



Committee of the Whole

Meeting Date: July 17, 2018
Submitted by: Stephanie Poirier, Planner, and Durk Vanderwerff, Director of Planning
SUBJECT: POPULATION PROJECTIONS FOR MIDDLESEX COUNTY

BACKGROUND:

Population Projections for Middlesex County and the local municipalities are included within the County's Official Plan and are intended to be used by the County and local municipalities to assist in managing growth and development. With the release last year of the 2016 Census population information it is timely to update the County's Projections.

This report reviews at a high-level past growth trends and provides an overview of five projection methods (Ministry of Finance, Employment Land Needs Study, Geometric, Geometric Adjusted and Cohort Survival) that have been examined. In the end, staff recommend that Council endorse a Projected Population Range, which includes low and high numbers, as being the most likely to represent the future population for Middlesex County.

ANALYSIS:

Past Growth Trends

Statistics Canada population data provides the most complete available picture of the County's population and typically Census numbers are relied upon for population projections. Table One presents the Census Population by Municipality for the past 20 years. Overall the County's population has grown by a straight line average annual growth rate of 0.8%, however the population growth has not occurred evenly across the municipalities within the County.

It is noted that the 2016 Census numbers included within Table One (and within this report generally) have been adjusted upward by 3.5% for an assumed undercount rate. Whenever a Census is undertaken some people are not counted or are otherwise missed. As such, Statistics Canada conducts postcensal coverage studies to determine

how many individuals were missed and then adjusts Census numbers. Statistics Canada has not yet released the postcensal coverage studies so, as an interim measure, a historical undercount adjustment within Ontario of 3.5% has been utilized.

Although the Census is the best available information, Staff believe that recent Census numbers do not accurately reflect the growth that is occurring within the County. For example, the 2011 Census showed a population decline for Thames Centre and the 2016 Census (before the undercount adjustment) showed a population decline for Strathroy-Caradoc whereas we know that both municipalities are experiencing growth.

While there are factors such as declining household size that can limit population expansion while still having growth in household numbers and therefore development activity, the experience 'on the ground' of rapid development in many settlement areas leaves staff to conclude that the Census numbers are not as accurate for our current population. It is also clear that the 2016 Census has not recognized the recent surge in building activity that has occurred within the County.

	Population					Change	
	1996	2001	2006	2011	2016*	# of people	average growth
Adelaide Metcalfe	3,128	3,149	3,125	3,028	3,095	-33	-0.05%
Lucan Biddulph	4,166	4,201	4,187	4,338	4,865	699	0.84%
Middlesex Centre	12,985	14,275	15,589	16,487	17,869	4,884	1.88%
Newbury	430	422	439	447	481	51	0.60%
North Middlesex	6,978	6,901	6,740	6,658	6,572	-406	-0.29%
Southwest Middlesex	6,204	6,144	5,890	5,860	5,920	-284	-0.23%
Strathroy-Caradoc	18,100	19,114	19,977	20,978	21,600	3,500	0.97%
Thames Centre	12,149	12,473	13,085	13,000	13,657	1,508	0.62%
Middlesex County	64,140	66,635	69,032	70,796	74,059	9,919	0.77%

* 2016 numbers assume a 3.5% adjustment for anticipated Census undercount

Household Size

Statistics Canada household size data by Municipality for the last 20 years is included in Table Two. The average household size or persons per unit (PPU) has steadily

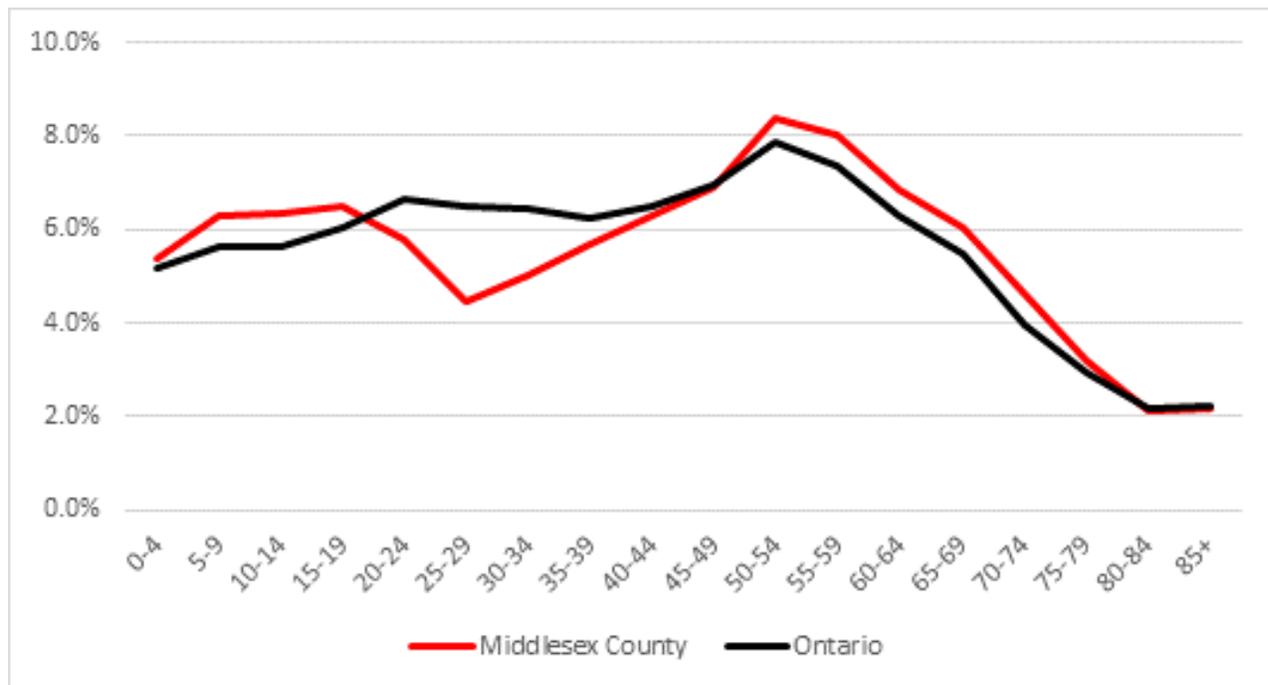
decreased across the County. This can be attributed to several factors including the aging of the County's population and overall household composition trends of less children per household and more single-person households. The County's trends are consistent with other parts of Southwestern Ontario and the Province in general which has a 2016 average PPU of 2.59. It is important to note that a declining PPU can be expected to translate into continuing demand for new dwelling construction even where a municipality is projected to have a stable population.

Table Two – Census Household Size for Middlesex County 1996 to 2016

	Average Household Size (PPU)					Change PPU
	1996	2001	2006	2011	2016	
Adelaide Metcalf	3.2	3.1	3	3	2.9	-0.3
Lucan Biddulph	2.9	2.9	2.8	2.7	2.6	-0.3
Middlesex Centre	3.1	2.9	2.9	2.9	2.8	-0.3
Newbury	2.7	2.6	2.4	2.4	2.5	-0.2
North Middlesex	3	2.9	2.8	2.7	2.6	-0.4
Southwest Middlesex	2.8	2.7	2.6	2.5	2.4	-0.4
Strathroy- Caradoc	2.8	2.7	2.6	2.6	2.5	-0.3
Thames Centre	3	2.9	2.8	2.8	2.7	-0.3
Middlesex County					2.63	

Figure One graphically shows the 2016 Census Population Distribution for Middlesex County compared to Ontario. In general, compared to Ontario, Middlesex has less young adults and a somewhat more senior population. Middlesex County as a whole also has a smaller working-age population, especially within the 20 to 40 year-olds, which is not inconsistent with other Southwestern Ontario Counties.

Figure One – 2016 Census Population Distribution for Middlesex County and Ontario



Introduction to Projections

Staff have examined five projection methods (Ministry of Finance, Employment Land Needs Study, Geometric, Geometric Adjusted and Cohort Survival) for Middlesex County and each is briefly addressed below. It is important to note that population projections are intended to be approximate forecasts that demonstrate general trends and are not to be interpreted as exact targets or as predictions of what will occur – this is especially true for municipalities with smaller populations.

Projections are based on certain assumptions that can be significantly impacted by external factors such as declining birth rates, changes in migration patterns, the aging of the population, increases in life expectancy, and differences in commuting patterns. While such changes generally reflect broader Provincial or National trends, they do have an impact on local populations.

The recent upward trend in building and development within the Middlesex – London region may signal increasing population growth as a result of changing economic factors that is not reflective of past population growth rates and which may not show-up in the Census for another five or ten years. Planning staff believe that we may be in a period of change where we are experiencing greater development activity than the historic numbers show.

It is also recognized that population growth within Middlesex is not occurring evenly across the County and therefore depending on the projection method utilized some may

show a decline in population for some municipalities. In the past, whenever projections have been undertaken there has been concern raised that a declining projection could impact a municipality's ability to justify development proposals, to attract economic development and to justify the retention of educational facilities.

Cohort-Survival Projection

The Economic Development Department utilizes a consultant (Manifold Data Mining Inc.) to provide population data for use within economic profiles and various promotional publications. Manifold recently completed a cohort-survival projection for Middlesex which is summarized in Table Three.

A cohort survival analysis uses a computer model to age the population of a municipality one year at a time using age specific fertility, mortality and migration rates. In other words, the future population = current population + births - deaths + in-migration – out-migration. The analysis was based on a 'bottom up' cohort survival method whereby population forecasts were completed for each local municipality. The County population therefore simply represents an aggregation of these individual populations.

After reviewing the cohort survival projection, planning staff are of the opinion that while this analysis does what it is supposed to do – ages the existing population – it does not sufficiently account for the in-migration that appears to be occurring within the County.

In other words, the cohort survival analysis ages the County's existing population and includes some in-migration of people based upon historic migration rates, however it does not appear to capture the recently increasing in-migration of people from the region to the County that is occurring, especially within Lucan Biddulph, Middlesex Centre, Thames Centre and Strathroy-Caradoc.

As such, planning staff consider the Cohort Survival Method numbers to be low but nevertheless useful because they are broken down by age cohorts (available but not included in this report).

	Population					Change	
	2017*	2021	2026	2031	2036	# of people 2017 to 2036	average growth
Adelaide Metcalfe	3,109	3,086	3,056	3,027	2,998	-111	-0.18%
Lucan Biddulph	5,025	5,402	5,871	6,378	6,931	1,906	1.90%
Middlesex Centre	18,230	19,000	19,921	20,886	21,899	3,669	1.05%
Newbury	488	498	509	520	531	43	0.46%
North Middlesex	6,592	6,406	6,179	5,960	5,749	-843	-0.67%
Southwest Middlesex	5,948	5,865	5,760	5,658	5,557	-391	-0.34%
Strathroy-Caradoc	21,706	21,648	21,563	21,478	21,394	-312	-0.07%
Thames Centre	13,794	13,991	14,226	14,466	14,710	916	0.34%
Middlesex County	74,892	75,896	77,085	78,373	79,769	4,877	0.34%

*An adjusted 2017 base population was utilized instead of a 2016 Census population

Employment Land Needs Assessment Projection

The County completed an Employment Land Needs Study (Millier, Dickinson, Blais 2012) which undertook a high-level population and employment forecast based upon a housing forecast model. This study examined anticipated growth and concluded that a projected population and employment growth rate of approximately 0.9% annually would be likely. It is noted that the Study only projected to 2031 so for the sake of consistency within this report the numbers were calculated for 2036 using a straight-line extrapolation.

A summary of the Employment Land Needs Study projection is included in Table Four. The Employment Land Needs Study projections are considered by staff to be reasonably reflective of both the historic population growth and closer (than the cohort survival analysis) to the amount of development that is currently being experienced within the County.

Table Four – Employment Land Needs Assessment Projections for Middlesex County 2016 to 2036

	Population					Change	
	2016	2021	2026	2031	2036*	# of people 2016 to 2036	average growth
Adelaide Metcalfe	3,095	3,050	3,080	3,120	3147	52	0.18%
Lucan Biddulph	4,865	4,770	5,030	5,320	5632	767	1.15%
Middlesex Centre	17,866	19,310	20,750	22,210	24007	6141	1.57%
Newbury	482	470	490	500	515	33	0.58%
North Middlesex	6,574	6,800	6,900	7,020	7125	551	0.30%
Southwest Middlesex	5,923	5,920	5,980	6,050	6109	186	0.19%
Strathroy-Caradoc	21,597	22,610	23,550	24,580	25660	4063	0.86%
Thames Centre	13,653	13,960	14,460	14,970	15534	1881	0.74%
Middlesex County	74,059	76,890	80,240	83,770	87,729	13,670	0.87%

*2036 numbers are an extrapolation of the ELNS numbers using a straight-line growth rate

Geometric Projection Technique

A geometric projection technique was used to project growth based upon a constant growth rate that was derived from the historic growth rates of each municipality. Essentially, this technique estimates the future population by assuming that the trends of the past twenty years will continue. Although past trends do not always continue without change, they generally provide a reasonable forecast of the future. Table Five is a summary of the geometric projection technique.

Table Five - Geometric Projection for Middlesex County 2016 to 2036

	Population					# of people	
	2016	2021	2026	2031	2036	# of people 2016 to 2036	average growth
Adelaide Metcalfe	3,095	3,086	3,078	3,070	3,062	-33	-0.05%
Lucan Biddulph	4,865	5,057	5,257	5,464	5,680	816	0.84%
Middlesex Centre	17,869	19,354	20,962	22,704	24,591	6,721	1.88%
Newbury	481	495	509	524	539	57	0.60%
North Middlesex	6,572	6,475	6,378	6,283	6,190	-382	-0.29%
Southwest Middlesex	5,920	5,851	5,783	5,716	5,649	-271	-0.23%
Strathroy- Caradoc	21,600	22,577	23,597	24,663	25,778	4,177	0.97%
Thames Centre	13,657	14,062	14,480	14,909	15,352	1,695	0.62%
Middlesex County	74,059	76,957	80,044	83,334	86,840	12,781	0.77%

The geometric projection technique is intended to reflect the growth experienced over the last 20 years. This does however result in some municipalities projected to have a declining population. In order to adjust for this, Table Six is an update of the geometric projection technique that sets an assumed minimum threshold of 0.15% average annual increase for all municipalities.

This small adjustment would result in projected positive growth for all municipalities and would not significantly increase the overall projected population for the County. Planning staff prefer the growth adjusted geometric projection technique (over the non-growth adjusted technique) as it provides a modest positive projection for all municipalities.

Table Six - Geometric Projection for Middlesex County with Growth Adjustment 2016 to 2036

	Population					# of people	
	2016	2021	2026	2031	2036	# of people 2016 to 2036	average growth
Adelaide Metcalfe	3,095	3,118	3,141	3,165	3,189	94	0.15%
Lucan Biddulph	4,865	5,057	5,257	5,464	5,680	816	0.84%
Middlesex Centre	17,869	19,354	20,962	22,704	24,591	6,721	1.88%
Newbury	481	495	509	524	539	57	0.60%
North Middlesex	6,572	6,622	6,672	6,722	6,772	200	0.15%
Southwest Middlesex	5,920	5,965	6,010	6,055	6,100	180	0.15%
Strathroy- Caradoc	21,600	22,577	23,597	24,663	25,778	4,177	0.97%
Thames Centre	13,657	14,062	14,480	14,909	15,352	1,695	0.62%
Middlesex County	74,059	77,249	80,627	84,206	88,001	13,941	0.94%

Ontario Ministry of Finance Projections

The Ontario Ministry of Finance undertook population projections for the Province in 2011 and updated those numbers last year to reflect the 2016 Census. The Ministry of Finance numbers are for the Census Division which includes Middlesex County with the City of London and also does not provide a breakdown by local municipality.

In order to split out the County's population from the City of London, the historic percentage of the County's population within the Census Division was examined. Over the past 20-years Middlesex has represented approximately 16 percent of the Census Division and therefore that same split of population was projected forward.

To further break down the Ontario Ministry of Finance projections for each local municipality, a straight-line growth rate was utilized where each municipality's share of the County population was calculated based upon their percentage of the total population. This was undertaken to recognize that growth within the County is not occurring at the same rate within all municipalities such that the percentage of each municipality's share of the population does not remain constant.

Table Seven is a summary of the calculated Ministry of Finance Population Projections. Overall, the Ministry of Finance numbers are the highest of the projection techniques examined and, based upon the local municipal allocation method utilized, provides a positive projection for each municipality.

Table Seven – Calculated Ministry of Finance Population Projections for Middlesex County 2016 to 2036

	Population					Change	
	2016	2021	2026	2031	2036	# of people 2016 to 2036	average growth
Adelaide Metcalfe	3095	3284	3309	3317	3303	208	0.34%
Lucan Biddulph	4865	5378	5648	5901	6124	1259	1.29%
Middlesex Centre	17869	20430	22324	24262	26197	8328	2.33%
Newbury	481	523	543	561	575	94	0.98%
North Middlesex	6572	6869	6834	6763	6648	76	0.06%
Southwest Middlesex	5920	6191	6177	6129	6042	122	0.10%
Strathroy-Caradoc	21600	23900	25218	26463	27590	5989	1.39%
Thames Centre	13657	14825	15397	15904	16321	2664	0.98%
Middlesex County	74,059	81,400	85,450	89,300	92,800	18741	1.27%

*larger increase 2016 to 2021 due to Provincial 2016 base being higher than Census 2016 numbers

Projected Household Size

As noted above, the average household size / persons per unit (PPU) has steadily decreased across the County. Using a straight-line projection, it is anticipated that the PPU will continue to decline within the County over the next twenty-years such that it is projected to fall to 2.3 PPU by 2036. This is in-line with Provincial and nearby municipal projections. Table Eight is a summary of the County-wide projected PPU.

Table Eight - Projected Household Size (PPU) for Middlesex County 2016 to 2036

2016	2021	2026	2031	2036
2.63	2.55	2.47	2.38	2.30

Conclusion

Five projection methods were examined in support of this report including the Ministry of Finance, Employment Land Needs Study, Geometric, Geometric Adjusted and Cohort Survival techniques. Table Nine summarizes the various projected populations for 2036 by municipality.

Table Nine – Summary of Population Projections for Middlesex County 2016 to 2036

	2016	2036				
	Census	Cohort	ELNS	Geometric Base	Geometric Adjusted	Provincial
Adelaide Metcalfe	3,095	2,998	3,147	3,062	3,189	3,303
Lucan Biddulph	4,865	6,931	5,632	5,680	5,680	6,124
Middlesex Centre	17,866	21,899	24,007	24,591	24,591	26,197
Newbury	482	531	515	539	539	575
North Middlesex	6,574	5,749	7,125	6,190	6,772	6,648
Southwest Middlesex	5,923	5,557	6,109	5,649	6,100	6,042
Strathroy-Caradoc	21,597	21,394	25,660	25,778	25,778	27,590
Thames Centre	13,653	14,710	15,534	15,352	15,352	16,321
Middlesex County	74,059	79,769	87,729	86,840	88,001	92,800

After reviewing the various projection techniques, planning staff would recommend that a ranged approach to the projections be used for planning purposes. The low population projection could be based upon the Geometric Projection with Growth Adjustment and the high population projection could be based upon the Calculated Ministry of Finance Population Projections.

The ranged approach would provide the County and the local municipalities with some flexibility to select projections that suit local purposes while maintaining positive projections for all municipalities. Table Ten summarizes the resultant Population Projection Range for 2016 to 2036.

Table Ten - Middlesex County Projected Population Range 2016 to 2036

	Population									Change			
	2016	2021		2026		2031		2036		# of people 2016 to 2036		Average Growth	
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
Adelaide Metcalfe	3,095	3,120	3280	3,140	3310	3,170	3320	3,190	3300	100	210	0.15%	0.34%
Lucan Biddulph	4,865	5,060	5380	5,260	5650	5,460	5900	5,680	6120	820	1,260	0.84%	1.29%
Middlesex Centre	17,869	19,350	20430	20,960	22320	22,700	24260	24,590	26200	6,720	8,330	1.88%	2.33%
Newbury	481	500	520	510	540	520	560	540	580	60	100	0.60%	0.98%
North Middlesex	6,572	6,620	6870	6,670	6830	6,720	6760	6,770	6650	200	80	0.15%	0.06%
Southwest Middlesex	5,920	5,960	6190	6,010	6180	6,050	6130	6,100	6040	180	120	0.15%	0.10%
Strathroy-Caradoc	21,600	22,580	23900	23,600	25220	24,660	26460	25,780	27590	4,180	5,990	0.97%	1.39%
Thames Centre	13,657	14,060	14820	14,480	15400	14,910	15900	15,350	16320	1,690	2,660	0.62%	0.98%
Middlesex County	74,059	77,250	81400	80,630	85450	84,210	89300	88,000	92800	13,940	18,740	0.94%	1.27%

Building upon the Projected Population Range, the anticipated number of housing units as a result of the anticipated population growth can be estimated by taking the Projected Population from Table Ten and dividing by the Projected Household Size PPU from Table Eight. The results are summarized in Table Eleven. It is noted that the forms that the households will take (single-detached, attached, apartments, etc) will vary from municipality to municipality.

Table Eleven - Middlesex County Household Projection Range 2016 to 2036

	Households									Change	
	2016	2021		2026		2031		2036		# of households 2016 to 2036	
		Low	High	Low	High	Low	High	Low	High	Low	High
Adelaide Metcalfe	1045	1220	1290	1270	1340	1330	1390	1390	1430	345	385
Lucan Biddulph	1837	1980	2110	2130	2290	2290	2480	2470	2660	633	823
Middlesex Centre	6139	7590	8010	8490	9040	9540	10190	10690	11390	4551	5251
Newbury	184	200	200	210	220	220	240	230	250	46	66
North Middlesex	2399	2600	2690	2700	2770	2820	2840	2940	2890	541	491
Southwest Middlesex	2505	2340	2430	2430	2500	2540	2580	2650	2630	145	125
Strathroy-Caradoc	8455	8850	9370	9550	10210	10360	11120	11210	12000	2755	3545
Thames Centre	5162	5510	5810	5860	6230	6260	6680	6670	7100	1508	1938
Middlesex County	27726	30290	31910	32640	34600	35360	37520	38250	40350	10524	12624

In summary, it is recommended that Council endorse a Projected Population Range and a Household Projection Range as being the most likely to represent the future population for Middlesex County and that they be included during the consultation phase of a future amendment to the County Official Plan.

Finally, it is recognized that the projections should be reviewed again in a couple of years to evaluate if the recent upswing in development continues and therefore requires an adjustment to the anticipated population.

RECOMMENDATION:

That the ‘Middlesex County Household Projected Population Range 2016 to 2036’ and the ‘Middlesex County Household Projection Range 2016 to 2036’ be selected as the growth scenario that is most likely to occur over the 20-year planning horizon and that this be included in the draft amendment to the County Official Plan for the purposes of consultation.

Table Ten - Middlesex County Projected Population Range 2016 to 2036

	Population									Change			
	2016	2021		2026		2031		2036		# of people 2016 to 2036		Average Growth	
		Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
Adelaide Metcalfe	3,095	3,120	3280	3,140	3310	3,170	3320	3,190	3300	100	210	0.15%	0.34%
Lucan Biddulph	4,865	5,060	5380	5,260	5650	5,460	5900	5,680	6120	820	1,260	0.84%	1.29%
Middlesex Centre	17,869	19,350	20430	20,960	22320	22,700	24260	24,590	26200	6,720	8,330	1.88%	2.33%
Newbury	481	500	520	510	540	520	560	540	580	60	100	0.60%	0.98%
North Middlesex	6,572	6,620	6870	6,670	6830	6,720	6760	6,770	6650	200	80	0.15%	0.06%
Southwest Middlesex	5,920	5,960	6190	6,010	6180	6,050	6130	6,100	6040	180	120	0.15%	0.10%
Strathroy-Caradoc	21,600	22,580	23900	23,600	25220	24,660	26460	25,780	27590	4,180	5,990	0.97%	1.39%
Thames Centre	13,657	14,060	14820	14,480	15400	14,910	15900	15,350	16320	1,690	2,660	0.62%	0.98%
Middlesex County	74,059	77,250	81400	80,630	85450	84,210	89300	88,000	92800	13,940	18,740	0.94%	1.27%

Table Eleven - Middlesex County Household Projection Range 2016 to 2036

	Households									Change	
	2016	2021		2026		2031		2036		# of households 2016 to 2036	
		Low	High	Low	High	Low	High	Low	High	Low	High
Adelaide Metcalfe	1045	1220	1290	1270	1340	1330	1390	1390	1430	345	385
Lucan Biddulph	1837	1980	2110	2130	2290	2290	2480	2470	2660	633	823
Middlesex Centre	6139	7590	8010	8490	9040	9540	10190	10690	11390	4551	5251
Newbury	184	200	200	210	220	220	240	230	250	46	66
North Middlesex	2399	2600	2690	2700	2770	2820	2840	2940	2890	541	491
Southwest Middlesex	2505	2340	2430	2430	2500	2540	2580	2650	2630	145	125
Strathroy-Caradoc	8455	8850	9370	9550	10210	10360	11120	11210	12000	2755	3545
Thames Centre	5162	5510	5810	5860	6230	6260	6680	6670	7100	1508	1938
Middlesex County	27726	30290	31910	32640	34600	35360	37520	38250	40350	10524	12624