Dept. of Revenue

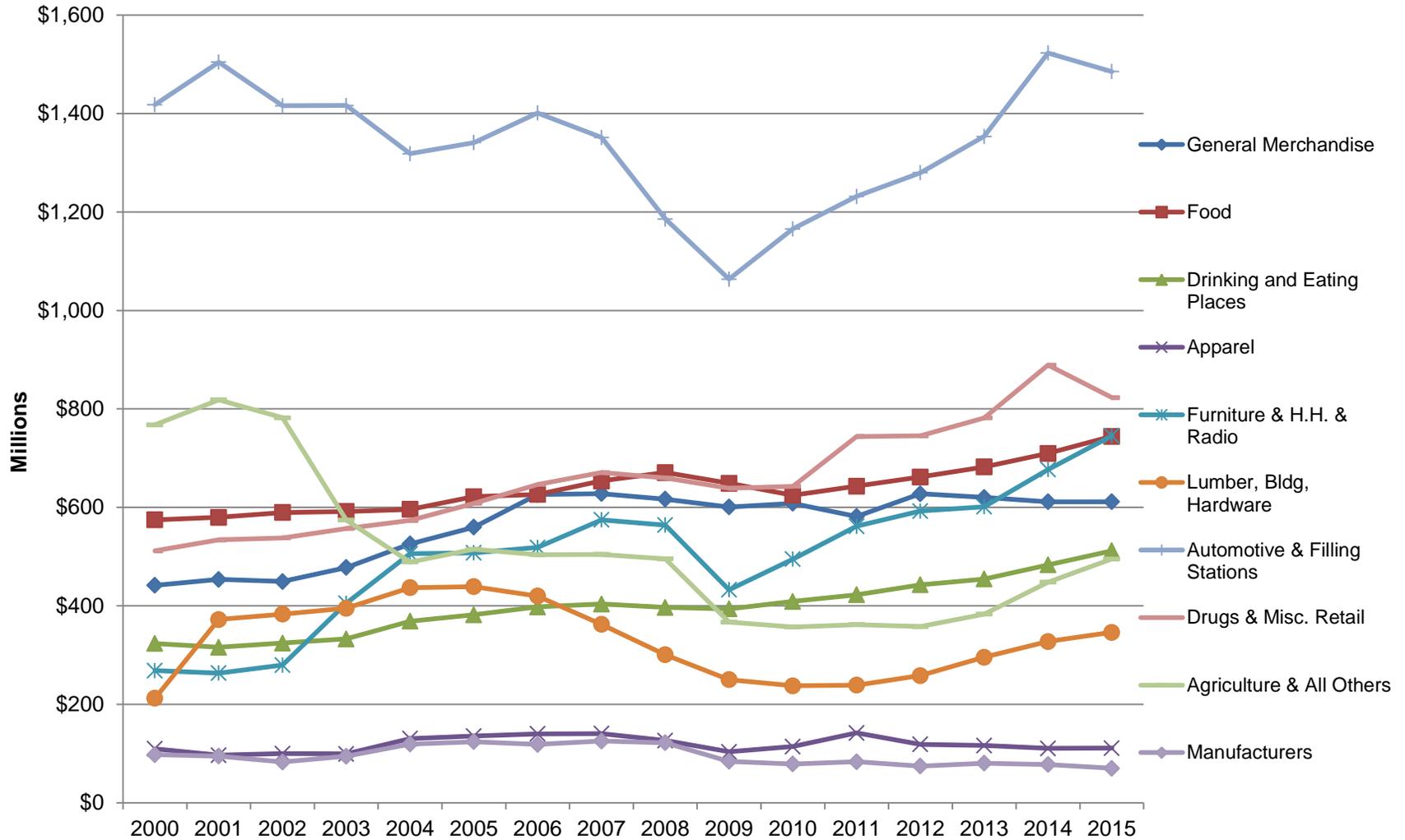
- Retail space has consistently increased in the 5-Mile Radius at an average annual rate of 0.4% since 2006. Retail occupancy has gradually decreased at an average annual rate of -0.2%.
- More retail square footage continues to be built in the 5-Mile Radius (despite lower occupancy) as total retail sales continue to rise at an average annual rate of 1.1%.
- There is approximately 81 retail square feet per person within the 5-Mile Radius, roughly 30 feet more than local and national averages.
- The higher inventory per capita found in the 5-Mile radius reinforces the trend of overbuilt retail inventory surrounding Hawthorn Woods compared to local and national averages.

Retail Inventory Per Capita (2015)

Market Area	Retail Inventory Per Capita
5-Mile Radius	81
Lake County	56
Chicago MSA	57
Illinois	53
US	52

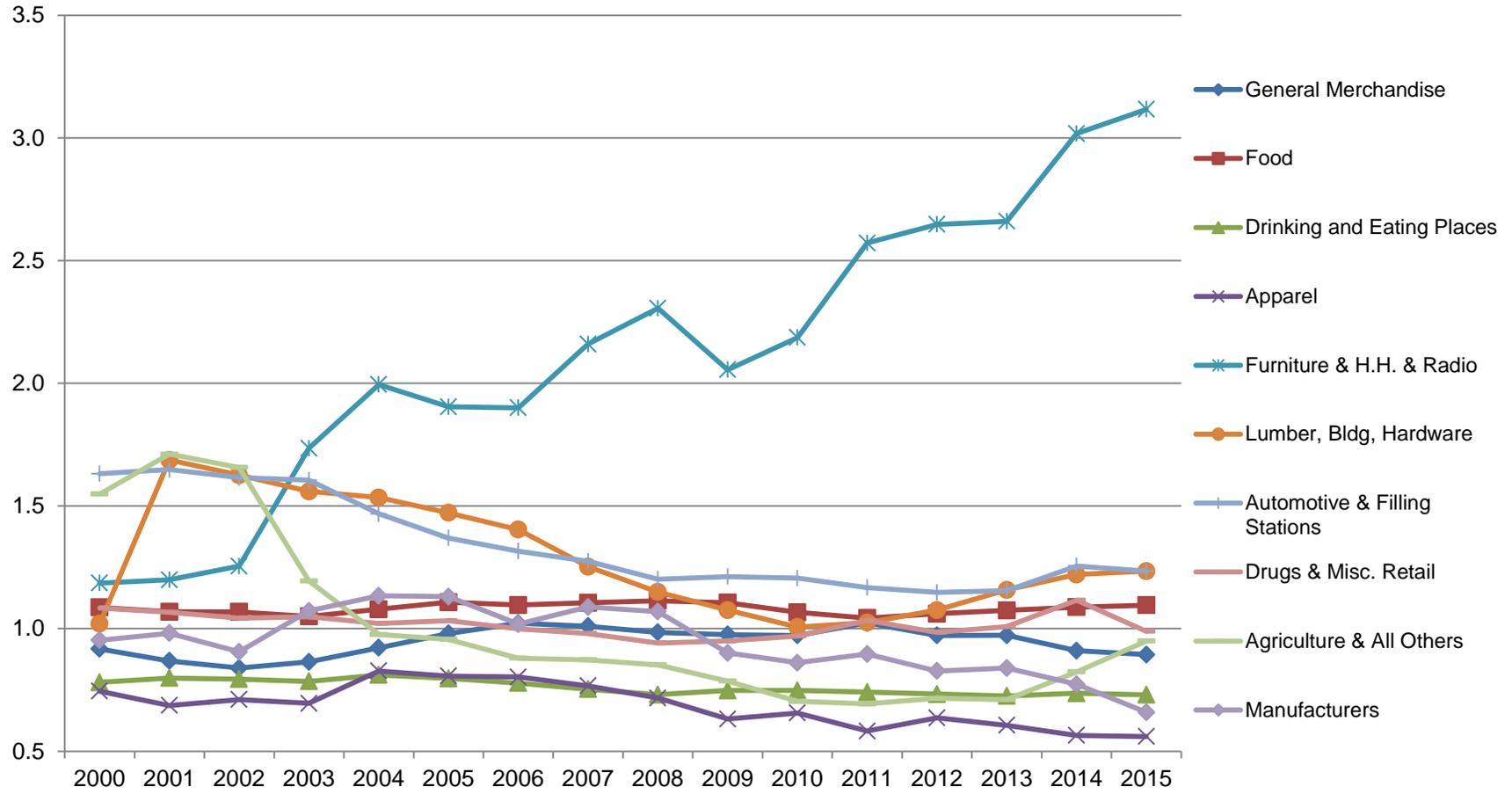
Source: US Census, CoStar

Figure 53 - 5-Mile Radius Retail Sales



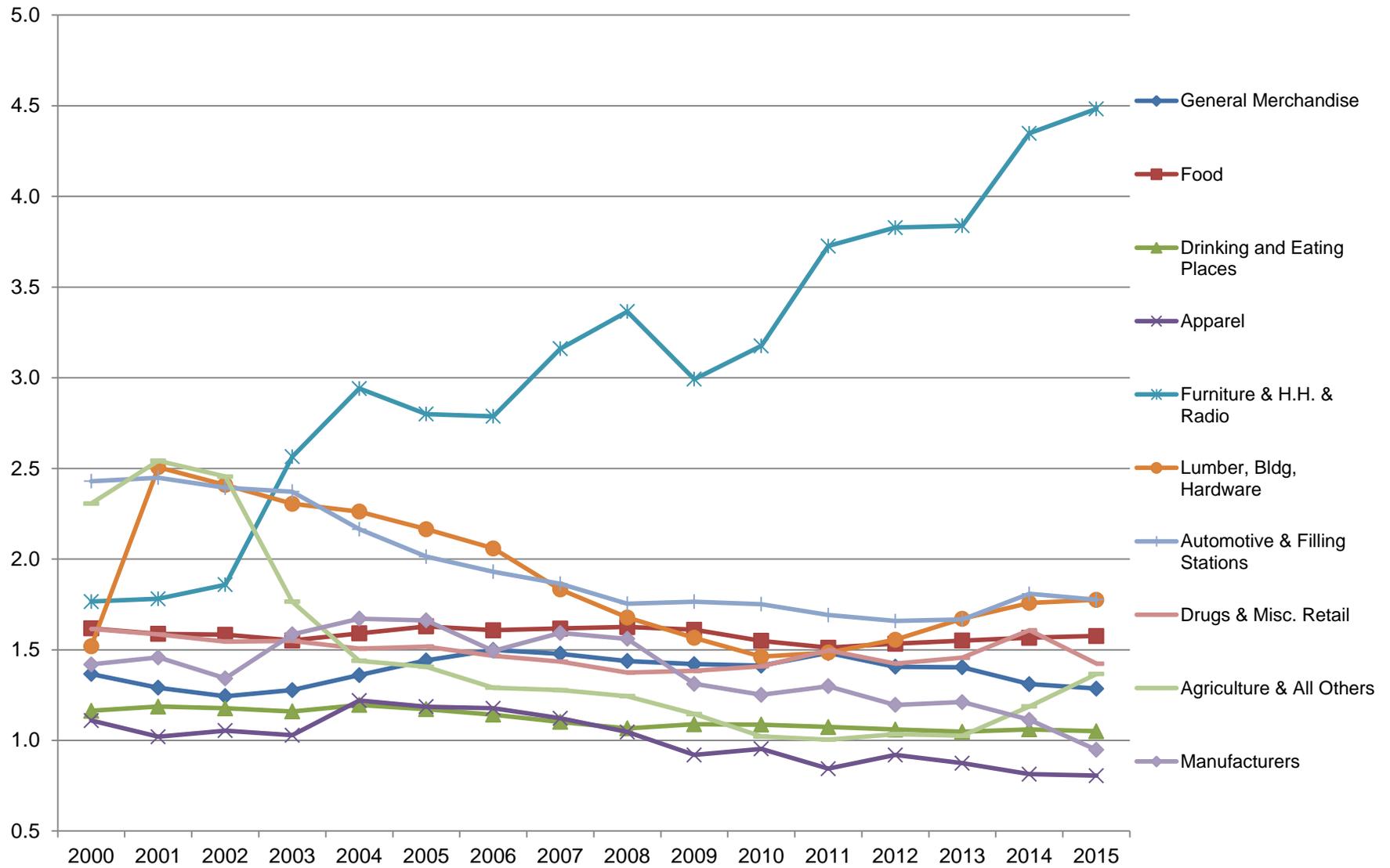
Source: Illinois Department of Revenue

Figure 54 - 5-Mile Radius Income Adjusted Pull Factors



Source: Illinois Department of Revenue, US Census

Figure 55 - 5-Mile Radius Not-Income Adjusted Pull Factors



Source: Illinois Department of Revenue, US Census

Adjacent Municipality Analysis

Figure 56 - Total Retail Sales by Adjacent Municipality

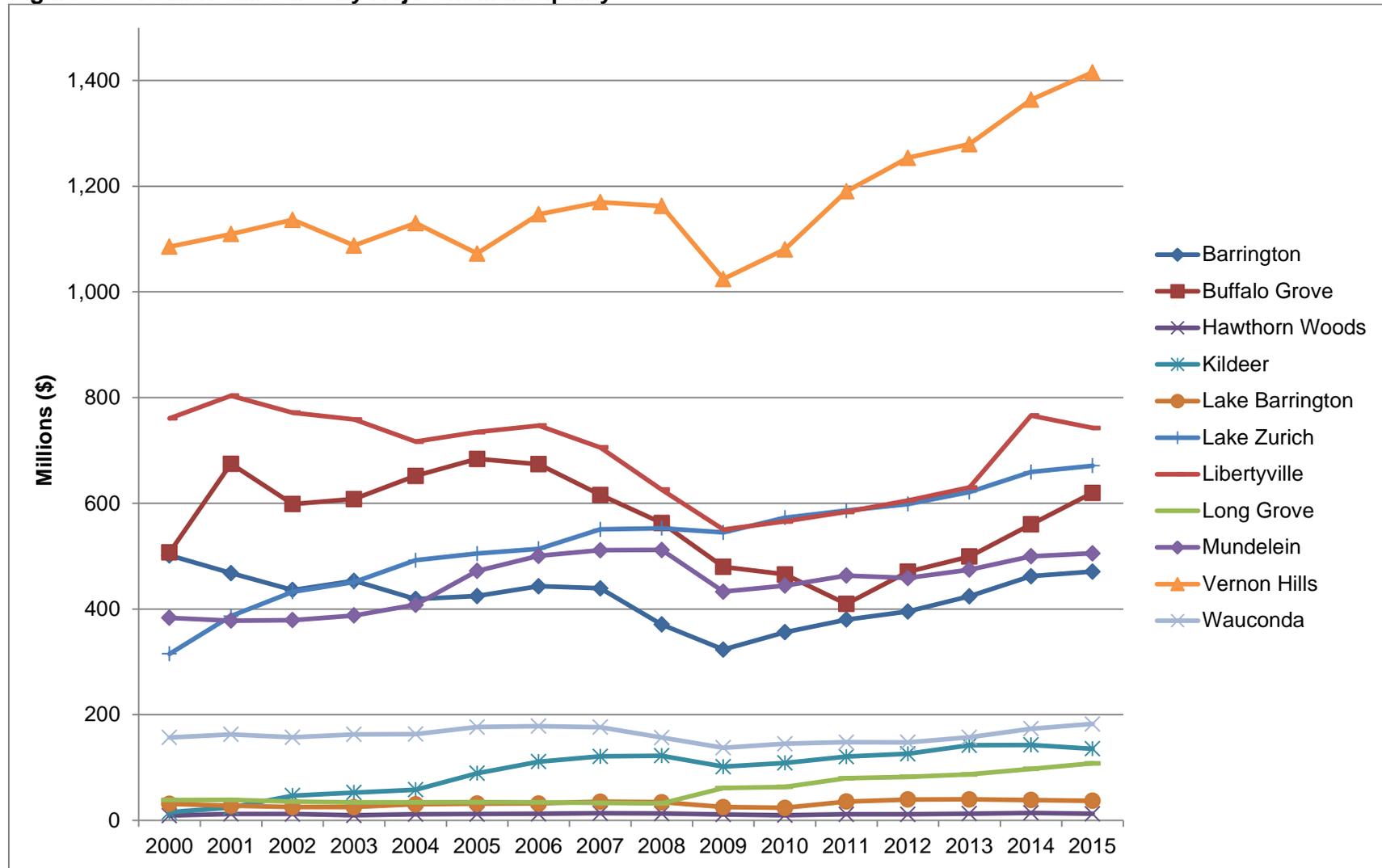


Figure 57 - Adjacent Municipality Retail Pull Factors

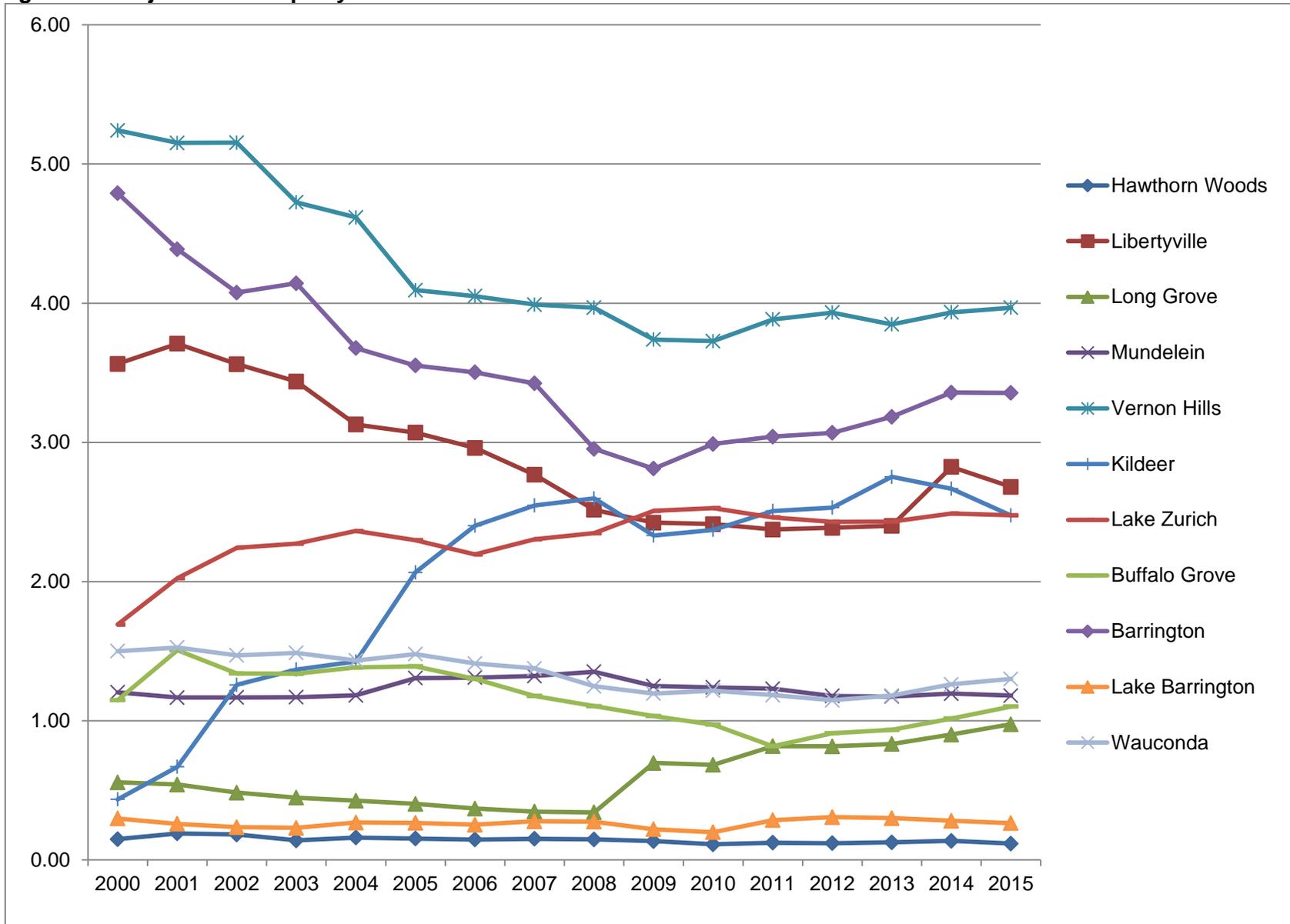
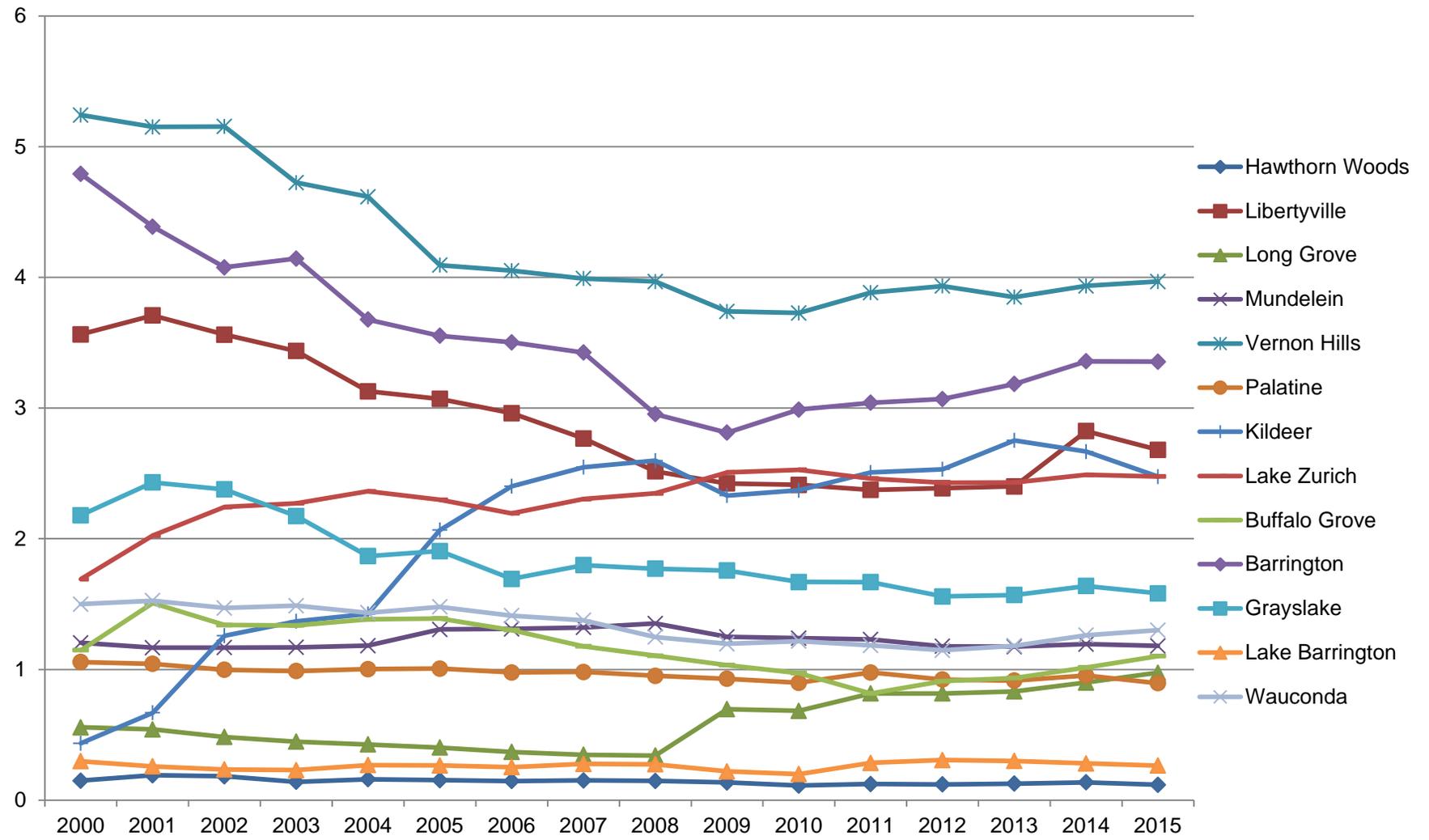


Figure 58 - Adjacent Municipality Non-Income Adjusted Retail Pull Factors



Source: Illinois Department of Revenue, US Census

5-Mile Radius Pull Factor Implications

- Furniture store types have rapidly increased retail sales, growing at an average annual rate of 7% since 2000. After adjusting for local and state incomes, furniture store sales were approximately 3 times more concentrated than Illinois averages in 2015. Aside from furniture store sales, all other store types have lacked growth in pull factor levels, which is an indication that these store types may be leaking sales to adjacent markets.

5-Mile Radius Non-Income Adjusted Pull Factor Implications

- Without controlling for local and state incomes, all store types with the exception of apparel have remained above one. The implication being that without taking the higher incomes within the 5-Mile Radius into consideration, all store types appear to be outperforming and importing sales from other markets.

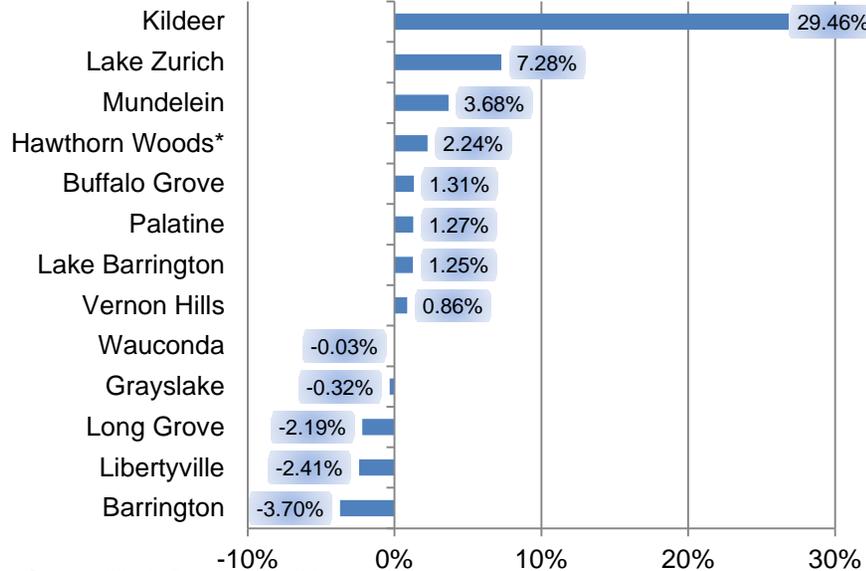
Municipal Retail Sales Implications

- Despite having the lowest retail sales, Hawthorn Woods has increased retail sales at an average annual rate of 2.1% since 2000, while some adjacent municipalities such as Libertyville, Barrington, and Grayslake have experienced a decrease in retail sales over the same time period. Vernon Hills has nearly double the amount of total retail sales than the next highest municipalities, Palatine and Libertyville due primarily to the high concentration of shopping centers and malls located in Vernon Hills.

Municipal Retail Sales Pull Factor Implications

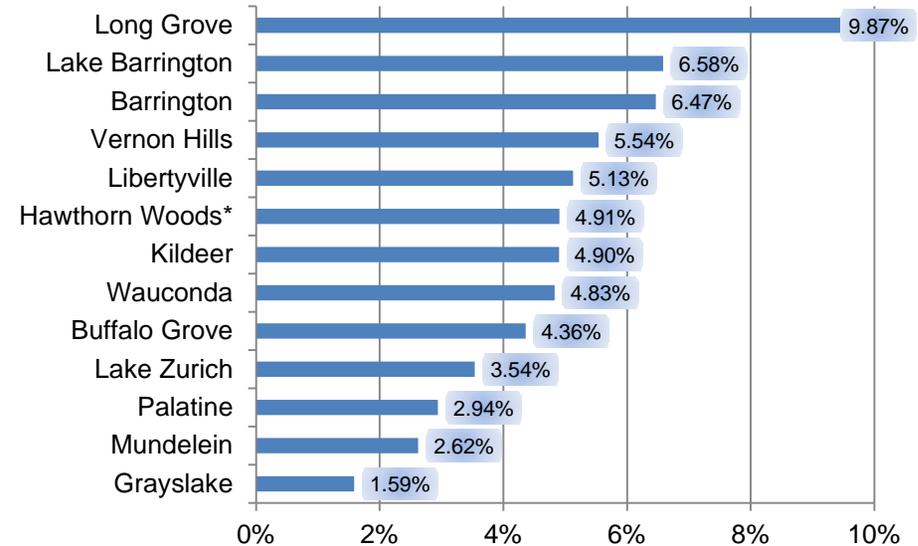
- After adjusting for statewide income, population, and sales, many adjacent municipalities face a downward or stagnant trend (as opposed to upward trend in actual retail sales) due to the higher incomes found in adjacent municipalities. Certain areas such as Lake Zurich and Kildeer have seen substantial increases in pull factor levels since 2000. For example, in 2000, Kildeer was among the lowest municipalities with an approximate pull factor of 0.25. In 2015, Kildeer had the fifth highest pull factor at 1.25. Over the fifteen year period Kildeer went from potentially losing sales to importing sales from other municipalities.
- All but four municipalities remain above a pull factor level of 1.0 despite an overall downward trajectory for municipalities with the highest pull factor values such as Vernon Hills, Barrington, and Libertyville. The increase in the number of municipalities above a pull factor of 1.0 speaks to the combination of high income levels and expansive retail offerings in communities surrounding Hawthorn Woods.

Total Retail Sales 2000-2008 CAGR



Source: Illinois Department of Revenue
*Final year for pre-recession sales is 2009

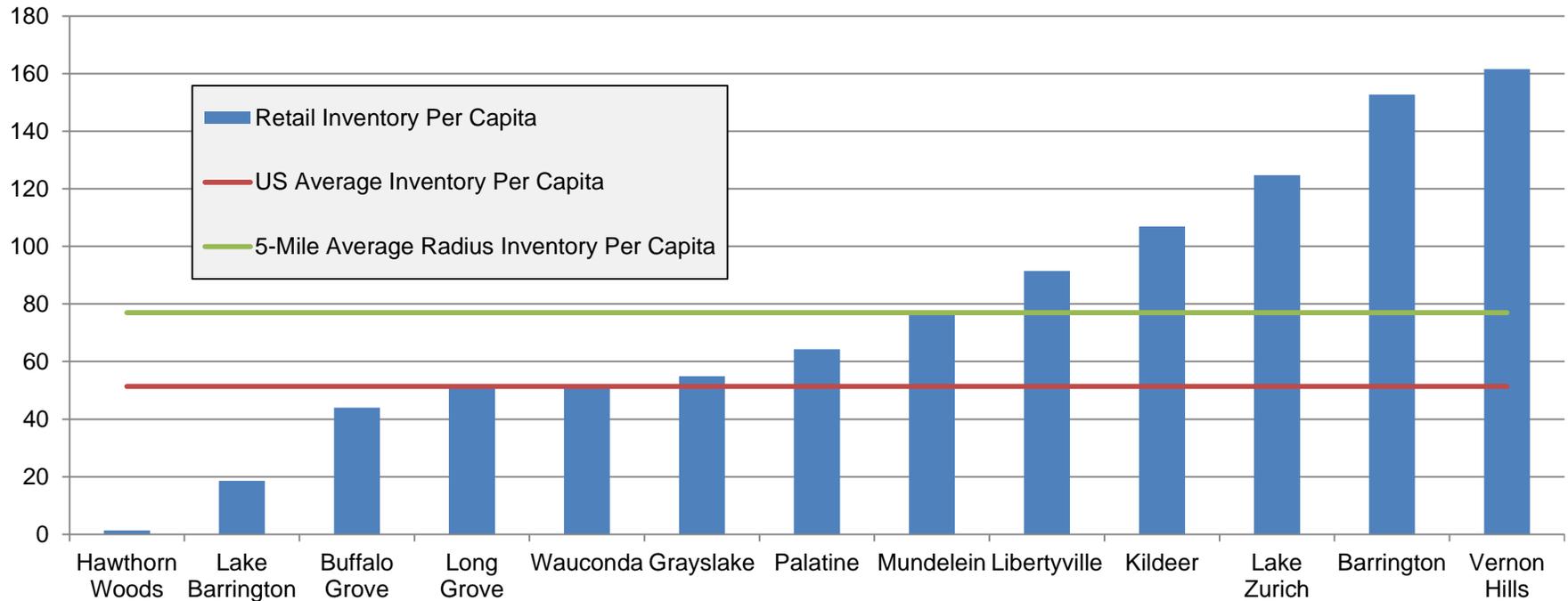
Total Retail Sales 2009-2015 CAGR



Source: Illinois Department of Revenue
*Base year for post-recession sales is 2010

- Prior to the Recession, Hawthorn Woods ranked fourth in retail sales growth compared to adjacent municipalities, growing at an average annual rate of 2.2%. Since 2010, Hawthorn Woods ranks sixth in total retail sales growth, growing at an annualized rate of 4.9%.
- While Hawthorn Woods has increased average annual growth in retail sales since the Recession, the surrounding municipalities have grown at a significantly faster rate.
- The Recession affected Hawthorn Woods one year later (2010) than adjacent municipalities, thus the base year for post-Recession sales growth in Hawthorn Woods is 2010 and the final year for pre-Recession sales is 2009.

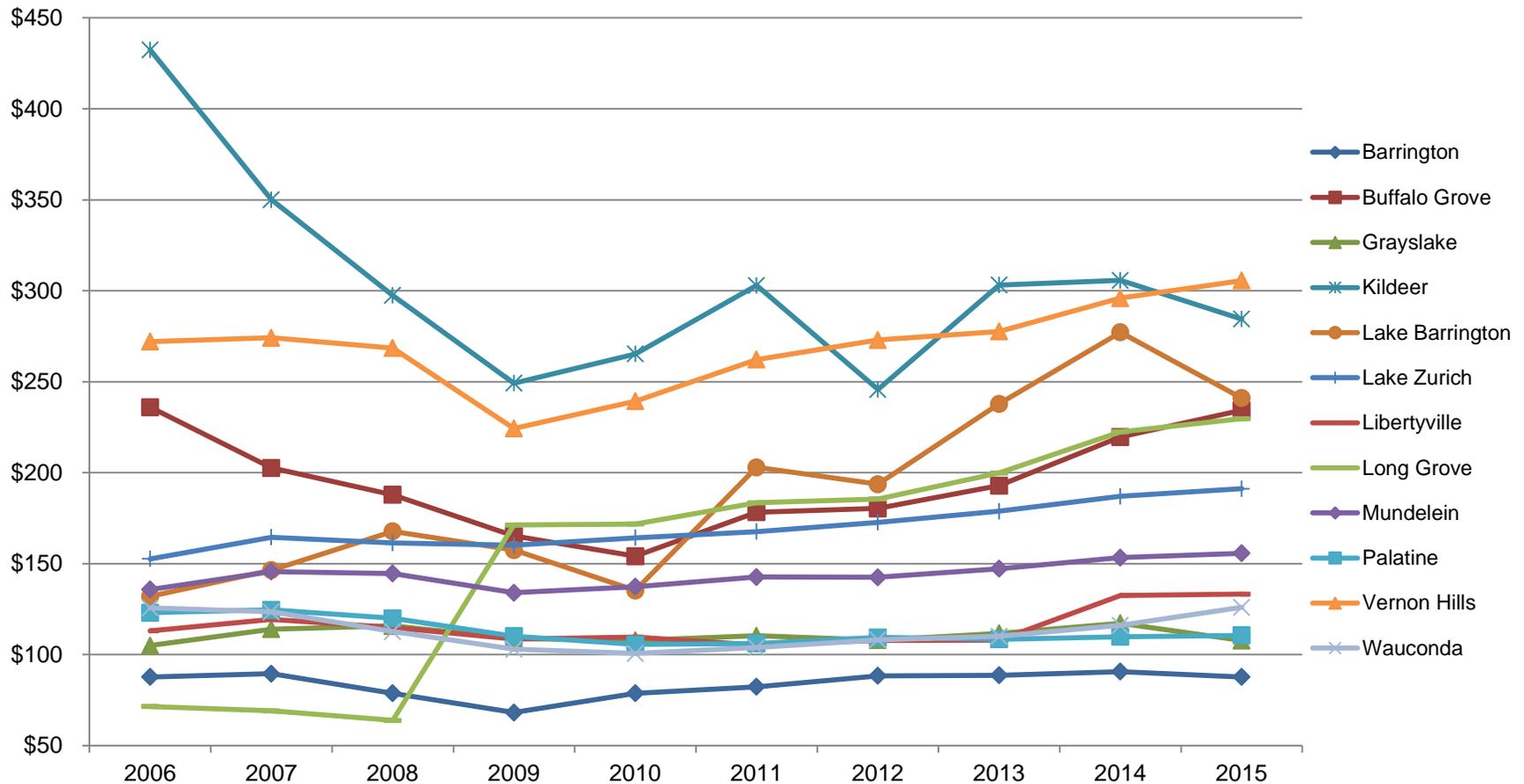
Figure 59 - Retail Inventory Per Capita



Source: CoStar, US Census

- Retail inventory per capita is significantly lower in Hawthorn Woods than neighboring communities, due primarily to the lack of retail space in the village.
- At the national level, retail space per capita is approximately 52 square feet per person compared to approximately 77 square feet per person in the 5-Mile Radius.
- Top retail destinations surrounding Hawthorn Woods such as Barrington and Vernon Hills have approximately 80 and 100 more square feet per person than 5-Mile and US averages.

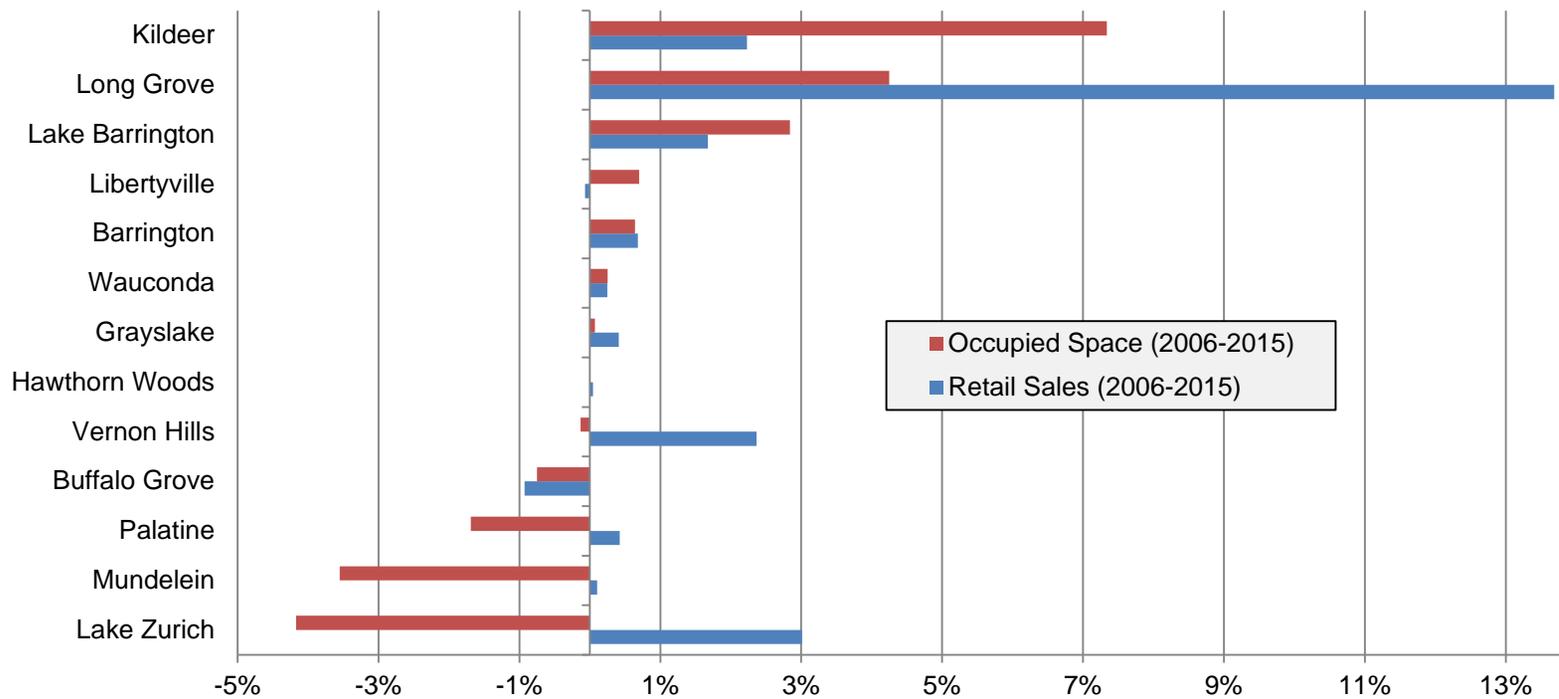
Figure 60 - Retail Sales Per Sq. Ft (w/o agriculture, automotive, and manufacturing)



Source: Illinois Department of Revenue, CoStar

- Retail sales per square foot in all adjacent municipalities have either grown or remained stagnant since 2006, with the exception of Kildeer which has experienced a significant decrease in retail sales per square foot. However during the same time, no other municipality added retail space at a faster rate than Kildeer (6.6% CAGR).
- Long Grove has tripled retail sales per square foot since 2006 and Lake Barrington has doubled, while Hawthorn Woods remains virtually unchanged. This trend is reinforced in the following chart.

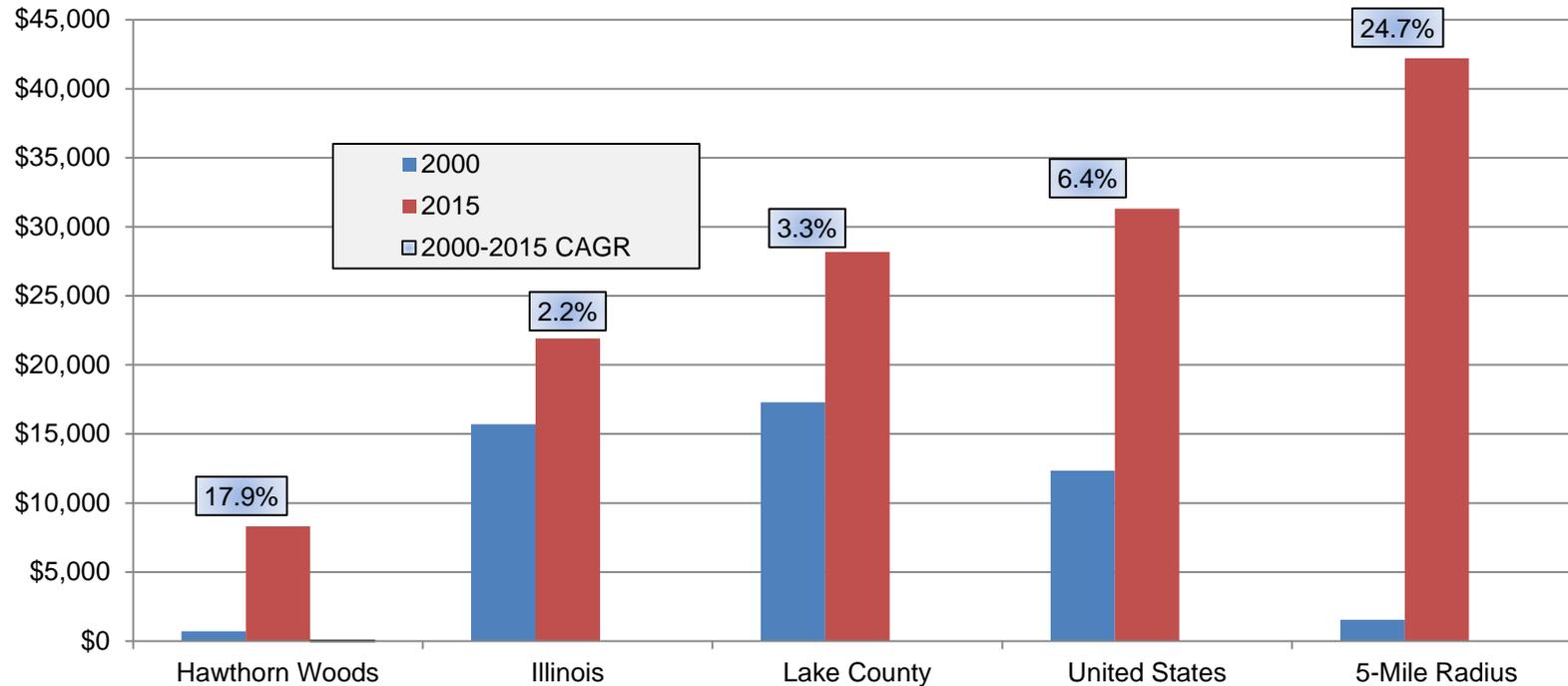
Figure 61 - Average Annual Growth in Retail Sales and Occupied Space (2006-2015)



Source: Illinois Department of Revenue, CoStar

- Since 2006, Hawthorn Woods has seen little to no growth in retail sales and occupied space, whereas communities like Kildeer and Long Grove have experienced significant growth in sales and occupancy.
- While some municipalities have decreased occupancy since 2006, they have not always seen a corresponding decrease in sales. The implication being that occupied retail space does not always drive sales within the 5-Mile Radius.

Figure 62 - Bank Deposits Per Capita



Source: US Census, FDIC

- Given the size of Hawthorn Woods, there is a possibility that a majority of its citizens do their banking in neighboring communities. As a result, the bank deposits per capita are considerably lower than state, national, and in particular, the 5-Mile Radius.
- In 2000, bank deposits per capita in Hawthorn Woods (\$706) and the 5-Mile Radius (\$1,533) were fairly consistent. Since that time, the 5-Mile Radius surrounding Hawthorn Woods has grown by 25% annually, compared to 18% in Hawthorn Woods.
- Although, the number of bank deposits per capita has increased at a faster rate in Hawthorn Woods than in Lake County, bank deposits per capita remain three times higher at the county level, implying that Hawthorn Woods is potentially underserved in terms of banking locations.

Residential Market Analysis



Introduction

This section evaluates residential market potentials for Hawthorn Woods by analyzing recent residential construction activity with information on home sales activity, pricing, construction costs, and density factors. The housing analysis provides an overview of residential information within Hawthorn Woods, the 5-Mile Radius, and Lake County. Key indicators such as price per square foot, year built, listing price, and number of rooms will provide a sense of the housing market in and around Hawthorn Woods. For clarification purposes, detached homes are considered stand-alone homes, while attached homes are considered condos and townhouses.

Analysis Process

Real estate, economic, and demographic data in this section was gathered from multiple sources including:

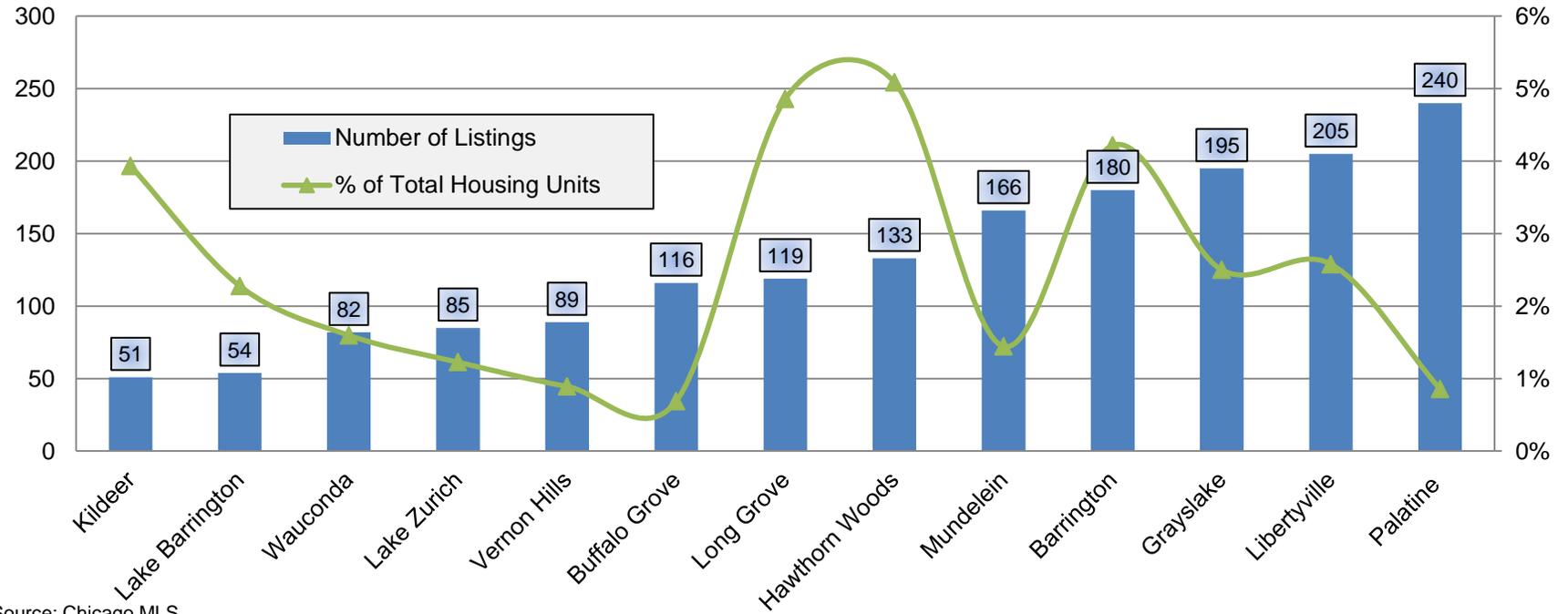
- U.S. Department of Housing and Urban Development
- CoStar
- Chicago Multiple Listings Service
- US Census

Key Implications

- Approximately 5% of all detached homes in Hawthorn Woods were listed for sale, the highest percentage share of all adjacent municipalities as of fall 2016. The average number of attached home listings per municipality within the 5-Mile Radius is 45. Hawthorn Woods is currently well below average with 8 attached home listings.
- In 2015, Hawthorn Woods emerged as the municipality with the highest number of housing permits within the 5-Mile Radius,
- According to US Census data, 76% of all homes in Hawthorn Woods have eight or more rooms, pointing to limited development of smaller inventory such as condos and townhouses.
- Among adjacent municipalities, the average build year for attached homes is 1995, compared to 2011 in Hawthorn Woods, while the average build year for detached homes is 1986, compared to 1998 in Hawthorn Woods.
- According to the Federal Housing Finance Agency's housing price index (HPI), the price of homes in Hawthorn Woods (HPI=439) is significantly higher than the Chicago Metro Area (HPI=166) and Illinois (HPI=321).
- While overall listing prices for detached homes are typically higher in Hawthorn Woods, they are not as valuable on a price per square foot basis (\$161/SF) compared to other communities such as Barrington (\$207/SF) and Libertyville (\$196/SF).

Housing Trends

Figure 63 - Detached Home Listings

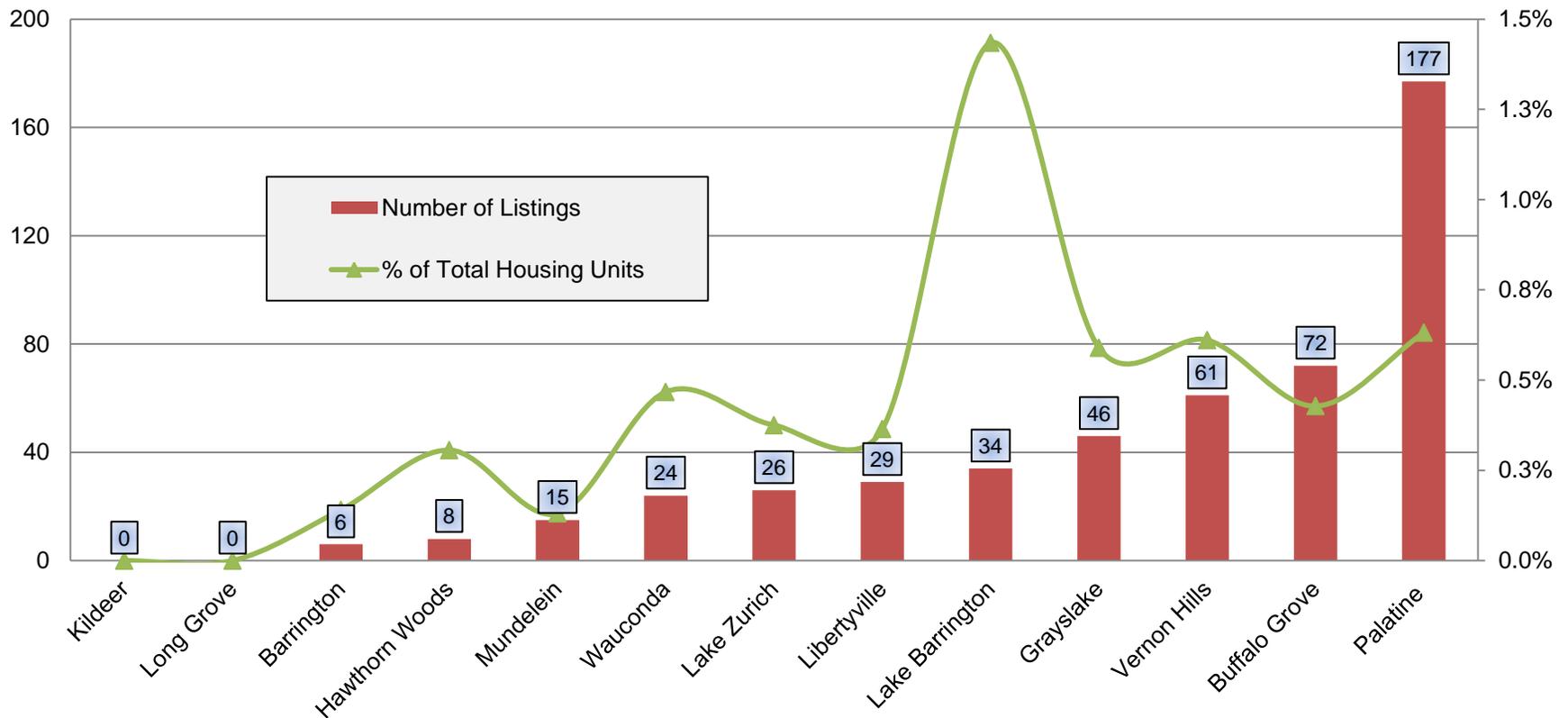


Source: Chicago MLS

Current Home Listings

- The average number of detached home listings per municipality within the 5-Mile Radius is 132. Hawthorn Woods currently has 133 listings, consistent with the average yet lower than nearby areas such as Barrington and Libertyville.
- Approximately 5% of all detached homes in Hawthorn Woods are currently listed for sale, the highest percentage share of all housing units in adjacent municipalities.

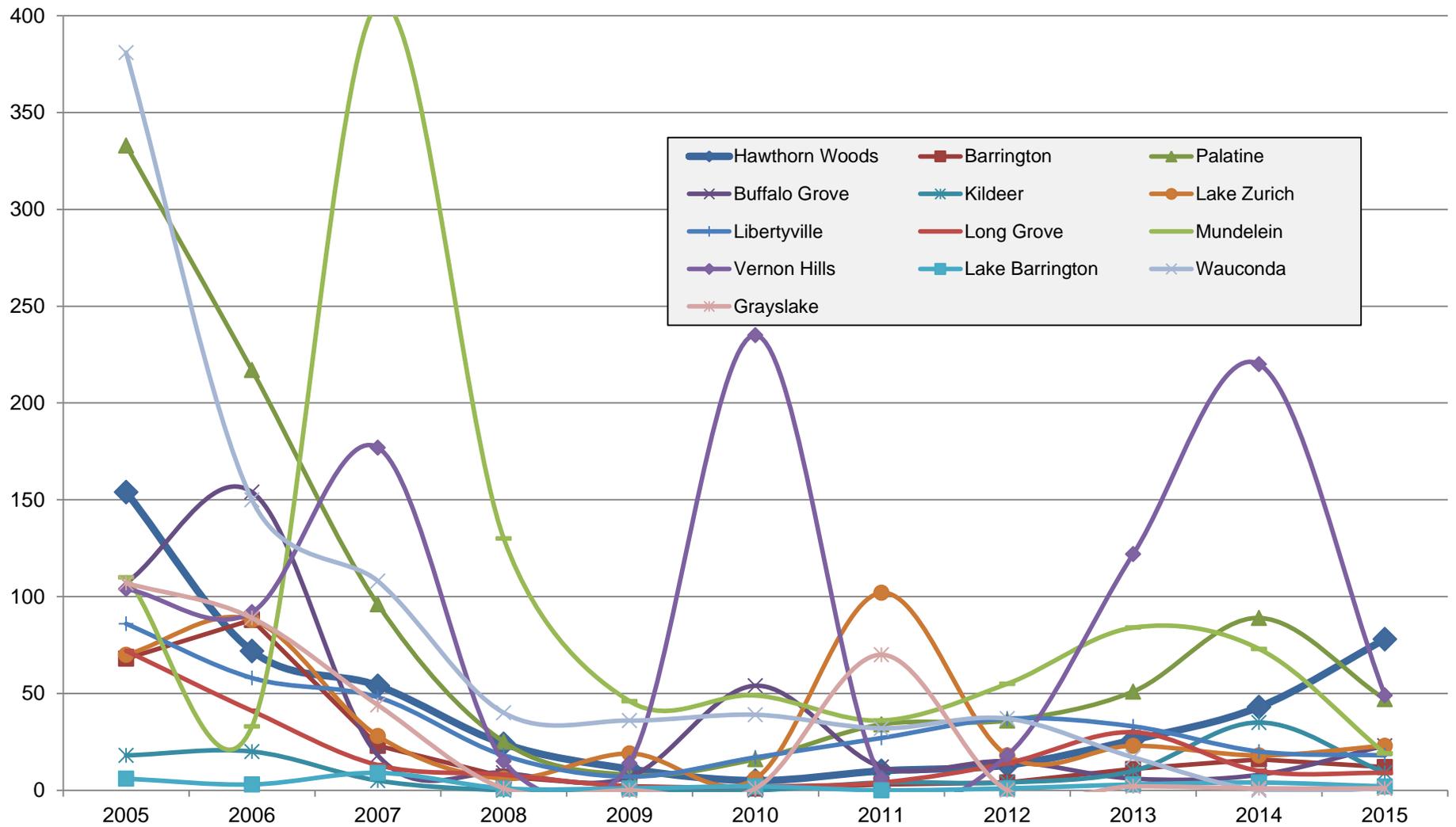
Figure 64 - Attached Home Listings



Source: Chicago MLS

- The average number of attached home listings per municipality within the 5-Mile Radius is 45. Hawthorn Woods is currently well below average with 8 attached home listings.

Figure 65 - Housing Permits by Municipality

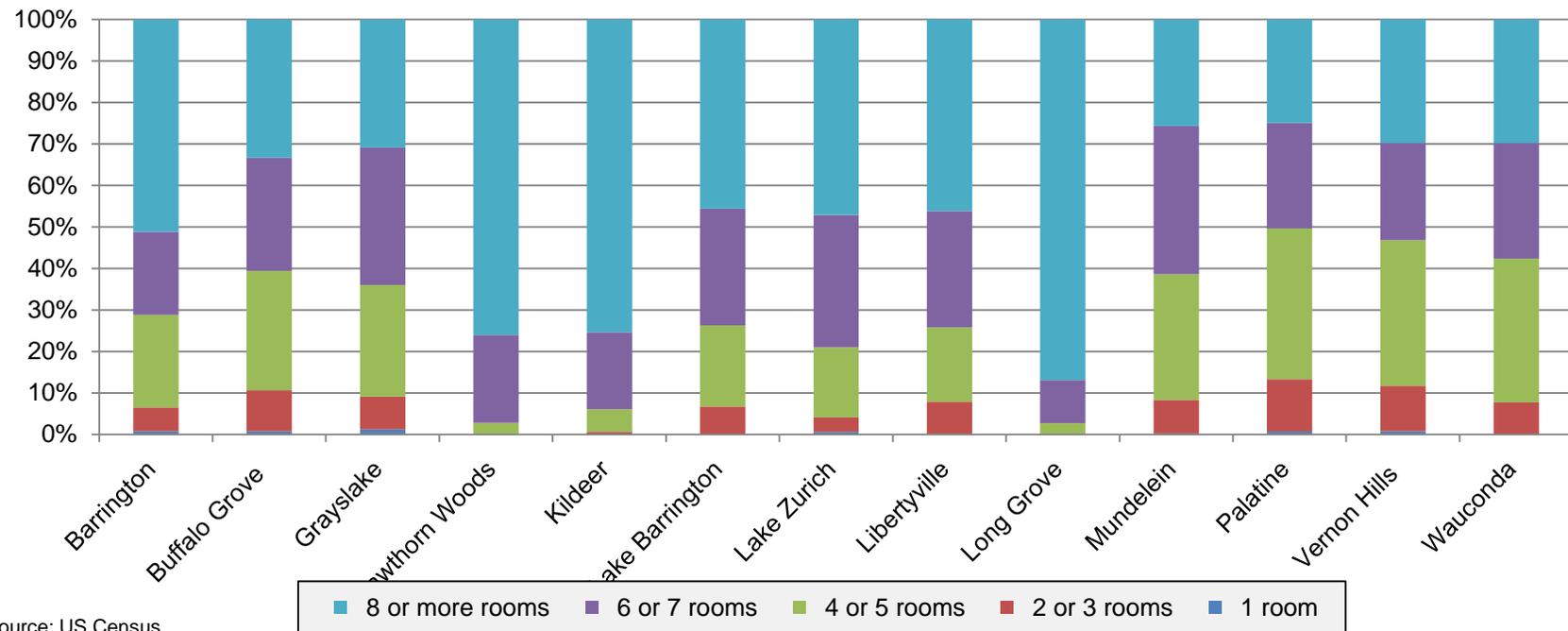


Source: SOCDs, Village of Hawthorn Woods

- As with most housing markets, all municipalities within the 5-Mile Radius saw a decrease in the total number of housing permits due to the financial crisis in 2008.
- Despite a few years of increased housing permits (ex. Vernon Hills), a majority of municipalities have issued under 50 housing permits annually since 2008.
- In 2015, Hawthorn Woods emerged as the municipality with the highest number of housing permits, signifying a faster recovery from the housing crisis than neighboring communities.

Housing Characteristics

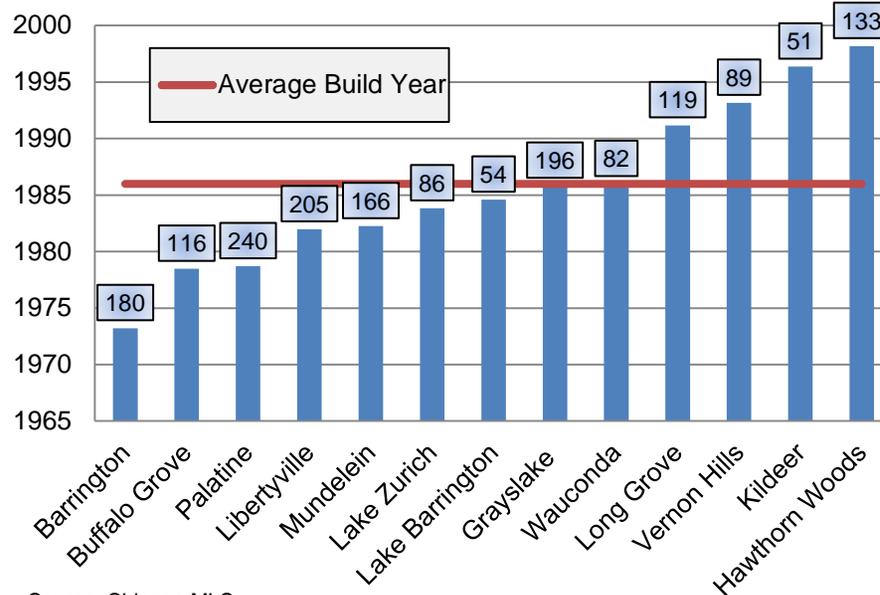
Figure 66 - Total Number of Rooms in Housing Units, 2014



Source: US Census

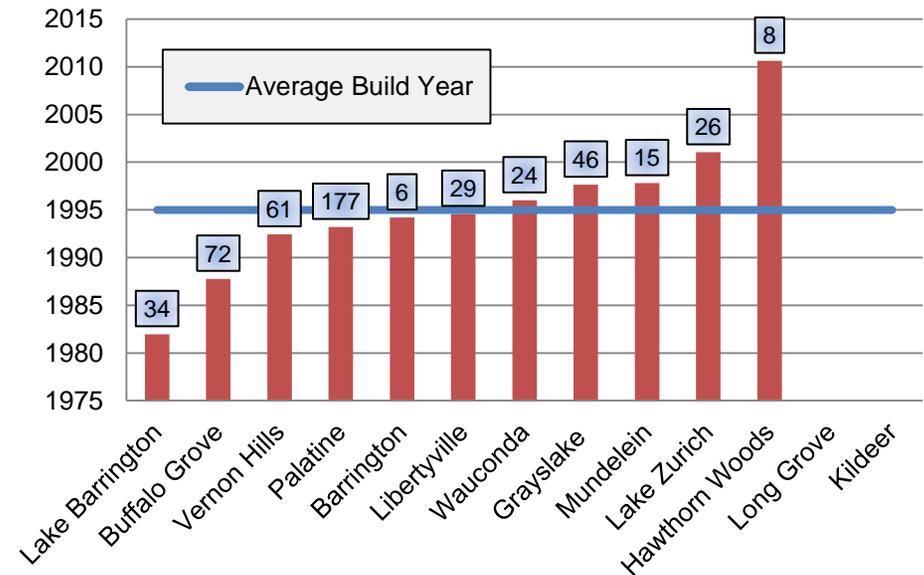
- According to the US Census American Community Survey, there are no homes with under 4 rooms in Hawthorn Woods. In contrast, the village has the second highest concentration (76%) of eight or more rooms per home.
- While the higher concentration of large homes (8+ rooms) in Hawthorn Woods points towards higher prices, it also speaks to the lack in development of smaller inventory such as condos and townhouses.
- The lack of diverse housing options within Hawthorn Woods does raise important questions about the ability of existing residents to affordably “age in place” within the community.

Detached Home Average Build Year



Source: Chicago MLS
*Highlighted numbers = number of listings

Attached Home Average Build Year



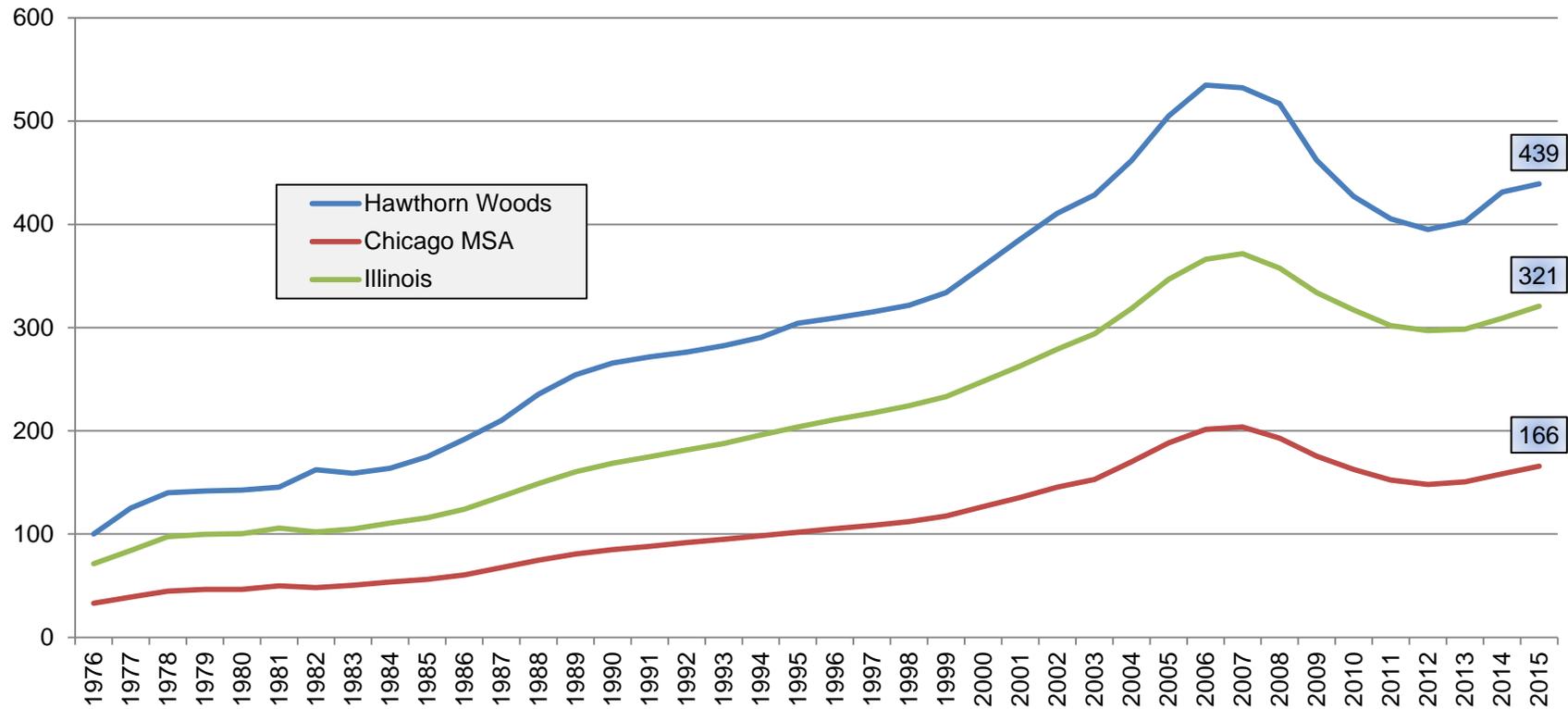
Source: Chicago MLS
*Highlighted numbers = number of listings

According to a Chicago Multiple Listings Service, Hawthorn Woods has the most recent average build year for both detached and attached homes within the 5-Mile Radius.

- Among adjacent municipalities, the average build year for attached homes is 1995, compared to 2011 in Hawthorn Woods. While this difference seems significant, it is important to note that Hawthorn Woods has only eight listings for attached homes.
- Average build year for detached homes within the 5-Mile Radius is 1986, compared to 1998 in Hawthorn Woods.

Home Pricing

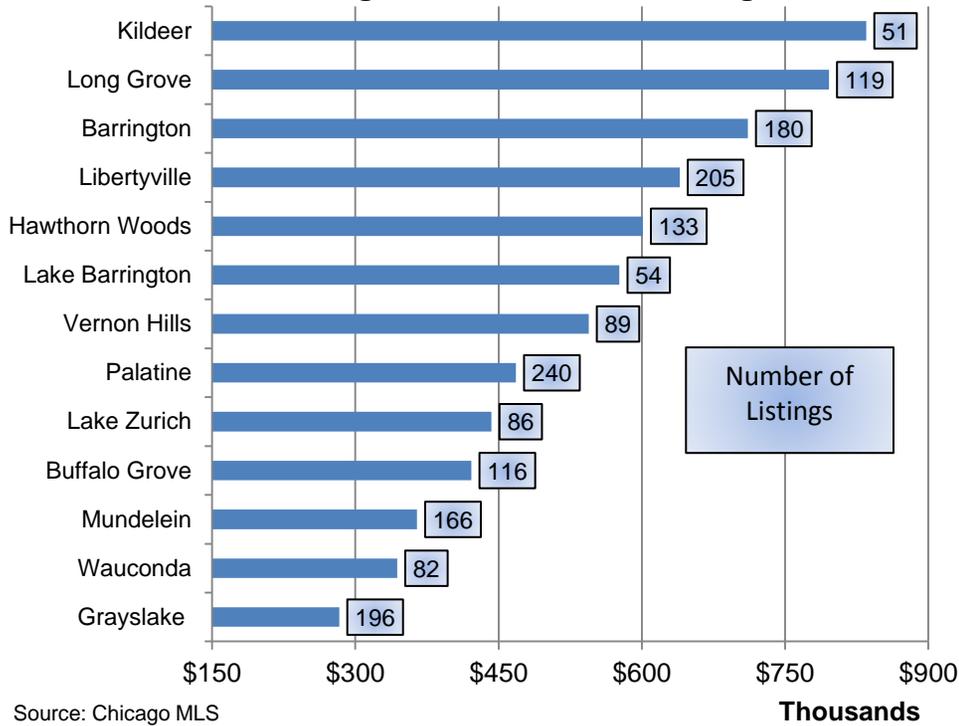
Figure 67 - Housing Price Index (1976-2015)



Source: Federal Housing Finance Agency

- According to the Federal Housing Finance Agency's housing price index (HPI), the price of homes in Hawthorn Woods is significantly higher than the Chicago Metro Area and Illinois.
- The higher priced homes in Hawthorn Woods reinforce the trend of affluent households in and around Hawthorn Woods.

Average Detached Home Listing Price

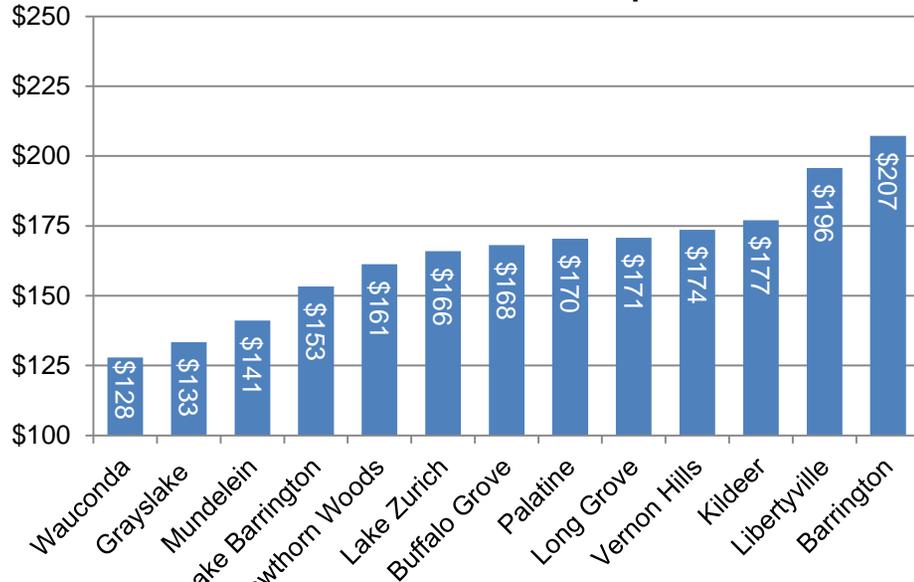


Average Attached Home Listing Price



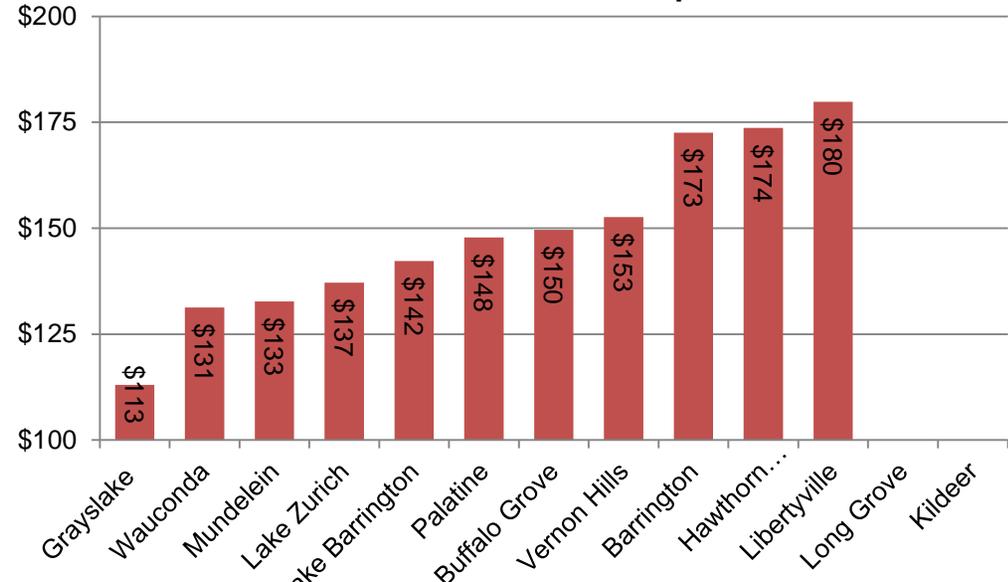
- Hawthorn Woods currently has the highest average price for attached homes and fifth highest average price for detached homes. The average listing price for attached homes in Hawthorn Woods may be skewed due the small number (8) of listings.

Detached Home Price per SF



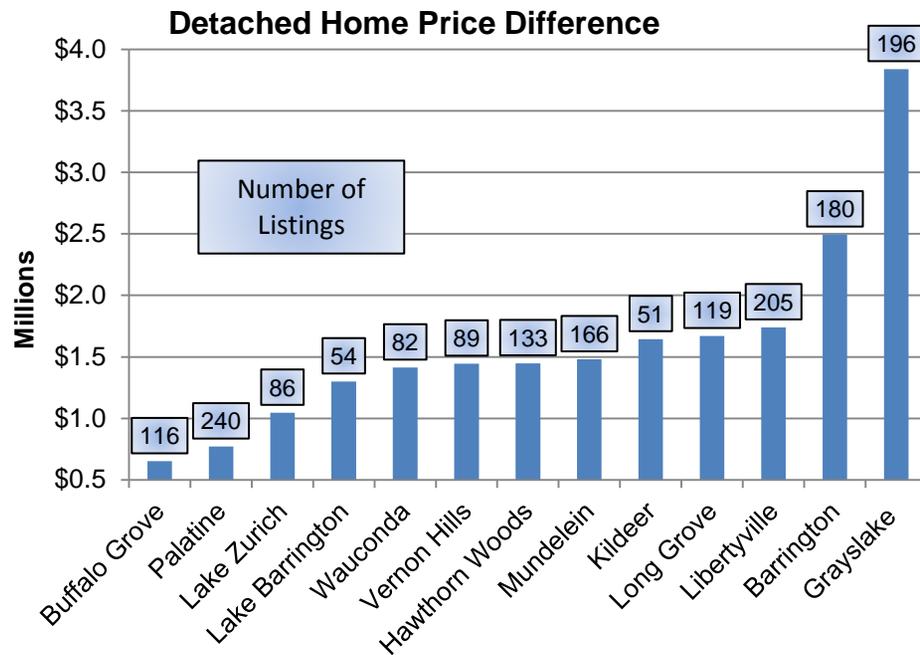
Source: Chicago MLS

Attached Home Price per SF

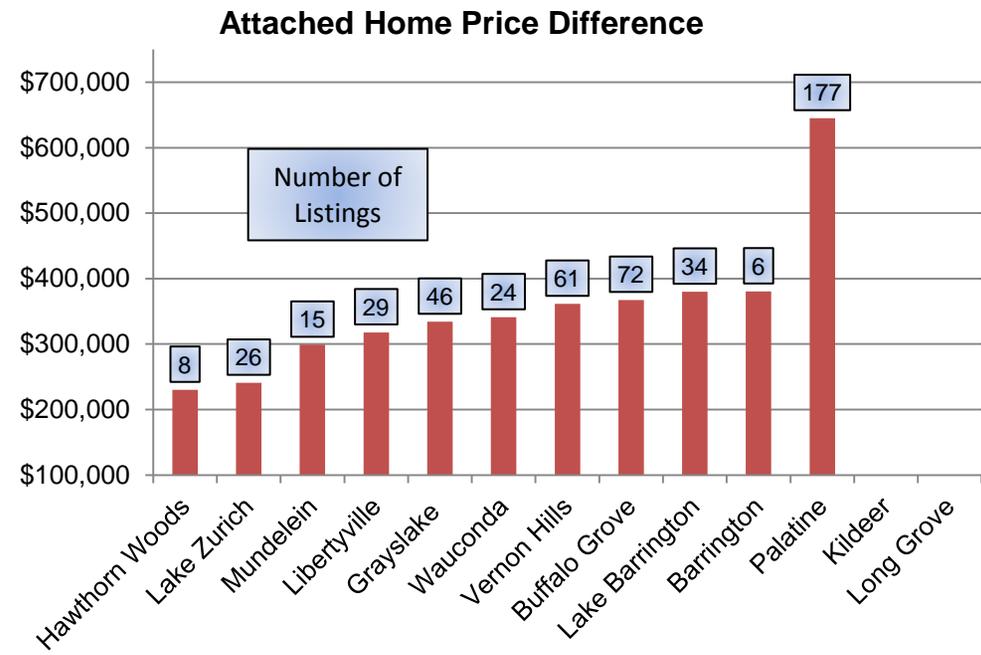


Source: Chicago MLS

- Hawthorn Woods ranks nine of thirteen among adjacent municipalities in terms of listing price per square foot for detached homes.
- While overall listing prices for detached homes are typically higher in Hawthorn Woods, they are not as valuable on a price per square foot basis (\$161/SF) compared to other communities such as Barrington (\$207/SF) and Libertyville (\$196/SF).
- Hawthorn Woods is one of two municipalities where attached homes have a higher price per square foot than detached homes. This again may be skewed due to the smaller number of listings for attached homes in Hawthorn Woods.



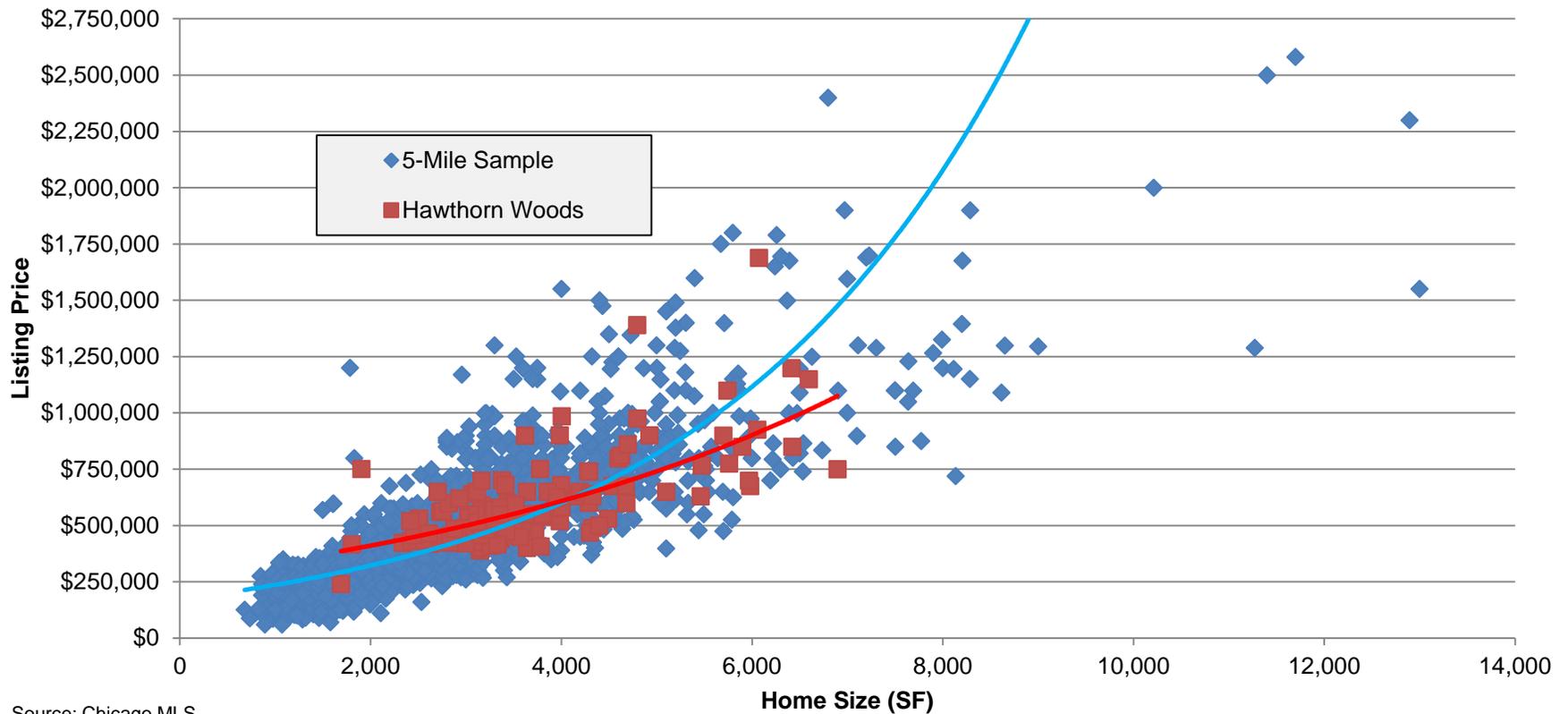
Source: Chicago MLS



Source: Chicago MLS

- The charts above highlight the difference between the highest and lowest priced homes for each municipality.
- The difference between the highest and lowest priced detached home in Hawthorn Woods is approximately \$1.5 million, representing the median of the thirteen municipalities.

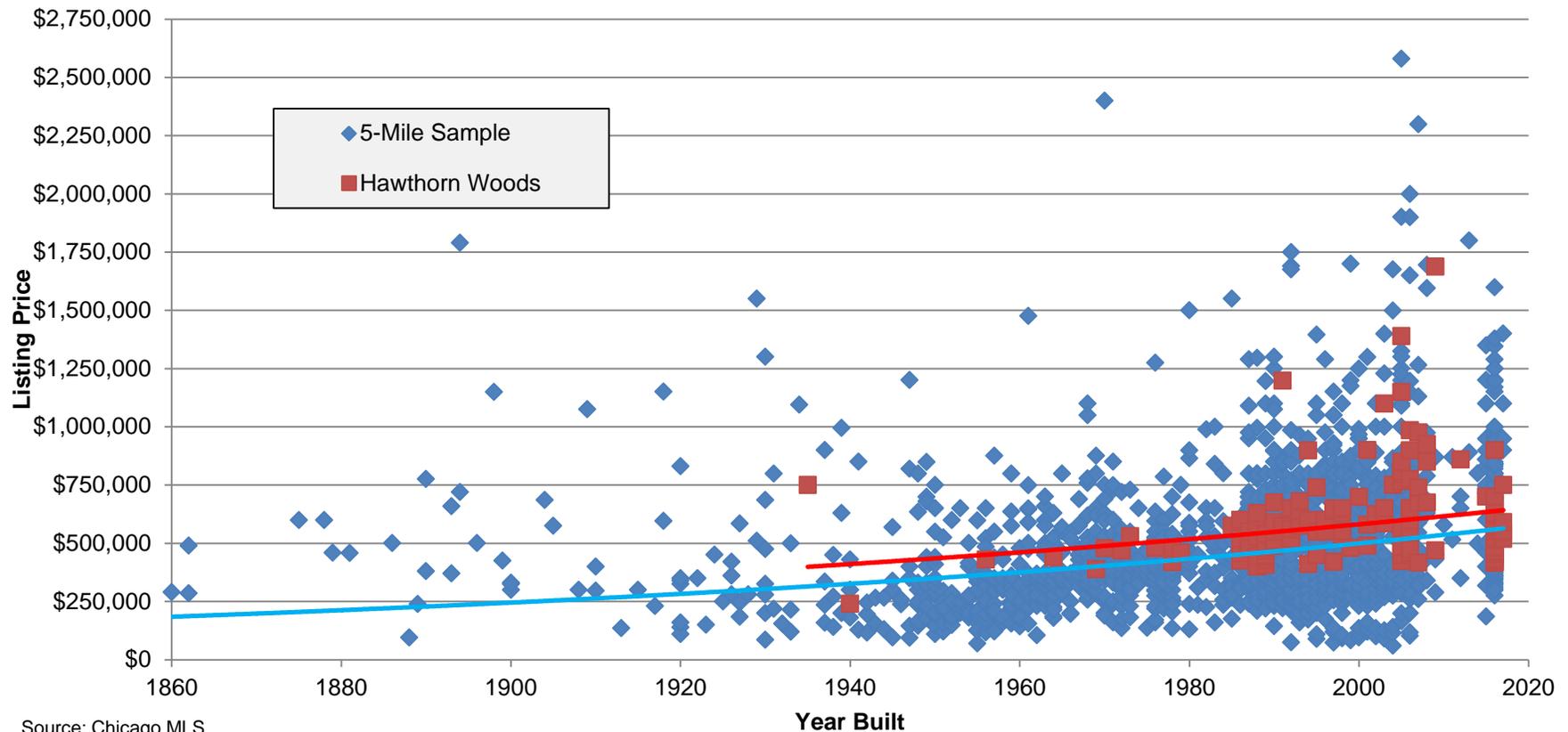
Figure 68 - Detached Home Size and Listing Price



Source: Chicago MLS

- A large concentration of detached homes in Hawthorn Woods are within the \$400,000 to \$1 million range, while a majority of detached homes within the 5-Mile Radius fall within the \$100,000 to \$500,000 range.
- There is a positive correlation between home sizes and listing price, as square footage increases, there is a corresponding increase in listing price, indicating that there is a premium for larger homes in Hawthorn Woods and the 5-Mile Radius.

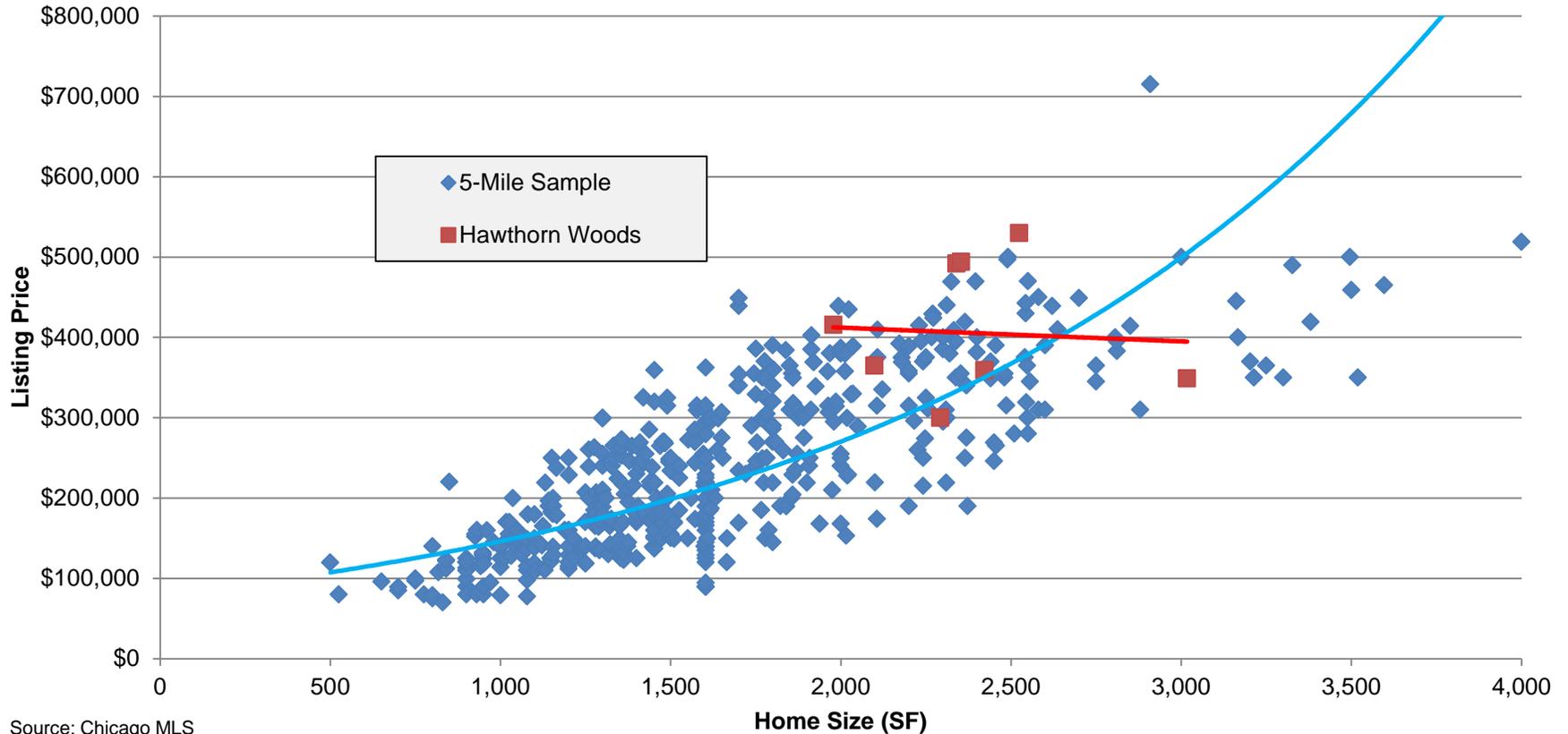
Figure 69 - Detached Home Year Built and Listing Price



Source: Chicago MLS

- While there are a few inexpensive homes that were built in recent years, there is a clear trend of increasing listing prices with recently built homes.
- Detached homes built since 2005 within the 5-Mile Radius have a particularly higher premium (\$268,223) over homes built in prior decades.
- The price premium for detached homes in Hawthorn Woods built after 2005 is \$101,365 higher than the price of detached homes built prior to 2005.

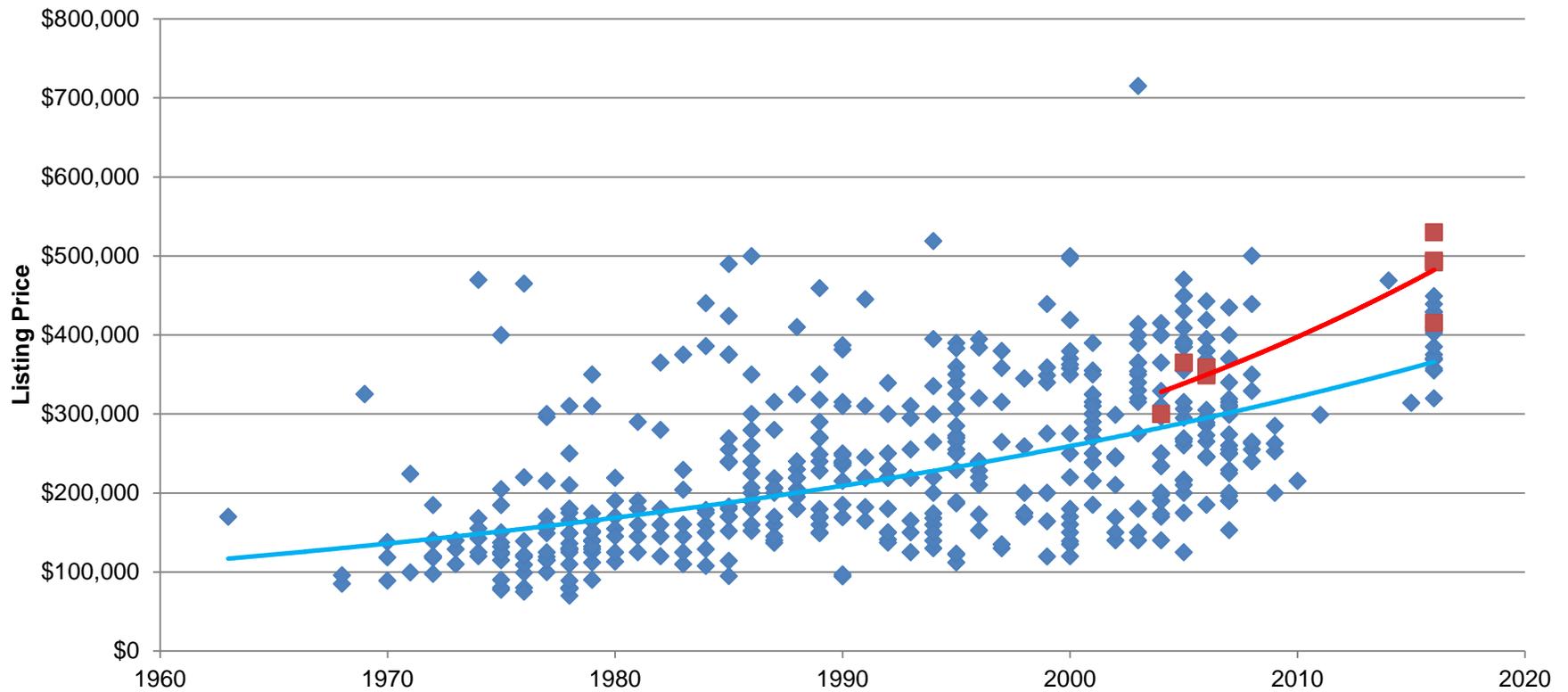
Figure 70 - Attached Home Size and Listing Price



Source: Chicago MLS

- Similar to detached homes, there is a positive correlation between square footage and listing price within the 5-Mile Radius, however there is a negative correlation between square footage and listing price in Hawthorn Woods which is most likely due to the small sample size of eight listings.
- A majority of the attached homes in Hawthorn Woods range from 2,000 to 3,000 square feet, and \$300,000 to \$550,000, while attached homes within the 5-Mile Radius are approximately half the square footage and price.

Figure 71 - Attached Home Year Built and Listing Price



Source: Chicago MLS

- The positive correlation between attached home build year and listing price is consistent with detached homes, as attached homes built after 2005 have a premium of approximately \$93,000 higher than attached homes built prior to 2005 within the 5-Mile Radius.

A black and white photograph of a street intersection. In the foreground, a large, ornate black metal pole stands on the left. A horizontal arm extends from the pole, supporting a rectangular sign that reads "Gilmer Rd". To the right of the sign are two traffic light assemblies. A security camera is mounted on a tall pole above the traffic lights. In the background, another intersection is visible with traffic lights and a sign for "Newby St". A white car is driving on the road to the right, and another car is partially visible on the left. The sky is overcast with light clouds.

Gilmer Rd

Fiscal Perspective

Analysis Process

In order to assess the financial standing of the Village of Hawthorn Woods, 6 financial metrics for Hawthorn Woods were compared against an average of a 15-city sample in Lake County, IL. This sample included the cities of Antioch, Arlington Heights, Barrington, Buffalo Grove, Deerfield, Highland Park, Lake Forest, Lake Zurich, Libertyville, Lincolnshire, Mundelein, Vernon Hills, Waukegan, and Wheeling.

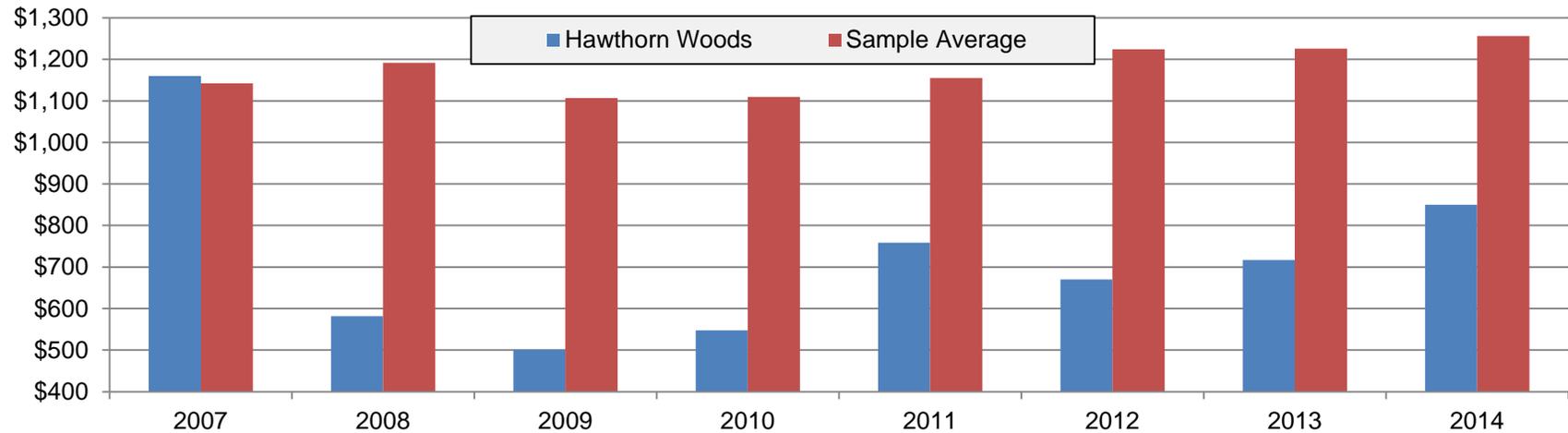
Implications

- Hawthorn Woods takes in less revenue and spends fewer funds per citizen than any other city in the Lake County sample, implying a smaller scope of municipal government.
- Primary government debt outstanding in Hawthorn Woods increased since 2005 from having no primary government debt to a value of \$1,041.41 per capita in 2014. There are two primary reasons for the increase: i) a refinancing of non-commitment SSA bonds with General Obligation Debt Certificates to take advantage of lower interest rates; and ii) issuance of the Aquatic Center Revenue Bonds.
- Retail sales per capita in Hawthorn Woods have been consistently lower than in other cities of the Lake County sample, holding a value of \$1,821.56 in 2014. This implies a small retail tax base in Hawthorn Woods.

Analysis

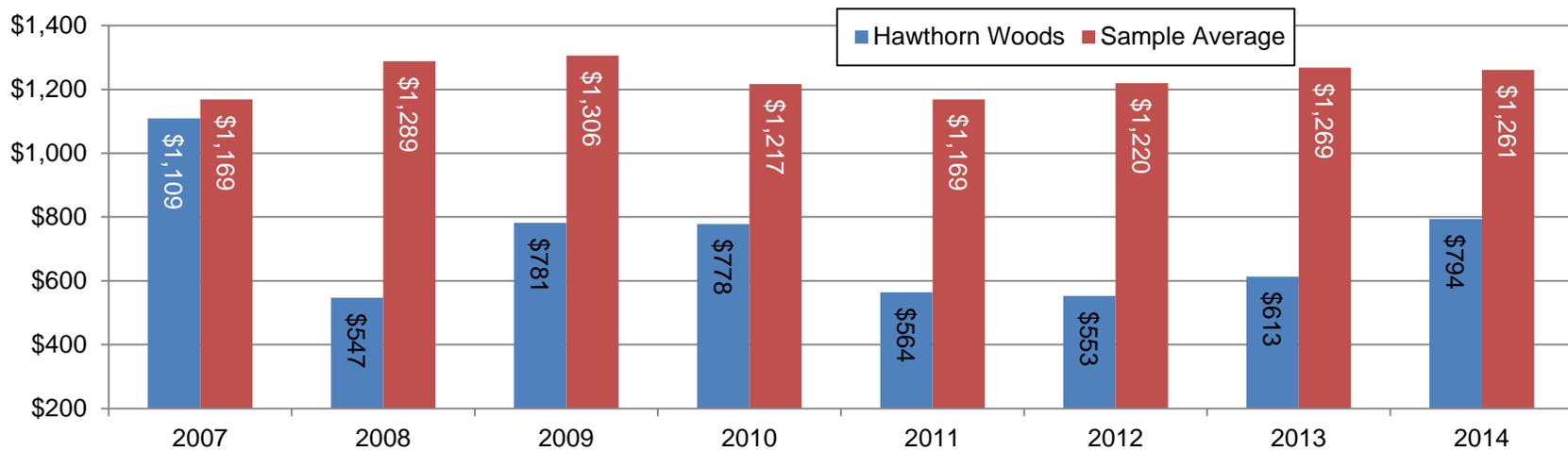
As shown below, in 2014, Hawthorn Woods had the lowest per capita government revenue out of the Lake County Sample. Between 2007 and 2014, while overall government revenue per capita in Hawthorn Woods has declined from 2007 levels, revenues have increased since 2012.

Figure 72 - Lake County Revenue per Capita



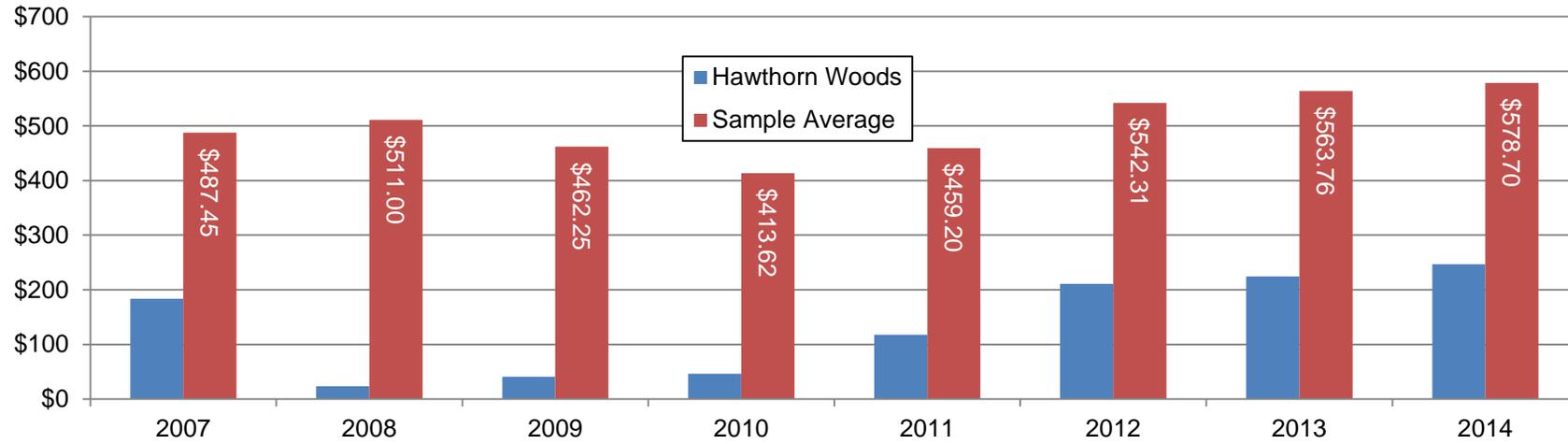
As shown below, in 2014, Hawthorn Woods had the lowest level of per capita total government expenditure out of the Lake County sample. Between 2007 and 2014, government expenditure per capita declined at an annual rate of 4.7% in Hawthorn Woods, while the aggregate sample level of government spending per capita increased at a rate of 1.1%.

Figure 73 - Lake County City Expenditure per Capita



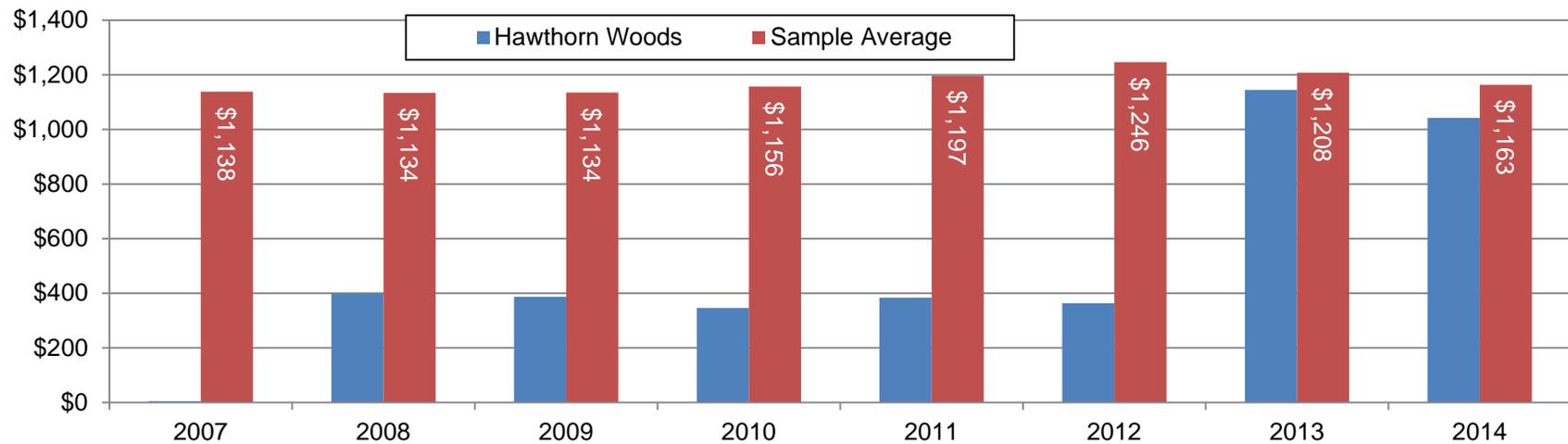
As shown below, in 2014, while Hawthorn Woods had the second lowest general fund balance per capita, the rate of growth in per capita general fund balance has increased at an annual rate of 4.3%, faster than the aggregate sample growth rate of 2.5%.

Figure 74 - Lake County City General Fund Balance per Capita



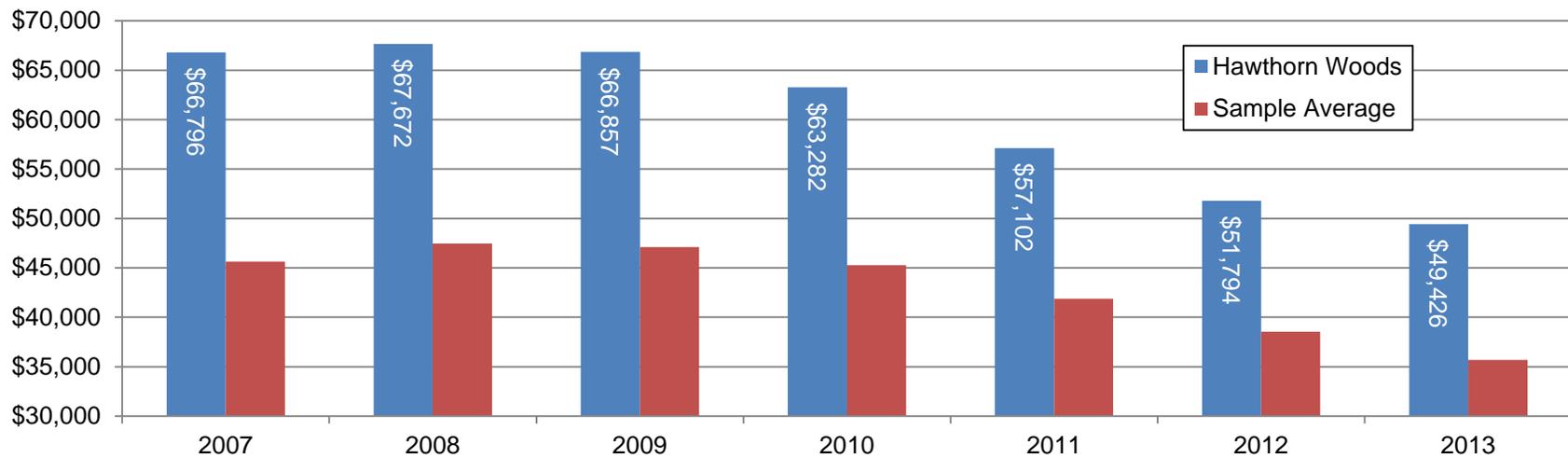
As shown below, the Village of Hawthorn Woods had zero outstanding primary government debt in 2007. However, this statistic does not reflect the non-commitment SSA #1, SSA #2, and SSA #3 debt that was issued in 2003. In 2008, the Aquatic Center Revenue Bonds were issued. In 2013, the SSA #1, SSA #2, and SSA 3# bonds were refinanced. Between 2007 and 2014, government debt per capita in Hawthorn Woods increased at an annual rate of 124.9%, while the aggregate sample level of debt per capita increased by 0.3%.

Figure 75 - Lake County Debt per Capita



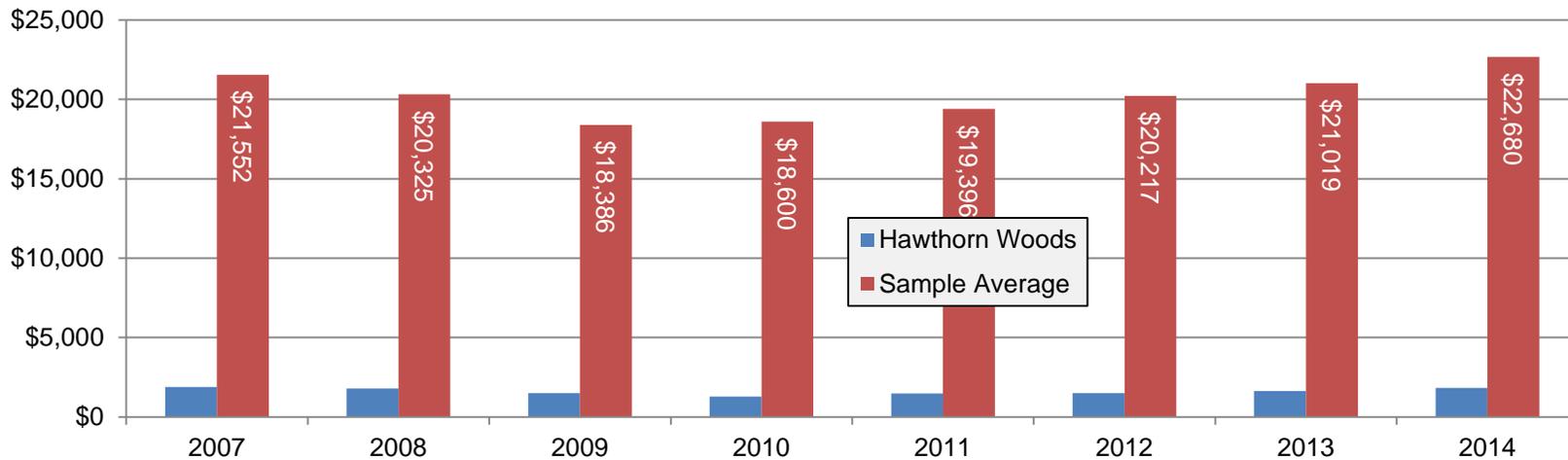
As shown below, property Values in Hawthorn Woods remained consistently high between 2007 and 2013, with equalized assessed value per capita totaling \$49,425.69 in 2013. EAV per capita contracted at an annual rate of 4.9% between 2007 and 2013 in Hawthorn Woods, slightly faster than the aggregate sample contraction rate of 4%

Figure 76 - Lake County Property Values (EAV) per Capita



As shown below, Hawthorn Woods consistently had the lowest level of retail sales per capita out of the Lake County sample. Retail sales per capita in Hawthorn Woods contracted at a rate an annual rate of .5%, while the aggregate sample retail sales per capita increased at an annual rate of .7%

Figure 77 - Lake County Retail Sales per Capita



As shown below, the general fund of Hawthorn Woods experienced a critical decline during the 2008 recession, and reached a bottom of \$169,882. Between 2000 and 2014, the population of Hawthorn Woods has increased at a faster annual rate than the general fund balance of the village (2.0% and 1.2% respectively). The general fund balance per capita has not recovered to its 2000 level of \$273.52 per person post 2008, and stood at \$246.98 per person in 2014, indicating that the Village had less operating funds per person than in 2000.

As shown below, following closely with total debt outstanding, total debt per capita in Hawthorn Woods increased beginning in 2008 and 2013; by 2014, outstanding debt per citizen totaled \$1,041.

Figure 78 - General Fund Balance vs. General Fund per Capita

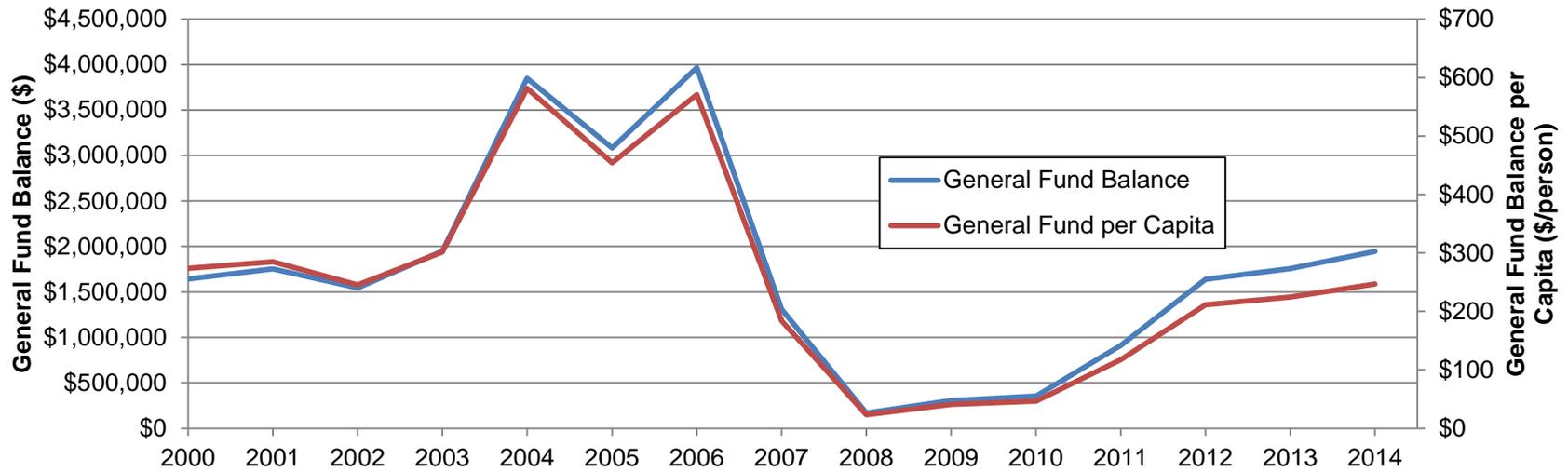


Figure 79 - Primary Government Debt

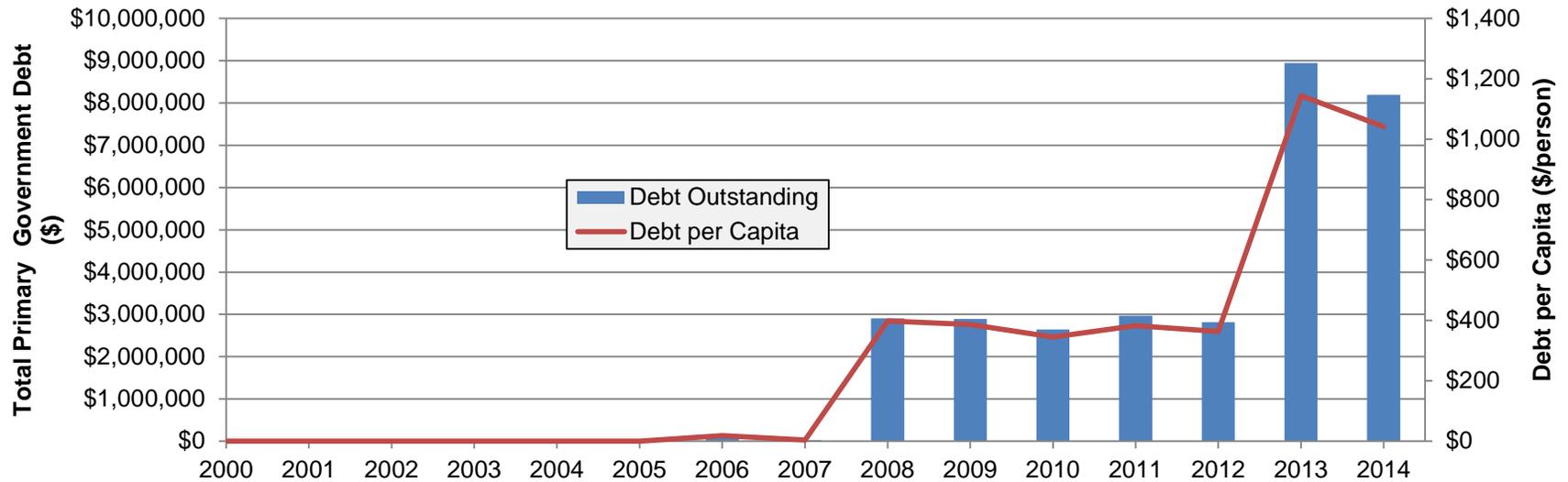
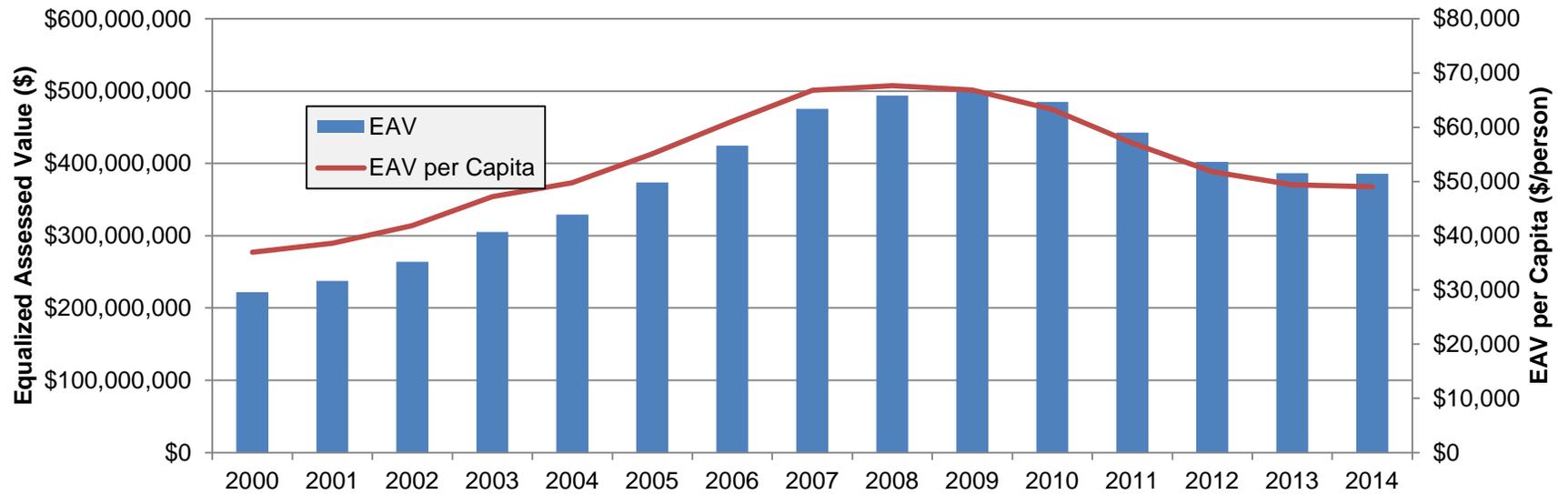


Figure 80 - Equalized Assessed Property Values



As shown above, property values have risen between 2000 and 2014 at a rate of 4.0% per annum. Hawthorn Woods saw a decline in EAV every year after 2009, though the 2014 EAV of \$385,754,065 was higher than the 2000 value of \$221,849,445; since 2009, property values have fallen at an annual rate of 5.1%.

Appendix



Downtown Parcel List

Downtown Parcels																				
ID	Parcel	In SS A 4	Activity	Proposed Use	Land Use Variable	Gross Acreage	Net Acreage	Net Site SF	Commercial				Residential				Potential Future Allocated gallons	Potential Future Allocated PE	PE per SSA#4	
									Existing SF	Future SF	Total SF	Lot Coverage	Existing DU	Under Construction	Proposed	Total				
West of Midlothian	1	Cherry Hill Plaza	Existing Retail Center / W expansion	Commercial - Expansion		6.52	6.52	283,920	11,100	22,200	33,300	11.7%				0	19,814	198		
	2	Hawthorn Hills/Pulte	New Residential Subdivision	Residential		106.65	96.36	4,197,442			0		67	153		220	77,000	770		
	2b	Hawthorn Hills/Pulte	New Retail Space	Retail		5.60	5.60	243,936		29,100	29,100	11.9%				0	17,315	173		
	3	Pheasant Ridge Estates	Existing Residential Area	No Change		60.37	52.79	2,299,532			0		63			63	0	0		
	3b	HDB	New Retail Space	Retail		7.00	7.00	304,920		39,640	39,640	13.0%				0	23,586	236		
	4	Marilyn Road	Existing Residential Area	No Change	Unincorporated	37.99	37.99	1,654,691			0		33			33	0	0		
	5	62 Acres	Y Public	Public - No Change		60.46	43.94	1,914,026			0					0	250	2.5	378	
	6	Krueger	Y Vacant - For Development	Residential		16.70	16.70	727,275			0				67	67	23,450	235	244	
	7	The Equitable Fund	Y Vacant	Residential		20.79	20.78	905,299			0				83	83	29,050	291	366	
	8	HW Business Park	Existing office park	Commercial - Expansion		9.51	9.50	413,909	44,505	9,043	53,548	12.9%				0	814	8		
	9	Krueger	Y Single Family House - For Redevelopment	Residential		0.79	0.79	34,614			0					3	3	1,050	11	0
10	Little House	Single Family House - For Redevelopment	Residential		0.50	0.50	21,628			0					2	2	700	7		
11	3 Corners	3 Corners Park - Public	Public - No Change		3.44	3.44	149,719	0	0	0	0	0	0		0	0	0	0		
East of Midlothian	14	Property West of Railroad (Spizziri)	Y Vacant - For Development	Residential	rail corridor to rear	7.47	7.47	325,540			0				30	30	10,500	105	93	
	15	The Equitable Funds (East)	Vacant - For Development	Commercial	rail corridor to rear	20.47	19.57	852,335		143,000	143,000	16.8%				0	6,435	64		
	17	Wilson	Vacant - For Development	Commercial	Rail corridor adjacent	2.74	2.74	119,193		17,826	17,826	15.0%				0	10,606	106		
	18	White/Thomas	For Redevelopment	Commercial	Rail corridor adjacent	1.46	1.45	63,353		9,500	9,500	15.0%				0	5,653	57		
	19	Sevin	Y For Redevelopment	Residential	rail corridor to rear	2.00	2.00	87,321			0				8	8	2,800	28	24	
	20	Petrungaro/Manda	Y Vacant - For Development	Residential	rail corridor to rear	18.03	17.49	762,033			0				72	72	25,200	252	221	
	21	Schmechtig	Y For Redevelopment	Residential	rail corridor to rear	5.27	5.27	229,584			0				21	21	7,350	74	55	
	22	Aquatic Center	Public	Public - No Change	rail corridor to rear	5.82	5.82	253,367			0					0	N/A			
	23	Beck	For Redevelopment	Residential	rail corridor to rear	6.34	6.13	267,019			0					25	25	8,750	88	
	24	McGuin/Chicago Trust	For Redevelopment	Residential	rail corridor to rear	7.42	7.42	323,215			0					30	30	10,500	105	
	25	Midlothian Center	Existing office park	No Change	Unincorporated	8.81	8.81	383,791	131,000		131,000					0	0	0		
26	Gilmer Shell	Existing gas station	No Change		0.38	0.38	16,756	4,000		4,000					0	0	0			
27	Gilmer Roadhouse	Existing Building	No Change	Unincorporated	0.81	0.81	35,334	3,000		3,000					0	0	0			
South of Old McHenry	16	Flex (Hummel)	Vacant - For Development	Commercial	rail corridor to rear	17.58	17.58	765,662	0	229,700	229,700	30.0%				0	10,337	103		
	12	Geffe	For Redevelopment	Commercial		5.44	5.44	237,157	0	71,100	71,100	30.0%				0	3,200	32		
	13	Old McHenry Farm	For Redevelopment	Commercial	rail corridor to rear	20.80	20.13	876,873	0	263,100	263,100	30.0%				0	11,840	118		
	28	Wollberg	For Redevelopment	Commercial	Rail corridor adjacent	0.99	0.99	43,258	0	13,000	13,000	30.0%				0	1,170	12		
						468	431	18,792,704	193,605	847,209	1,040,814		163	153	341	657	307,367	3,074	1,381	

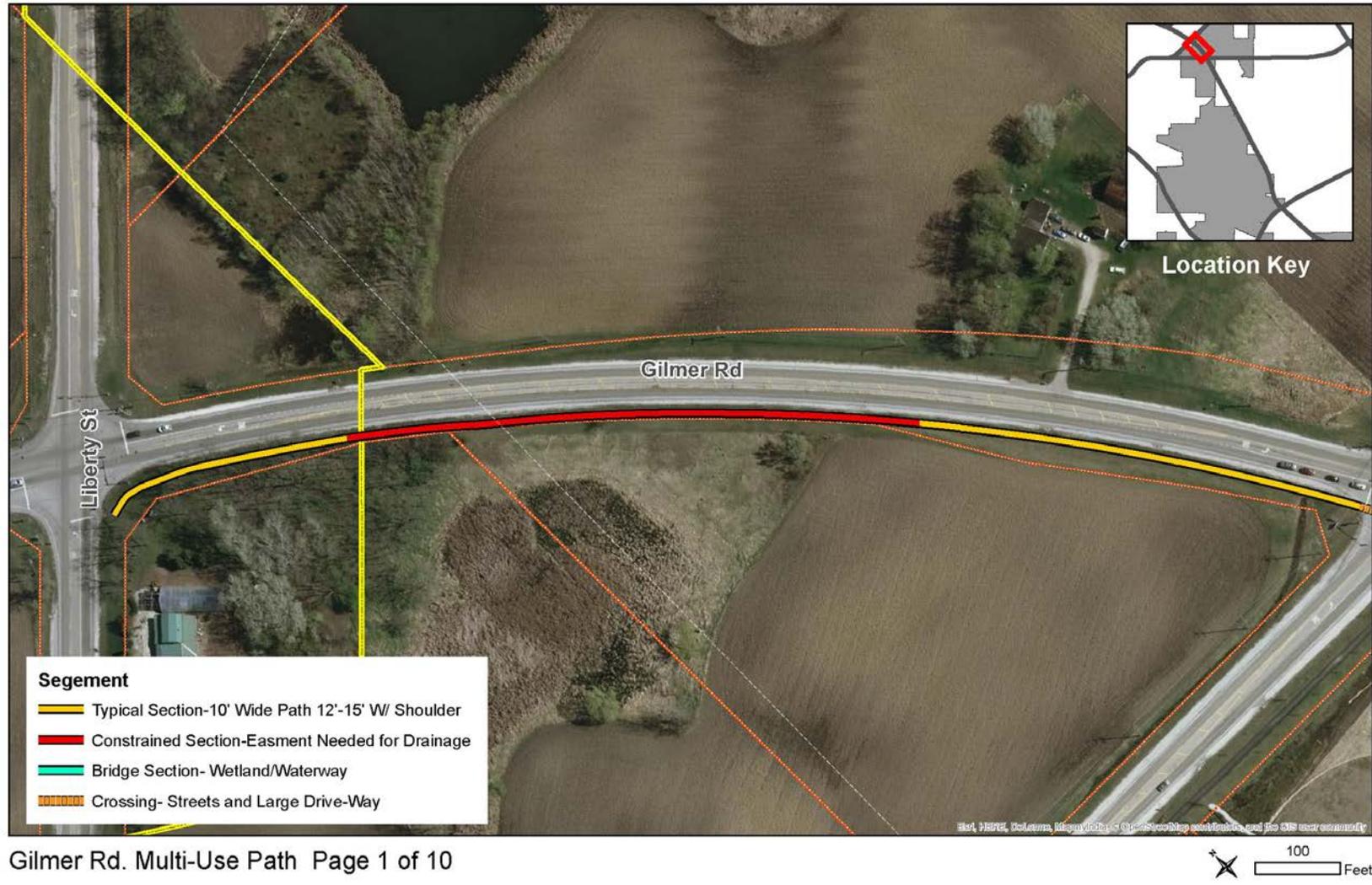
Uptown Parcel List

Uptown Parcels		Activity	Proposed Use	Land Use Variable	Gross Acreage	Net Acreage ²	Net Site SF	Commercial				Residential				Potential Future Allocated gallons	Potential Future Allocated PE
ID	Parcel							Existing SF	Future SF	Total SF	Lot Coverage	Existing DU	Under Construction	Proposed DU	Total		
1	Steffenhagen Prop 1	New Residential Area	Residential		60.60	60.20						0	0	242	242	84,700	847
2	Steffenhagen Prop 2	New Residential Area	Residential		5.00	5.00						0	0	20	20	7,000	70
3	Steffenhagen Prop 3	New Residential Area	Residential		3.90	3.90						0	0	16	16	5,600	56
4	Steffenhagen Prop 4	New Residential Area	Residential		7.40	7.40						0	0	30	30	10,500	105
5	Nicholas & Mireya Puga	New Residential Area	Residential		0.70	0.70						0	0	3	3	1,050	11
6	Lawrence P Hoffman 1	New Residential Area	Residential		0.30	0.30						0	0	1	1	350	4
7	Lawrence P Hoffman 2	New Residential Area	Residential		6.10	6.10						0	0	24	24	8,400	84
8	Steffenhagen Prop 5	New Residential Area	Residential		1.90	1.90						0	0	8	8	2,800	28
9	Steffenhagen Prop 6	New Residential Area	Residential		1.20	1.20						0	0	5	5	1,750	18
10	Gregory & Donna Di Piero	New Residential Area	Residential		5.10	4.90						0	0	20	20	7,000	70
11	Cheryl Lynn Schinski	New Residential Area	Residential		4.60	3.80						0	0	18	18	6,300	63
12	Robert G Tichy	New Residential Area	Residential		9.60	5.30						0	0	38	38	13,300	133
13	Mark M & Kathy A Meade	New Residential Area	Residential		9.70	8.10						0	0	39	39	13,650	137
14	Mark M & Kathleen S Meade	New Residential Area	Residential		5.00	5.00						0	0	20	20	7,000	70
15	Steffenhagen Prop 7	New Residential Area	Residential		4.60	4.60						0	0	18	18	6,300	63
16	Robert M Judge	New Residential Area	Residential		8.60	8.40						0	0	34	34	11,900	119
17	John P Reindl	New Residential Area	Residential		9.40	5.90						0	0	38	38	13,300	133
18	William A & Joann C Mc Laughlin 1	New Residential Area	Residential		8.60	5.00						0	0	34	34	11,900	119
19	Chicago Title Land Trust Co 1	New Commercial	Commercial / Mixed Use		12.40	12.10	527,076	0	68,500	68,500	13.0%	0	0	50	50	58,258	583
20	Chicago Title Land Trust Co 2	New Commercial	Commercial / Mixed Use		3.30	3.30	143,748	0	18,700	18,700	13.0%	0	0	13	13	15,677	157
21	Chicago Title Land Trust Co 3	New Commercial	Commercial / Mixed Use		12.30	10.70	466,092	0	60,600	60,600	13.0%	0	0	49	49	53,207	532
22	Amarjit S & Jaswinder Sidhu, Trustees	New Residential Area	Residential		37.90	32.00						0	0	152	152	53,200	532
23	Charles E Whitesell	New Residential Area	Residential		13.60	10.00						0	0	54	54	18,900	189
24	William & Joann Mc Laughlin 2	New Residential Area	Residential		14.30	8.50						0	0	57	57	19,950	200
25	Bank Of Waukegan	New Residential Area	Residential		13.80	12.80						0	0	55	55	19,250	193
26	Chicago Title Land Trust Co 4	New Commercial	Commercial / Mixed Use		18.20	16.00	696,960	0	90,600	90,600	13.0%	0	0	73	73	79,457	794.57
27	Chicago Title Land Trust Co 5	New Commercial	Commercial / Mixed Use		1.00	1.00	43,560	0	5,700	5,700	13.0%	0	0	4	4	4,792	48
28	Pedro V Or Ydolina Borrego, Trustees	New Commercial	Commercial / Mixed Use		2.50	2.50	108,900	2,200	14,200	16,400	13.0%	0	0	10	10	3,500	35
29	Robert & Maggie Luber	New Residential Area	Residential		14.50	13.80						0	0	58	58	20,300	203
30	Thorngate Country Club	New Residential Area/Utility	Residential		9.60	9.60						0	0	38	38	13,300	133
31	Ags Design Inc 1	New Residential Area	Residential		0.20	0.20						0	0	1	1	350	4
32	Ags Design Inc 2	New Residential Area	Residential		4.20	4.00						0	0	17	17	5,950	60
33	Scott Wood 1	New Residential Area	Residential		0.30	0.30						0	0	1	1	350	4
34	Scott Wood 2	New Residential Area	Residential		4.90	4.30						0	0	20	20	7,000	70
35	Fisher Burton Llc	New Residential Area	Residential		10.10	10.10						0	0	40	40	14,000	140
36	William A & Catherine A Werner, Trustees	New Residential Area	Residential		5.10	5.10						0	0	20	20	7,000	70
37	Fisher Burton Limited	New Residential Area	Residential		4.60	4.60						0	0	18	18	6,300	63
38	Countryside Glen	Existing Residential Area	Residential	High Visibility Corner	65.54	53.15	2,315,214					36		0	36	0	0
38A	Countryside Glen Corner	New Commercial	Commercial		6.13	5.80	252,648	0	32,800	32,800	13.0%					19,516	195
39	Starzwood	Existing Residential Area	Residential		16.94	16.94	737,906			0		14		0	14	0	0
40	Fiore	New Residential Area	Residential		66.11	63.89	2,783,048					0	0	264	264	92,400	924
41	Lipschultz	New Commercial	Commercial / Mixed Use		7.25	6.41	279,220	0	36,300	36,300	13.0%	0	0	29	29	21,599	216
42	Country Bumpkin	For Redevelopment	Commercial		4.87	4.87	212,137	8,100	27,600	35,700	13.0%	0	0	0	71,400	21,242	212
43A	Towne -south	New Residential Area	Residential		20.00	18.60	810,216			0		0	0	80	80	28,000	280
43B	Towne - north	New Residential Area	Residential		80.18	74.57	3,248,156			0		0	0	321	321	112,350	1,124
44	Winchester	New Residential Area	Residential		55.38	47.20	2,056,032			0		0	0	222	222	77,700	777
45	Costekin	New Residential Area	Residential		11.13	8.40	365,904			0		0	0	45	45	15,750	158
46	Archdiocese	New Commercial	Commercial / Mixed Use		16.21	14.81	645,124	0	83,900	83,900	13.0%	0	0	65	65	49,921	499
TOTAL UPTOWN Sub-Total Phase					685	613	15,691,941	10,300	438,900	449,200		50	0	2,364	73,814	1,052,016	10,520

Retail Real Estate Property Types

U.S. Shopping-Center Classification and Characteristics												
Type	Concept	Center Count	Aggregate GLA (Sq. Ft.)	% of GLA	Average Center Size	Size Range (SF)	Size (acres)	# of Anchors	% Anchor GLA	Typical # of Tenants	Typical Type of Anchors	Trade Area Size
General-Purpose Centers												
Super-Regional Mall	Similar in concept to regional malls, but offering more variety and assortment.	622	774,164,063	10%	1,245,000	800,000 +	60-120	3+	50-70%	NA	Full-line or junior department store, mass merchant, discount department store and/or fashion apparel store.	5-25 miles
Regional Mall	General merchandise & fashion offerings. Typically enclosed with stores connected by a common walkway, and parking surrounding the perimeter.	600	354,534,497	5%	591,000	400,000-800,000	40-100	2+	50-70%	40-80 stores	Full-line or junior department store, mass merchant, discount department store and/or fashion apparel store.	5-15 miles
Community Center	General merchandise or convenience-oriented. Wider range of apparel / soft goods than neighborhood centers.	9,746	1,923,641,457	25%	197,000	125,000-400,000	10-40	2+	40-60%	15-40 stores	Discount store, supermarket, drug, large-specialty discount (toys, books, electronics, home improvement/furnishings or sporting goods, etc.)	3-6 miles
Neighborhood Center	Convenience oriented.	32,506	2,337,559,176	31%	72,000	30,000-125,000	3-5	1+	30-50%	5-20 stores	Supermarket	3 miles
Strip / Convenience	Attached stores with on-site parking, open canopies connecting stores (no enclosed walkways), configured in a straight line, or "L" or "U" shape.	68,841	910,682,441	12%	13,000	< 30,000	<3	no anchors	NA	NA	Convenience store, such as a mini- mart.	<1 mile
Specialized-Purpose Centers												
Power Center	Category-dominant anchors, including discount department stores, off-price stores, wholesale clubs, with only a few small tenants.	2,244	981,502,463	13%	437,000	250,000-600,000	25-80	3+	70-90%	NA	Category killers, home improvement, discount department, warehouse club and off-price stores	5-10 miles
Lifestyle	Upscale national-chain specialty stores, dining & entertainment; outdoor setting.	478	158,772,071	2%	332,000	150,000-500,000	10-40	0-2	0-50%	NA	Large format upscale specialty	8-12 miles
Factory Outlet	Manufacturers' and retailers' outlet stores selling brand- name goods at a discount.	364	87,503,170	1%	240,000	50,000-400,000	10-50	NA	NA	NA	Manufacturers' and retailers' outlets	25-75 miles
Theme / Festival	Leisure, tourist, retail and service-oriented with entertainment as a unifying theme. may be adapted from older buildings / mixed-use project.	159	23,761,424	0%	149,000	80,000-250,000	5-20	Depends	NA	NA	Restaurants, entertainment	25-75 miles
Total Industry												
Total Industry	Traditional + Specialty + Special Purpose	115,560	7,552,120,800	100%	65,000							
Sources: ICSC Research and CoStar Realty Information, Inc. (www.costar.com)												
August 2016												

Proposed Gilmer Road Bike Path Route



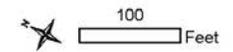
Gilmer Rd. Multi-Use Path Page 1 of 10



Gilmer Rd. Multi-Use Path Page 2 of 10



Gilmer Rd. Multi-Use Path Page 3 of 10

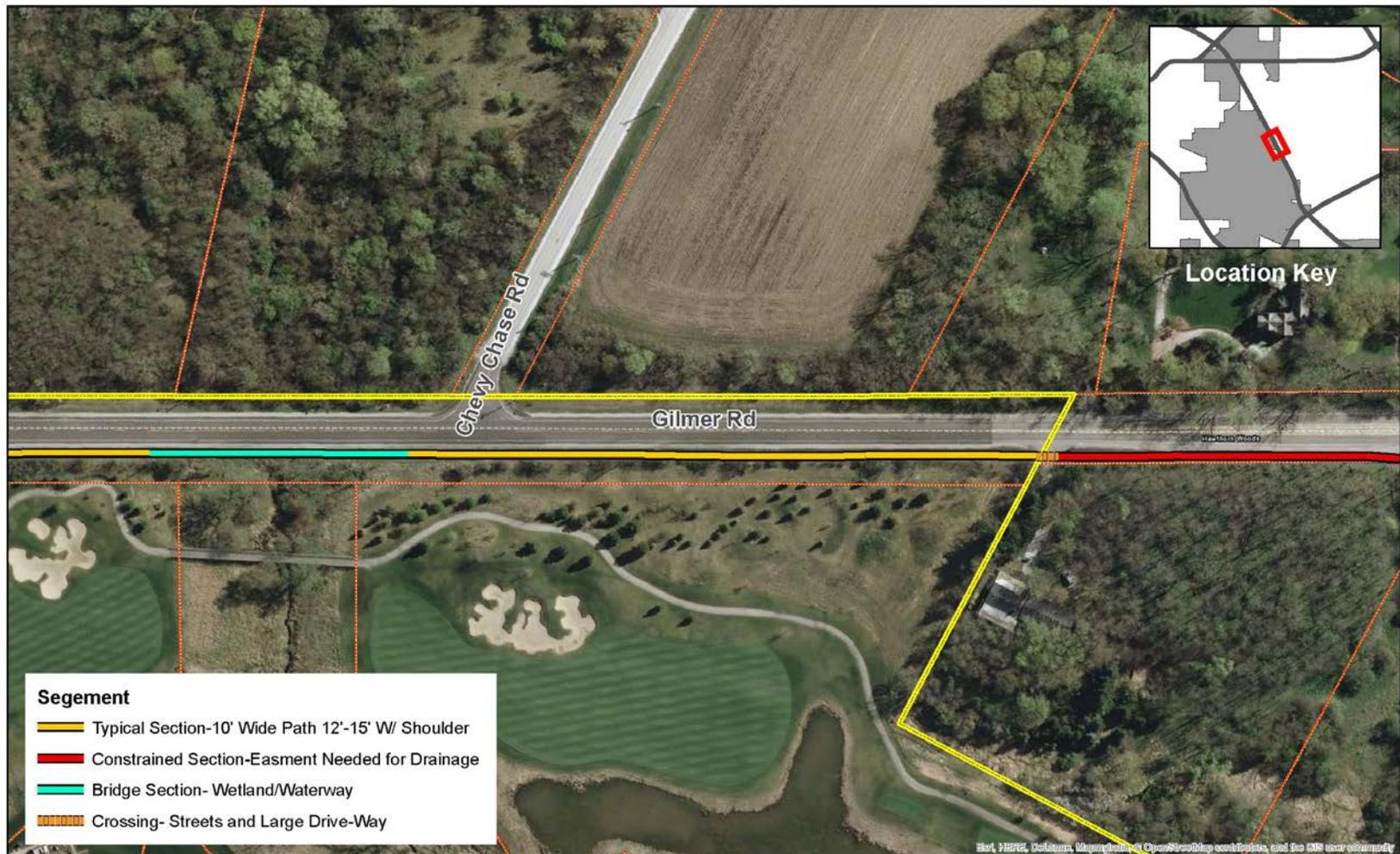




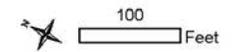
Gilmer Rd. Multi-Use Path Page 4 of 10



Gilmer Rd. Multi-Use Path Page 5 of 10



Gilmer Rd. Multi-Use Path Page 6 of 10

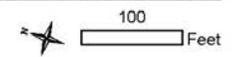




Gilmer Rd. Multi-Use Path Page 7 of 10



Gilmer Rd. Multi-Use Path Page 8 of 10





Gilmer Rd. Multi-Use Path Page 9 of 10



Gilmer Rd. Multi-Use Path Page 10 of 10

**APPENDIX B.1
VILLAGE OF HAWTHORN WOODS
ENGINEER'S OPINION OF PROBABLE CONSTRUCTION COST
14-Apr-17**

TABLE 1 - APPROXIMATE COST FOR 1 LF OF PRESSURE PIPE (NOT INCLUDING PIPE MATERIAL)

No.	Item	Quantity (per one LF of pressure pipe)	Unit	Unit Price	Cost per LF of pressure pipe
UNIT PRICE BID ITEMS					
1	Pressure Pipe Installation ¹	1.000	LF	\$50	\$50
2	Trenchless installations ²	0.010	LF	\$1,000	\$10
3	Value Vial ³	0.002	EA	\$6,500	\$13
4	Hydrant ⁴	0.003	EA	\$4,500	\$15
5	Bedding and backfill ⁵	0.500	CY	\$50	\$25
6	Seeding and Topsoil Restoration ⁶	0.500	SY	\$12	\$6
7	Pavement Restoration ⁷	0.050	SY	\$65	\$3
8	Erosion Control	1.000	LF	\$3	\$3
Subtotal (typical pressure pipe installation)					\$126
Traffic Control (5%)					\$6
Mobilization/Demobilization/Shop Drawings (5%)					\$6
Insurance and Bonding (3%)					\$4
Overhead/Profit: (15%)					\$19
Total for pressure pipe construction (per LF)⁸					\$160

Assumptions

- \$7,500 per labor crew per day. Assume one labor crew will install approximately 150 LF of pressure pipe per day at 5' of cover.
- Approximately 1% of the project will need trenchless pressure pipe installation methods (i.e. jackbores).
- One value vial per 500 LF of water main (i.e. 0.002 hydrants per 1 LF of pressure pipe).
- One hydrant per 300 LF of water main (i.e. 0.003 hydrants per 1 LF of pressure pipe).
- Back construction will be in the parkway and not under the road. Therefore, bedding will be required, but little trench backfill will be needed. Trench width is 4.5'.
- Trench width is 4.5'.
- Assume a 6-inch patch. Assume pavement restoration is needed for approximately 5% of the job.
- The cost of potable water main construction is approximately the same as force main (sewer) construction.

TABLE 2 - ADJUSTMENT FOR PIPE DIAMETER

Pipe Size	Multiplier ^a	Cost Per LF (\$100LF x Multiplier)
4-inch diameter	90%	\$144
6-inch diameter	95%	\$152
8-inch diameter	100%	\$160
12-inch diameter	105%	\$168
16-inch diameter	110%	\$176

^aInstallation and restoration costs will be slightly more for larger pipe and slightly less for small pipe. These multipliers are based on engineering experience.

TABLE 3 - FINAL ESTIMATE (PER LF, INCLUDING PIPE MATERIAL)

Quantity	Unit	Total Unit Price (Material plus costs listed in Table 2 above)	FINAL ESTIMATE, \$AY
4-inch diameter	1,000	LF	\$171
6-inch diameter	1,000	LF	\$181
8-inch diameter	1,000	LF	\$185
12-inch diameter	1,000	LF	\$200
16-inch diameter	1,000	LF	\$220
			\$238

General Limiting Conditions

AECOM devoted the level of effort consistent with (i) the level of diligence ordinarily exercised by competent professionals practicing in the area under the same or similar circumstances, and (ii) consistent with the time and budget available for the Services to develop the Deliverables. The Deliverables are based on estimates, assumptions, information developed by AECOM from its independent research effort, general knowledge of the industry, and information provided by and consultations with Client and Client's representatives. No responsibility is assumed for inaccuracies in data provided by the Client, the Client's representatives, or any third-party data source used in preparing or presenting the Deliverables. AECOM assumes no duty to update the information contained in the Deliverables unless such additional services are separately retained pursuant to a written agreement signed by AECOM and Client.

AECOM's findings represent its professional judgment. Neither AECOM nor its parent corporations, nor their respective affiliates or subsidiaries ("AECOM Entities") make any warranty or guarantee, expressed or implied, with respect to any information or methods contained in or used to produce the Deliverables. The Deliverables shall not be used in conjunction with any public or private offering of securities, debt, or equity, or instruments of a similar nature where it may be relied upon to any degree by any person other than the Client. The Deliverables shall not be used for purposes other than those for which they were prepared or for which prior written consent has been obtained from AECOM.

Client shall not issue any press releases or statements to the media describing AECOM or the services provided by AECOM under this Agreement without the prior express written consent of AECOM (consent shall not be unreasonably withheld). This limitation does not apply to references to the Deliverable. AECOM has served solely in the capacity of consultant and has not rendered any expert opinions in connection with the subject matter hereof. Any changes made to the Deliverables, or any use of the Deliverables not specifically identified in the Agreement between the Client and AECOM or otherwise expressly approved in writing by AECOM, shall be at the sole risk of the party making such changes or use.

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