

***Sir John A.  
Macdonald S.S. &  
Kitchener-Waterloo  
C. & V.S. Boundary  
Study***

**Waterloo Region District School Board**

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# Sir John A. Macdonald S.S. and Kitchener-Waterloo C. & V.S. Boundary Study

## Waterloo Region District School Board

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### EXECUTIVE SUMMARY

The Waterloo Region District School Board's (WRDSB/Board) jurisdiction is varied and encompasses a large geographic area including the urban centres of Kitchener, Waterloo and Cambridge as well as the surrounding Townships of Wilmot, Woolwich, Wellesley and North Dumfries. The Region has experienced significant growth over the past 50 years and today as the Region continues to grow, development patterns and location of growth has changed.

From the 1950's to the late 1970's, the City of Kitchener accounted for more than half of all housing development in the Region, compared to just below 40% from the early 80's to the present. The City of Waterloo accounted for less than 18% of housing growth from the 50's to the 70's but more than 26% post 1980. In addition to changing settlement patterns, there has also been a marked shift in population moving away from urban city centres. Historically, most of the population growth pre-1970's/80's occurred in dense developments in close proximity to the city centre. In the last few decades, population growth has moved outside city centres to the suburbs and many city centres are in decline and have aging populations.

This presents a challenge to the Board to continue serving an increasing and mobile population with schools that are geographically fixed. Ideally, secondary school boundaries would be located centrally to the communities they serve. This approach has the dual effect of creating a natural boundary around the school based on the neighbourhoods it serves, as well as reducing the need for transportation. In reality however, the majority of schools in the system were built and located to accommodate historical population and settlement patterns, thus limiting the options available for the school board when development patterns change.

In the City of Waterloo, traditional residential subdivision development is starting to decline as the City is running out of Greenfield lands and approaches the edge of the built boundary. Recent residential development has been primarily confined to the north-west section of Waterloo in the attendance boundary of Sir John A. Macdonald (SJAM) secondary school. In addition, residential growth projections



and development plans for the City continue to forecast residential growth in this area both in the short and long term. There are currently 3 major subdivisions within SJAM's boundary in a draft approved stage with more than 1,600 residential units projected to be built and total population in the boundary expected to increase by almost 48% by 2021.

SJAM was opened in September 2004 with enrolment of just over 1,110 and a Ministry rated On-The-Ground (OTG) capacity of 1,548. Enrolment has increased to approximately 1,550 students since the school opened and 3 portables are necessary to fully accommodate enrolment (largely due to specialized programs and classes). Due to continued residential growth in the area as well as demographics that suggest the area has a young and growing population, enrolment at the school is expected to increase in the mid to long term with potentially serious enrolment pressures at the facility in the next 7-10 years.

A Board-wide secondary boundary review was completed in 2009/10 that looked at the school system as a whole and identified accommodation issues and considered the impact of boundary changes across the jurisdiction. The main objectives of the study were to:

- To determine the effectiveness of current boundaries in terms of serving "local" populations and achieving a balanced school population to support the delivery of the core program;
- To identify accommodation issues, both existing and projected; and,
- To recommend changes to the existing boundaries in order to maximize the number of students who can walk to school and to address issues identified as a result of the objectives highlighted above.

As part of that secondary school boundary review, accommodation issues were identified at SJAM and a recommendation was made to consider a boundary change to alleviate enrolment pressures at the school. The viability of a boundary change to reduce enrolment at SJAM is dependent on available secondary school space nearby. Examining secondary schools surrounding SJAM identified Kitchener-Waterloo Collegiate & Vocational Institute (KCI) as a candidate for a boundary change.



KCI's boundary is adjacent to SJAM's boundary and the two schools are located approximately 9 km's from each other. An area in the southern end of SJAM's boundary identified as Westvale is approximately the same distance from both secondary schools. The Westvale area lies outside the walking area of both secondary schools and students who reside there would be eligible for transportation regardless of which secondary school they would attend.

The total population in KCI's boundary remained largely stable from 2001 to 2006 however the elementary school aged population declined by more than 15%. In addition, the pre-school aged population (0-3) declined by almost 7%. The declines in the both the pre-school and elementary aged population are likely to lead to future declines in the secondary school aged population in the boundary and contribute to future secondary enrolment decline.

Between 2004/05 and 2009/10, enrolment at KCI declined by more than 24% or 372 students. According to the Board's projections, enrolment decline is expected to continue over the next 10 years. The projections estimate a drop of almost 10% by 2014 and an additional 4% decline beyond 2014, with enrolment hovering just above 1,000 by 2020/21. Based on the school's OTG capacity of 1,578 this would result in a utilization rate of approximately 64% in 2020/21 or 567 available spaces.

Considering the aforementioned objectives of the original Board-wide boundary review, a boundary change between SJAM and KCI is recommended. The boundary change would reduce enrolment pressures at SJAM thereby reducing the need for temporary space and provide greater flexibility in scheduling and timetabling of classes. All but a small portion of SJAM's boundary would fall within the school's walking zone. The boundary change would serve to increase the number of students at KCI allowing the school to continue offering a comprehensive regular program to compliment its specialized programs.



## 1.0 INTRODUCTION AND METHODOLOGY

The purpose of this study is to provide an independent and objective review of the issues facing SJAM and provide recommendations to address those issues. Using school specific data with respect to enrolment, size, condition, program and utilization as well as area demographic trends and projected enrolments, accommodation issues were identified at SJAM. The boundary study and accommodation recommendations draw upon comprehensive background information to support trends that characterize the school and its boundary. The review contained herein, incorporated data such as;

- 10 year Board prepared enrolment projections;
- Ministry rated capacities of permanent and temporary space to determine school utilization of space;
- Identification of major growth areas and expected long term populations consistent with new City of Waterloo growth forecasts;
- Historical trends of relevant demographic data.

The methodology with regard to this particular school boundary study had two distinct components; the first was to analyze and compare existing and projected school enrolment with existing and future space requirements and program/grade configurations. The second component involved making observations, identifying issues, and determining a possible accommodation strategy.

In summary, the following information was considered to identify issues and provide the related accommodation strategies.

- Demographic characteristics of SJAM and KCI secondary school boundaries;
- Facility data (age, size etc.);
- Space requirements both for existing and projected enrolment (Ministry capacities and functional capacities);
- Use of permanent and temporary space;
- Review of program and attendance patterns of where students reside.

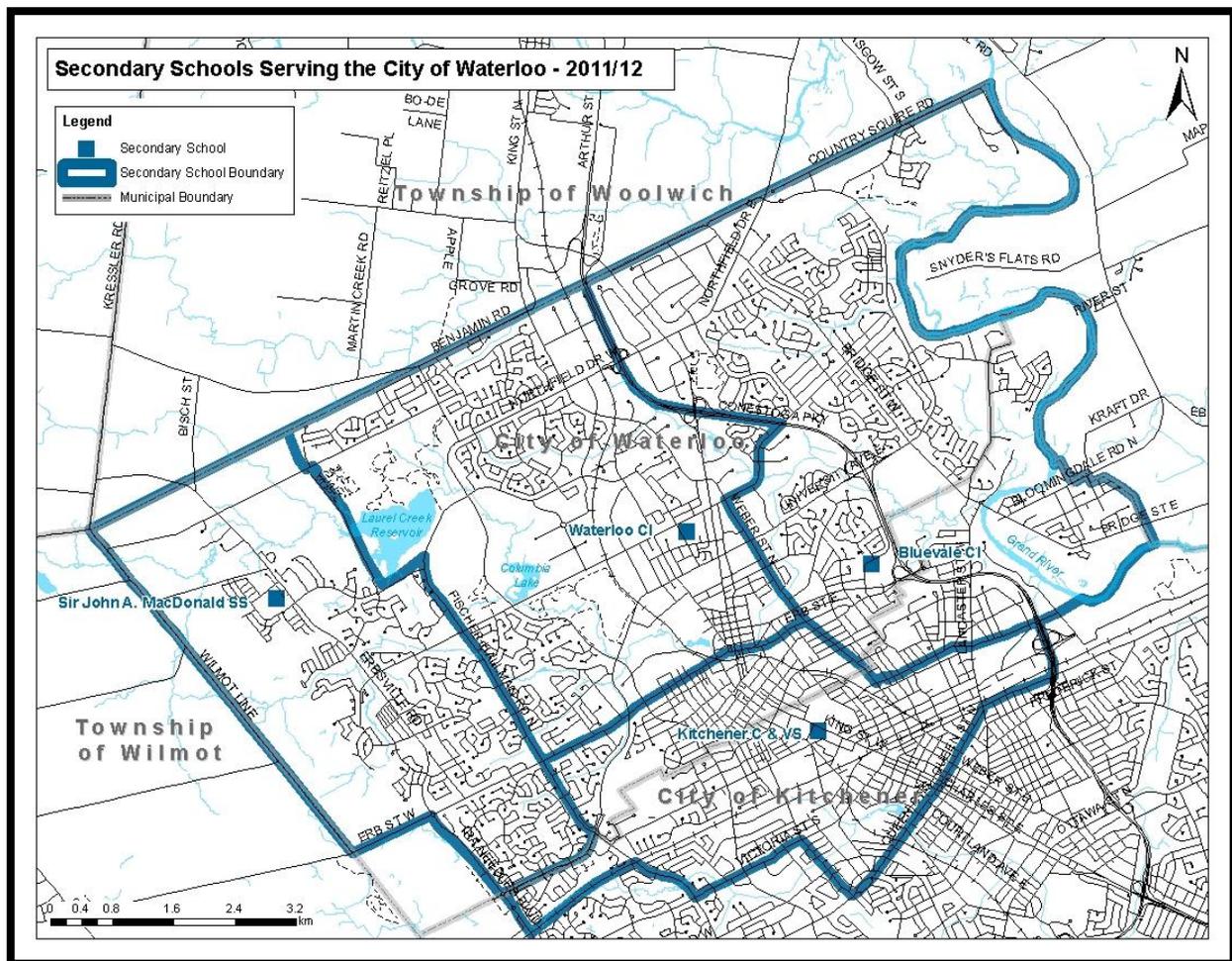


## 2.0 OBSERVATIONS AND RECOMMENDATIONS

### BACKGROUND

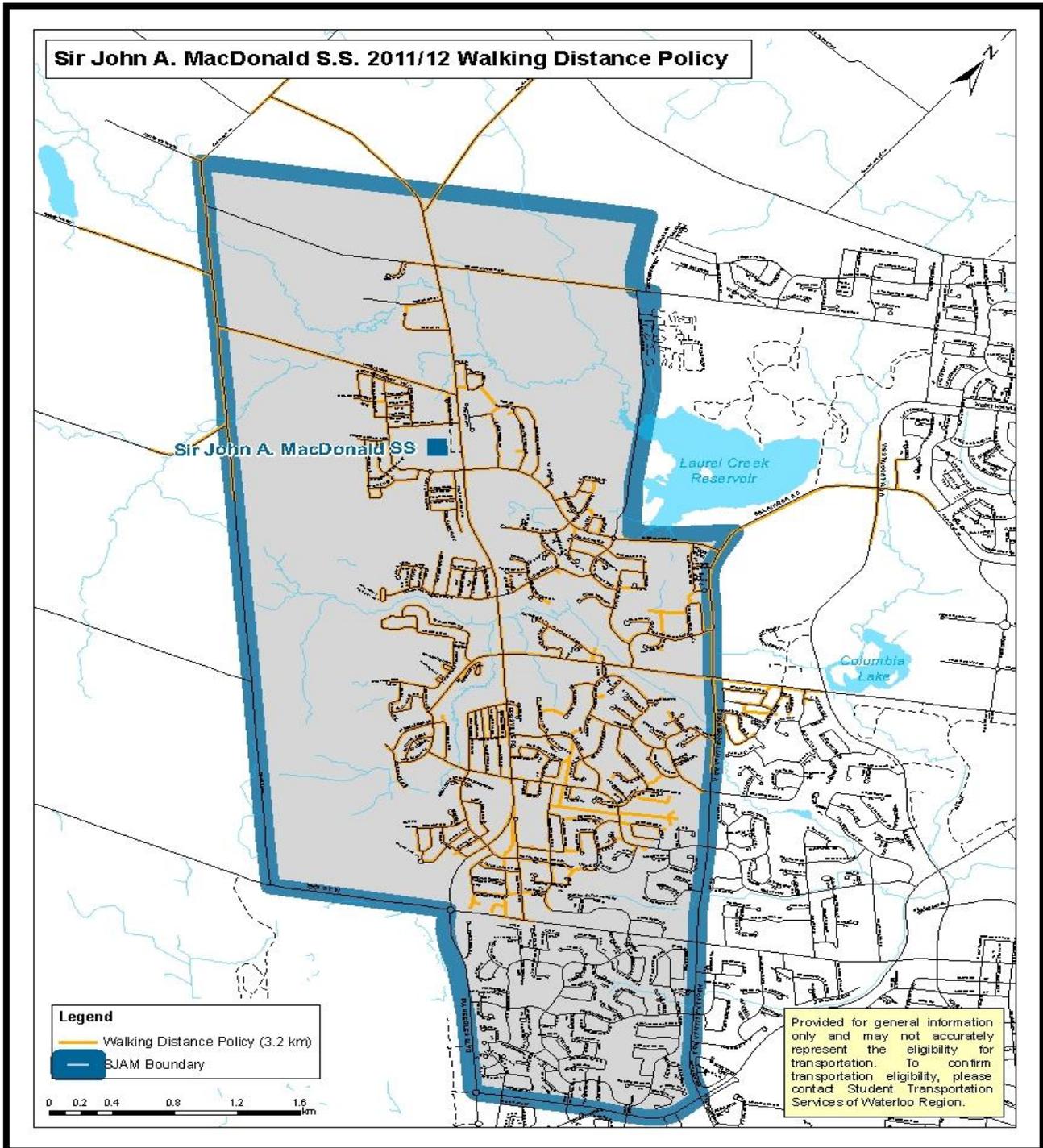
The WRDSB operates 4 secondary schools that service the City of Waterloo – Sir John A. Macdonald Secondary School, Waterloo Collegiate Institute, Bluevale Collegiate Institute and Kitchener-Waterloo Collegiate & Vocational Institute (see Map 1 below). Sir John A Macdonald is one of the Board’s newest secondary schools and was opened in 2004. It is the Board’s 3<sup>rd</sup> largest facility at just over 19,000 square metres and also the 3<sup>rd</sup> largest in terms of total capacity with an On-The-Ground (OTG) capacity of 1,548 spaces. Enrolment in 2010 was approximately 1,563 which is just over the school’s OTG capacity and results in a utilization rate of 101%. It should be noted however, that because of certain programs and specialized space requirements at the school it is necessary to utilize three portable classrooms (portables) to accommodate total enrolment.

MAP 1 – WRDSB SECONDARY SCHOOLS IN THE CITY OF WATERLOO



The majority of SJAM's boundary falls within the school's walking zone and as such more than 80% of the students that attend the school do not require transportation (Map 2). This compares with about 77% of secondary students Board-wide who live within the walking areas of their school and about 80% of secondary students in the City of Waterloo.

MAP 2 – SJAM WALKING ZONE (Highlighted Streets Are Within Walking Zone)



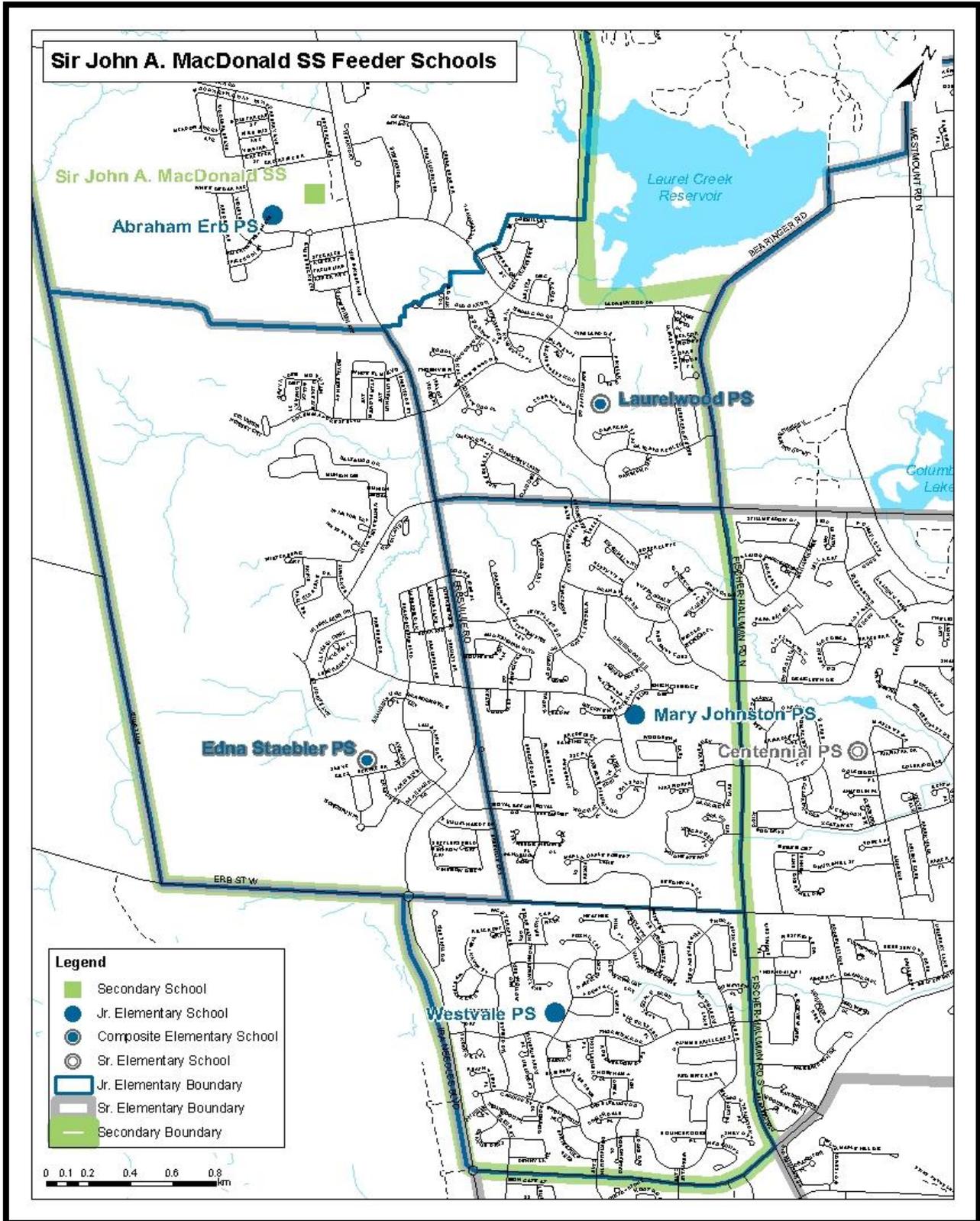
According to Board information, more than 83% of the school's enrolment comes from within its current attendance boundary. In total about 250 students attend SJAM from out of boundary and 335 students that live in the school's boundary attend other WRDSB secondary schools resulting in a net loss of about 85 students. Of the 335 students who live in SJAM's boundary but attend other schools, approximately 200 or almost 60% attend Waterloo Collegiate Institute.

The school opened in 2004 with enrolment of 1,136 which increased rapidly to over 1,500 by 2006/07. Since 2006/07 enrolment has stabilized somewhat and has averaged approximately 1,565 students per year. The Board projects that enrolment will remain stable in the short-term, however in the mid to longer term significant increases are expected, with enrolment projected to exceed 1,800 by 2018/19.

SJAM has 5 elementary schools in its school boundary – Abraham Erb P.S (JK-6), Laurelwood P.S (JK-8), Edna Stabler P.S (JK-8), Mary Johnston P.S (JK-6) and Westvale P.S (JK-6). Although Centennial P.S is not within SJAM's boundary, a portion of its boundary overlaps with the SJAM boundary. Grade 8 students that feed into SJAM come primarily from Laurelwood P.S, Edna Stabler P.S and Centennial P.S. Map #3 on the following page outlines the location and boundary of the elementary schools in SJAM's boundary.



MAP 3 – SJAM FEEDER SCHOOLS



## DEMOGRAPHIC TRENDS

The total population in SJAM's boundary grew by just below 29% between 2001 and 2006 compared with the Board's jurisdiction-wide population increase of 8.8%. The population increase in this boundary was one of the highest population increases of any secondary school boundary in the jurisdiction and second only to the population increase of 31.4% in Huron Heights Secondary School's boundary which is located in one of Kitchener's primary new residential development areas. Over the same time period the elementary aged population in SJAM's boundary experienced double digit increases of more than 11% while Board-wide the elementary population declined by 1%. The secondary school aged population also experienced significant increases in this boundary of almost 27% compared with 8% Board-wide.

Throughout the first part of the decade in several areas of Ontario, the largest grade cohorts were in the senior elementary system. As these students left, the elementary system experienced a decline in enrolment while the secondary system experienced increases. Today, as the smaller elementary cohorts begin to enter the secondary system and the larger cohorts exit, we are starting to see the impact on the secondary system overall. While this holds true in many parts of the Board's jurisdiction, it does not in SJAM's boundary – high levels of residential development and population growth suggest that its future secondary school aged populations should continue to increase.

In addition to examining the elementary and secondary aged populations, it is vital to look at the pre-school aged population (0-3 years) and the population of females aged 25-44. The pre-school group is important because it is used as an indicator of what is expected to happen to the school aged population in the short to mid-term. The pre-school population is the cohort that will be entering the school system in the next few years. Board-wide the pre-school population increased by 6% between 2001 and 2006 and in SJAM's boundary the increase was almost 27%. In addition, the females aged 25-44 (which are women in the prime child bearing years) also increased by more than 17% compared with 2.5% Board-wide. These important indicators when combined with potential for future residential development suggest that SJAM's boundary will continue to see increases in both the elementary and secondary age groups. Population trends by age cohort can be found in Table 1.



**TABLE 1 – SJAM BOUNDARY POPULATION CHANGE**

<b>Population Data – SJAM Boundary</b>	<b>2001 Census</b>	<b>2006 Census</b>	<b>Absolute Change</b>	<b>Percentage Change</b>
<b>Total Population</b>	<b>18,031</b>	<b>23,173</b>	<b>5,143</b>	<b>28.5%</b>
Pre-School Population (0-3)	1,045	1,321	<b>277</b>	<b>26.5%</b>
Elementary School Population (4-13)	3,304	3,676	<b>372</b>	<b>11.3%</b>
Secondary School Population (14-18)	1,519	1,923	<b>405</b>	<b>26.6%</b>
Population Over 18 Years of Age	12,164	16,253	<b>4,090</b>	<b>33.6%</b>

Source: Statistics Canada Census, 2001 & 2006

According to the Canadian Census there were almost 1,700 new occupied dwellings in SJAM’s boundary between 2001 and 2006 – an increase of more than 29%. This was the highest increase of dwelling units in the Board’s jurisdiction and compares with a 10% increase in residential dwellings Board-wide. While the increase in units and aforementioned demographic trends are all positive signs, it must be noted that population per dwelling is in decline, reducing the number of students we can expect from each unit – this is otherwise referred to as the student yield. In 2001 there were 0.57 children aged 4-13 per household and in 2006 this declined to 0.49 – a drop of almost 14% (see Table 2).

**TABLE 2 – SJAM BOUNDARY DWELLINGS AND POPULATION PER DWELLING**

<b>Dwelling Unit Data</b>	<b>2001 Census</b>	<b>2006 Census</b>	<b>2001 - 2006</b>	
			<b>Change</b>	<b>%</b>
<b>Total Occupied Dwellings:</b>	5,791	7,480	<b>1,689</b>	<b>29.2%</b>
<b>Total Population/Dwelling:</b>	3.11	3.10	<b>(0.02)</b>	<b>-0.5%</b>
<b>Elementary Population/Dwelling:</b>	0.57	0.49	<b>(0.08)</b>	<b>-13.9%</b>
<b>Secondary Population/Dwelling:</b>	0.26	0.26	<b>(0.01)</b>	<b>-2.0%</b>

Source: Statistics Canada Census, 2001 & 2006



## HISTORICAL ENROLMENT

SJAM opened in 2004 with enrolment of 1,136 and that number increased significantly over the next two years to over 1,500 by the 2006/07 school year. Since then enrolment has remained somewhat stable in the mid 1,500 range, with the average being 1,557 from 2006/07 to 2010/11. Table 3 summarizes enrolment at the school, by grade, from 2004/05-2010/11.

TABLE 3 – SJAM HISTORICAL ENROLMENT

HISTORICAL ENROLMENT							
GRADES	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011
9	373	350	350	316	344	337	328
10	297	359	371	354	328	351	342
11	257	285	366	384	356	345	352
12	209	366	441	530	535	530	523
<b>Total</b>	<b>1,136</b>	<b>1,360</b>	<b>1,528</b>	<b>1,584</b>	<b>1,563</b>	<b>1,563</b>	<b>1,545</b>

Source: WRDSB

An important measure when examining historical enrolment is the grade structure ratio (GSR). The GSR compares the number of students entering a school compared with the number of students leaving a school. The number of grade 9 students at SJAM has fluctuated between a high of 373 when the school opened to a low of 316 in 2007/08. For the most part it has remained in the mid 300 range, averaging just below 340 over the past 5 years.

As enrolment has moved from grade to grade it has mostly maintained a positive retention which is typical of a new school in a growth area. The number of students graduating/leaving the system (grade 12's) has increased since the opening of the school. This is attributed to a number of factors – one being that many students in the later grades may not have transferred to the new school when it opened, choosing instead to finish their secondary education at the facility they were currently attending. In addition, OAC's/Grade 13 was eliminated in 2003/04 and secondary school curriculum was changed to a 4 year program for secondary. As a result there are a percentage of students that return for grade 12



either to upgrade/take additional courses for post secondary education or to complete the 4 year program in an extended time frame. If we examine the ratio of grade 12's from 2007/08 to 2009/10 compared with the grade 9's that entered the system 4 years earlier we get the following:

<b>Grade 9 - 2004/05, 2005/06, 2006/07</b>	<b>373</b>	<b>350</b>	<b>350</b>
<b>Grade 12 - 2007/08, 2008/09, 2009/10</b>	<b>530</b>	<b>535</b>	<b>530</b>
<b>Ratio</b>	<b>1.42</b>	<b>1.53</b>	<b>1.51</b>

The ratio of grade 12's to grade 9's entering the system 4 years previous has averaged 1.49 for the last 3 years and has remained somewhat stable and is consistent with the stability in the overall enrolment trends. The number of returning grade 12's has fluctuated considerably from school board to school board in Ontario and even from school to school within a board. At SJAM over the last 4 years, the retention rate from grade 11 to 12 has averaged 1.48. It was as high as 1.54 in 2006/07 and then declined to 1.39 in 2008/09 before increasing again in 2009/10 to 1.48.

Another important factor when examining historical enrolment is enrolment share or participation rates. If we think of the total region-wide elementary and secondary population as pies, then the enrolment share or participation rate is each school board's share of that pie. The 2006 census identified 1,923 14-18 year olds that reside in SJAM's boundary, while enrolment at the school in 2006 was 1,528. This accounts for a 79.5% share of the secondary school aged population. The balance of the secondary school aged population is presumed to attend co-terminus school boards, private schools, is home schooled or no longer attends school.

**TABLE 4 - SJAM ENROLMENT SHARE**

	<b>2001</b>	<b>2006</b>	<b>Difference</b>
<b>Total Secondary Enrolment - Headcount</b>	0	1,528	1,528
<b>Total Secondary Aged Population</b>	1,519	1,923	405
<b>Secondary Participation Rates</b>	0.0%	79.5%	79.5%

Source: Statistics Canada and WRDSB

Since the school was not open in 2001 it is not possible to examine what the enrolment share was at that time or how it has changed historically. However, the 79.5% share of the secondary population is significantly higher than the Board-wide secondary population share of just below 62% and is also one of the highest shares in the Board's jurisdiction. This may be attributable, in part, to the fact that the co-terminus school board does not have a secondary school presence within SJAM's boundary.



## PROJECTED ENROLMENT

Enrolment projections for this study were provided by the WRDSB up to the 2020/21 school year. The enrolment projections are based on a historical retention rate methodology and three scenarios were prepared based on 1, 2 and 4 year historical retention rates. This study used the projections based on the 2 year historical retention rate. According to the Board's projections, enrolment at SJAM is expected to remain stable to slightly decreasing in the immediate short term (approximately a -7% decline to year 5). Beyond year 5, enrolment is projected to increase significantly over a short time. Between 2015/16 and 2020/21 enrolment is expected to increase by almost 639 students or 45%. Enrolment projections for SJAM by year and grade are found in Table 5 below.

TABLE 5 – SJAM PROJECTED ENROLMENT

	Current	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
GRADES	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015	2015/ 2016	2016/ 2017	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021
9	328	338	293	327	324	301	330	352	437	506	548
10	342	334	344	298	333	330	306	335	358	445	515
11	352	351	343	353	306	342	339	315	344	368	457
12	523	529	528	515	530	460	514	510	473	518	553
<b>Total</b>	<b>1,545</b>	<b>1,552</b>	<b>1,507</b>	<b>1,494</b>	<b>1,494</b>	<b>1,434</b>	<b>1,489</b>	<b>1,511</b>	<b>1,613</b>	<b>1,837</b>	<b>2,073</b>
<b>% Change</b>		0.4%	-2.9%	-0.9%	0.0%	-4.1%	3.9%	1.5%	6.7%	13.9%	12.9%

Source: WRDSB



## DEVELOPMENT TRENDS AND PROJECTED POPULATION

The City of Waterloo as a whole is approaching build out and any future development is expected to consist largely of infill and intensification projects. The exception to this, is the area within SJAM's boundary, which still contains Greenfield development lands. Greenfield lands typically consist of lower density development, which is more likely to attract families with school aged children.

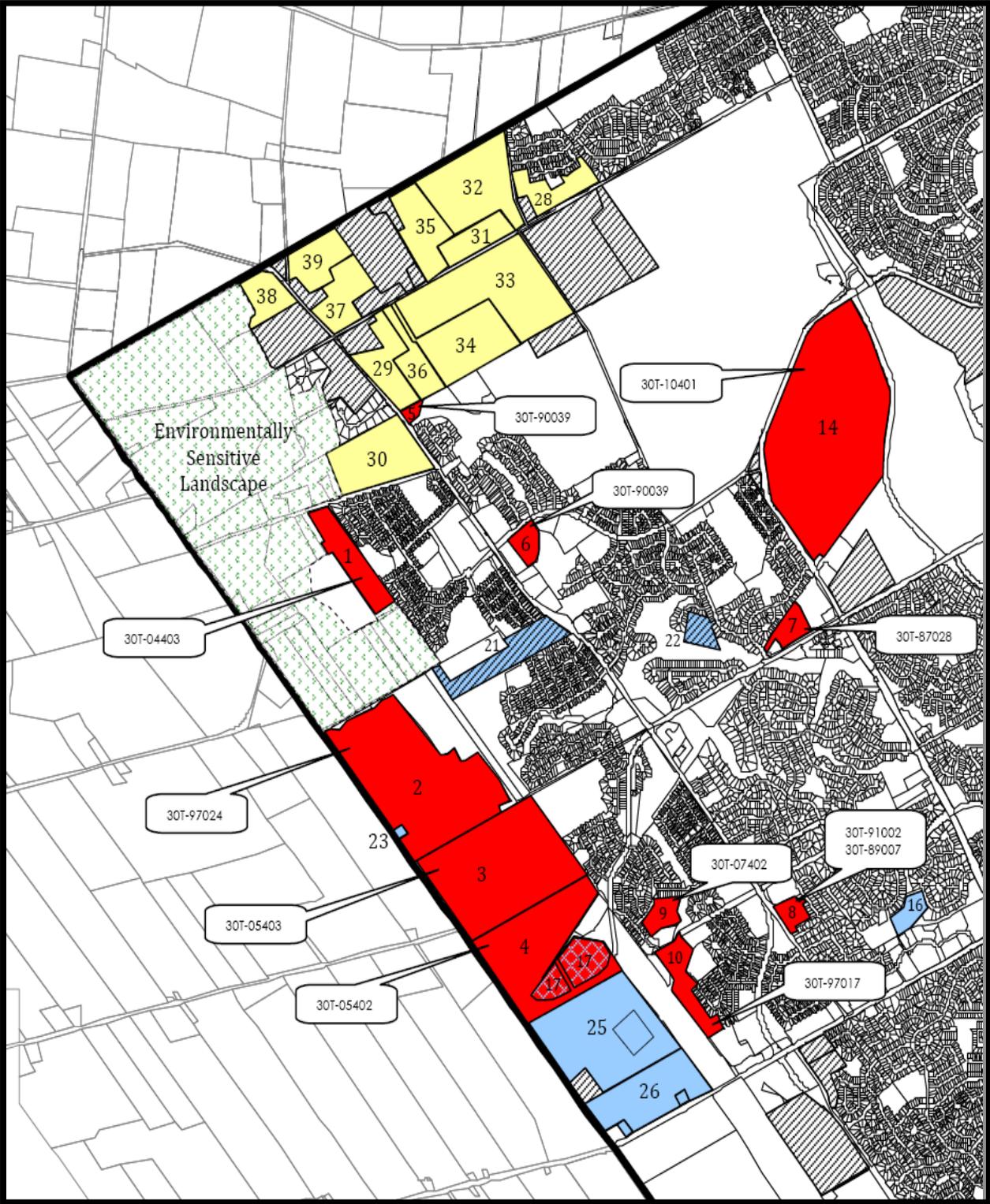
According to information provided by the City of Waterloo in its *'Staging of Development Report 2011-2014'*, there are approximately 39 parcels of land identified for future development. These 39 parcels are in various stages of the development process with some being draft approved and others in draft plans of subdivision or condominiums. The draft approved plans are in a closer stage to being developed whereas draft plans of subdivision or condominium still have certain conditions to be met and are identified to be developed in a later time frame.

Of the 39 parcels that were identified, approximately 28 are in SJAM's boundary and of these 11 are in the draft approved stage of the development process. Three of the largest remaining development parcels in the City are located in close proximity to SJAM and are known as the West Side Subdivisions. In total, these 3 subdivisions (Vista Hills, Clair Creek Meadows and Greyerbiehl) comprise more than 1,600 residential units that have been draft approved.

Map 4 on the following page shows the parcels of developable land in Northwest Waterloo in close proximity to SJAM. Parcels 2, 3 and 4 are the 3 major subdivisions referenced above and all parcels in red are in the draft approval stage of the development process.



MAP 4 – CITY OF WATERLOO STAGING OF DEVELOPMENT



According to data from Statistics Canada, the average secondary yield (number of secondary students per residential unit) in SJAM's boundary is approximately 0.26. The Board's share of the population in this boundary is 79.5% and by utilizing the average secondary yield and Board share, the resulting Board specific yield is approximately 0.207. Applying this yield to the 1,600 units identified in the West Side Subdivision results in more than 300 new secondary students. The ultimate number will depend on other variables such as types of units that will be constructed, density mix, price etc.

If the expected 300 secondary students from new residential development are added to the existing enrolment of approximately 1,550, it results in enrolments of 1,800+. This is consistent with the Board's enrolment projections where enrolment is predicted to be somewhat stable in the short to mid-term (mid 1,500's) and then increasing to over 1,800 in about 8-9 years.

In addition to the residential parcels that are identified for the short to mid-term, there are also lands that have been identified for longer term development potential (many to the north of SJAM and identified in yellow in Map 4). To determine the impact of the longer term development potential in SJAM's boundary, the consultant incorporated the Region of Waterloo's long term growth management population projections into this analysis. The Region has prepared long term population projections to 2031 as part of the Province's Places To Grow plan. The consultant used the planning firm Hemson Consulting Ltd. (who prepared the growth forecast for the Region) to break down the Region's population projections into smaller areas consistent with the WRDSB's secondary school boundaries. In this way long term population projections are available for each secondary school boundary in the Board's jurisdiction.

According to Statistics Canada, the total population in SJAM's boundary in 2006 was approximately 23,000, which was an increase of more than 5,000 people from 2001. The Region's population projections predict that the population in SJAM's boundary will increase by another 3,000 people between 2006 and 2011 and an additional 3,000 people between 2011 and 2016 reaching a population of 29,000. Post 2016, the population is expected to continue increasing with 4,500 new people forecast between 2016 and 2021 and another 6,600 between 2021 and 2031. If the population projections are correct this could mean an increase in population of 26% by 2016 and almost 80% by 2031. The rate of population increase for SJAM's boundary is almost double the rate expected for the Region as a whole.



**TABLE 6 – SJAM BOUNDARY TOTAL POPULATION PROJECTIONS, 2006-2031**

Region of Waterloo Population Projections SJAM Boundary	
Year	Population
2006	23,000
2011	26,000
2016	29,000
2021	34,000
2031	41,000

Source: Hemson Consulting Ltd.

While the total population in SJAM’s boundary is expected to increase significantly, more relevant to the Board for this analysis, are the increases expected in the secondary school aged population. For the purposes of this report, a simplified analysis was conducted to forecast future secondary school aged populations to compare with the Board enrolment projections. By examining historical shares of the secondary aged population compared to the total population as well as WRDSB specific shares of enrolment, an approximate projection of future secondary populations can be derived.

In 2001, the secondary aged population made up 8.4% of the total population in SJAM’s boundary and in 2006 this declined slightly to 8.3%. We know that the elementary population share of the total population has been declining over the past decade (18.3% in 2001 and 15.9% in 2006) and as the elementary population ages, this trend is expected to influence the secondary population as well. To account for the expected decline in the secondary share of the total population, the share of the secondary population for this analysis has been dropped to 8% for 2011, 7.5% for 2016 and 7% for the remainder of the forecast. Based on the aforementioned assumptions and assuming a consistent Board enrolment share of the secondary population of 79.5%, future secondary enrolments can be forecast as follows:



**TABLE 7 – SJAM PROJECTED SECONDARY ENROLMENT BASED ON POPULATION SHARE ASSUMPTIONS**

Region of Waterloo Population Projections SJAM Boundary		Assumed Secondary Share of Population	Projected Total Secondary Population	Projected WRDSB Secondary Enrolment (79.5%)
Year	Population			
2006	23,000	8.3%	1,909	1,518
2011	26,000	8.0%	2,080	1,654
2016	29,000	7.5%	2,175	1,729
2021	34,000	7.0%	2,380	1,892
2031	41,000	7.0%	2,870	2,282

Source: Hemson Consulting Ltd., The Ammendolia Group Ltd.

When comparing the projected enrolment based on the population share analysis with the projected number of students from future residential development and the Board’s enrolment projections, all are fairly consistent in that they predict future enrolment at SJAM in the range of 1,800 in the next 6-9 years. According to the population share analysis, if longer term population projections for the area are realized and assumed secondary shares are approximately correct, projected enrolments at SJAM could be almost 1,900 by 2021 and close to 2,300 by 2031.

## **FACILITY UTILIZATION**

Each open school in the Board’s inventory has a Ministry rated capacity of permanent space associated with it. The capacities used in this study are consistent with the Ministry of Education’s School Facility Inventory System On-The-Ground (OTG) capacities. The school’s enrolment relative to its OTG capacity is known as the utilization rate and it measures the percentage of permanent bricks and mortar space that is occupied by students. Table 8 outlines the OTG capacity of SJAM as well as historical, existing and projected utilization rates consistent with the Board’s enrolment projections.



**TABLE 8 – UTILIZATION OF SJAM'S PERMANENT SPACE**

	2004/ 2005	2006/ 2007	2007/ 2008	2009/ 2010	2010/ 2011	2014/ 2015	2016/ 2017	2018/ 2019	2020/ 2021
	<b>HISTORICAL ENROLMENT</b>				<b>PROJECTED ENROLMENT</b>				
	<b>1,136</b>	<b>1,528</b>	<b>1,584</b>	<b>1,563</b>	<b>1,545</b>	<b>1,494</b>	<b>1,489</b>	<b>1,613</b>	<b>2,073</b>
<b>OTG CAPACITY</b>	<b>UTILIZATION OF PERMANENT SPACE BASED ON OTG CAPACITY</b>								
<b>1,548</b>	<b>73.4%</b>	<b>98.7%</b>	<b>102.3%</b>	<b>101.0%</b>	<b>99.8%</b>	<b>96.5%</b>	<b>96.2%</b>	<b>104.2%</b>	<b>133.9%</b>

Source: WRDSB

The school's utilization rate based on current enrolments is at 100% but is projected to increase to more than 130% by 2020/21. The above utilization analysis, as mentioned, uses the Ministry of Education's rated OTG capacity. However, many schools because of specialized programs or use of classroom space have a functional capacity that is less than the actual OTG capacity. This means that the school can actually accommodate fewer students than the stated capacity. SJAM in no exception and while the utilization analysis suggests that existing enrolment can be accommodated by permanent space, SJAM needs to utilize 3 portables to fully accommodate enrolment. SJAM has specialized programs that reduce the actual capacity of the school such as Fast Forward. The school currently has 155 Fast Forward students whose classrooms are loaded at 16 students rather than the typical 21 students per class. This means that 155 Fast Forward students require approximately 10 classrooms compared with almost 8 classrooms loaded with 21 students. The school also has specialized classrooms used for art, music, computers etc. and classroom use/timetable requirements that can also contribute to a lower functional capacity.

It would be more accurate to assume, based on the need for three portables, that the facility is currently operating at least 3 classrooms over its permanent capacity. Therefore the functional capacity of the facility for this analysis is assumed to be 1,485 [1,548 – 63 (3 classrooms loaded at 21)=1,485].

Using the assumed functional capacity of the facility, by 2018/19 when enrolment is predicted to reach 1,600+ the facility will be operating at approximately 7 classrooms over capacity and by 2020/21 if enrolment reaches the projected 2,073 it will operate at 28 classrooms over capacity.



## IDENTIFIED ISSUES AND RECOMMENDED STRATEGY

Enrolment at SJAM is expected to remain stable in the short term but increase in the mid to longer term due in part to projected new housing developments forecast in the school's boundary. Enrolment is currently above the functional capacity of the school and a portion of enrolment must be accommodated in temporary space (portables).

By the end of the Board's enrolment forecast (2020/21), it is projected that more than 25% of enrolment at the school will need to be accommodated in temporary space should the permanent capacity remain fixed. Thus, there are two issues facing this school – one is addressing the mid-term enrolment pressures that are expected and the other is to consider the longer term implications of future residential growth. The objective of the strategy is to ensure there is adequate space to accommodate long term enrolments, to provide a natural school boundary and maximize the number of students who can walk to school, while keeping accommodation in temporary space within reasonable levels.

### ISSUES:

- ❖ Enrolment expected to remain stable in the short term with increases expected in the mid-term and possible significant increases in the longer term.
- ❖ The school has a permanent Ministry rated capacity of 1,548 and enrolment of approximately 1,550 but currently utilizes 3 portables due to program, specialized space requirements and timetabling of classes.
- ❖ Projected utilization rates of permanent space at the end of the Board's forecast are over 130% and enrolment is predicted to exceed the functional capacity of the school by approximately 28 classrooms.



## STRATEGY:

There are generally three options to consider when addressing enrolment pressures at a school; building additional space to accommodate the enrolment, a change in program delivery/relocation of specialized programs or an attendance boundary change to send enrolment to surrounding schools with surplus space.

Long term Board projected enrolments for SJAM are expected to reach 2,073 by 2020/21. The school has an existing OTG capacity of 1,548 and would require a significant addition of 25 classrooms to fully accommodate the total projected enrolment. This would result in a secondary school with a capacity of close to 2,100, making it the largest secondary school in the Region and one of the largest secondary schools in the Province. If 10% of projected enrolment was assumed to be accommodated in temporary space, the school would still require an addition of 15 classrooms, bringing total permanent capacity to 1,863 and need 10 portables. The Board, using historical building expenditures as a basis, estimates costs for this project at approximately \$4 million dollars.

Before committing to a significant capital project and the associated capital expenditure, it is necessary to examine the aforementioned alternative accommodation options – program delivery/relocation and attendance boundary changes. For these 2 options to be considered there must be a secondary school in close proximity with available surplus space. There are 2 secondary schools that surround the boundary of SJAM – Waterloo Collegiate Institute (WCI) and Kitchener-Waterloo Collegiate & Vocational School (KCI). Of these schools, WCI is currently operating over capacity while KCI has available and surplus space (see Table 9).

TABLE 9 – ENROLMENT AND CAPACITY AT SECONDARY SCHOOLS SURROUNDING SJAM

School	Capacity	2010/11 Enrolment	Utilization
Kitchener-Waterloo C & VS	1,578	1,129	71.5%
Waterloo CI	1,215	1,450	119.3%

Source: WRDSB



Based on its proximity to SJAM and surplus space at the school, KCI has been determined to be a viable candidate for either program relocation or a boundary change. Considering the viability of program relocation or a boundary change between SJAM and KCI, it would be difficult to justify the construction of additional space at SJAM at this time. However, should long term enrolment projections and residential growth be fully realized, the construction of additional space at SJAM may be necessary in the longer term.

As previously mentioned, the Fast Forward program at SJAM currently has 155 students and is the only program that could be considered for relocation that would have a sufficient impact on reducing enrolment at the school. KCI also offers the Fast Forward program with a total of 105 students enrolled. In addition to the Fast Forward program, KCI also offers a French Immersion and an Extended French program with a total of 220 students. Relocating SJAM's Fast Forward students to KCI would result in a total of 260 students in the Fast Forward program and a total of 480 students at the school in some form of specialized program. The outcome would be almost 40% of the school's students enrolled in specialized programs. To ensure that enrolments at KCI maintain balance between specialized and regular programs, it is recommended that the Fast Forward program at SJAM not be relocated to KCI.

When evaluating a possible boundary change, two important factors are: how many surrounding secondary schools have available space (and where are they located) and which part of the existing boundary will be affected? It has been determined that KCI is in close proximity to SJAM and has available surplus space. Enrolment at KCI is expected to decline slightly over the forecast term according to the Board's projections and will have surplus space for the long term.

The demographic trends in KCI's boundary are in stark contrast to those in SJAM's boundary. The total population declined slightly between 2001 and 2006 by 0.1% and the elementary school aged population declined by more than 15%. The secondary school aged population increased by just below 3% between 2001 and 2006, however considering the significant declines in the elementary population it is reasonable to assume that the secondary school aged population will decline in the near future. Table 10 outlines the demographic trends in KCI's boundary.



**TABLE 10 – KCI BOUNDARY POPULATION CHANGE**

Population Data	2001 Census	Share Of Total	2006 Census	Share Of Total	2001-2006		
					Absolute Change	Percentage Change	Share Change
<b>Total Population</b>	<b>37,089</b>		<b>37,050</b>		<b>-39</b>	<b>-0.1%</b>	
Pre-School Population (0-3)	1,776	4.8%	1,660	4.5%	-116	-6.5%	-0.3%
Elementary School Population (4-13)	4,430	11.9%	3,761	10.1%	-669	-15.1%	-1.8%
Secondary School Population (14-18)	2,092	5.6%	2,152	5.8%	60	2.9%	0.2%
Population Over 18 Years of Age	28,792	77.6%	29,478	79.6%	686	2.4%	1.9%
<i>Females Aged 25-44</i>	6,317	17.0%	5,831	15.7%	-486	-7.7%	-1.3%

Source: Statistics Canada Census, 2001 & 2006

Historically, enrolment at KCI over the last decade experienced increases in the early part of the decade and significant declines in the latter part of the decade. Between 2001/02 and 2004/05 enrolment at the school increased by almost 18%, however between 2004/05 and 2009/10 enrolment declined by 372 students or more than 24%. Table 11 outlines historical enrolment at KCI by year and by grade.

**TABLE 11 – KCI HISTORICAL ENROLMENT**

GRADES	HISTORICAL ENROLMENT								
	Historical 2001/ 2002	Historical 2002/ 2003	Historical 2003/ 2004	Historical 2004/ 2005	Historical 2005/ 2006	Historical 2006/ 2007	Historical 2007/ 2008	Historical 2008/ 2009	Historical 2009/ 2010
<b>9</b>	324	332	305	302	312	277	245	216	252
<b>10</b>	339	326	345	344	320	311	280	249	235
<b>11</b>	288	320	327	345	307	292	311	294	262
<b>12</b>	355	387	545	549	513	429	400	425	419
<b>Total</b>	<b>1,306</b>	<b>1,364</b>	<b>1,522</b>	<b>1,540</b>	<b>1,452</b>	<b>1,309</b>	<b>1,236</b>	<b>1,184</b>	<b>1,168</b>

Source: WRDSB

According to the Board's projections, enrolment at the KCI is expected to continue declining over the next 10 years. Enrolment is projected to drop by almost 10% by 2014 to 1,055 students from the 2009/10 enrolment of 1,168. Beyond 2014 enrolment is projected to decline slightly by another 4% to 1,011 students by 2020/21 (see Table 12).



TABLE 12 - KCI PROJECTED ENROLMENT

GRADES	Current 2010/ 2011	Year 1 2011/ 2012	Year 2 2012/ 2013	Year 3 2013/ 2014	Year 4 2014/ 2015	Year 5 2015/ 2016	Year 6 2016/ 2017	Year 7 2017/ 2018	Year 8 2018/ 2019	Year 9 2019/ 2020	Year 10 2020/ 2021
9	237	219	232	212	228	218	226	204	223	211	219
10	258	250	231	245	224	241	230	239	216	235	223
11	237	266	258	238	252	231	248	237	246	222	243
12	397	348	391	379	350	371	339	365	349	361	327
<b>Total</b>	<b>1,129</b>	<b>1,084</b>	<b>1,112</b>	<b>1,074</b>	<b>1,055</b>	<b>1,060</b>	<b>1,043</b>	<b>1,045</b>	<b>1,033</b>	<b>1,030</b>	<b>1,011</b>
<b>% Change</b>		-4.0%	2.6%	-3.4%	-1.8%	0.6%	-1.6%	0.1%	-1.1%	-0.3%	-1.8%

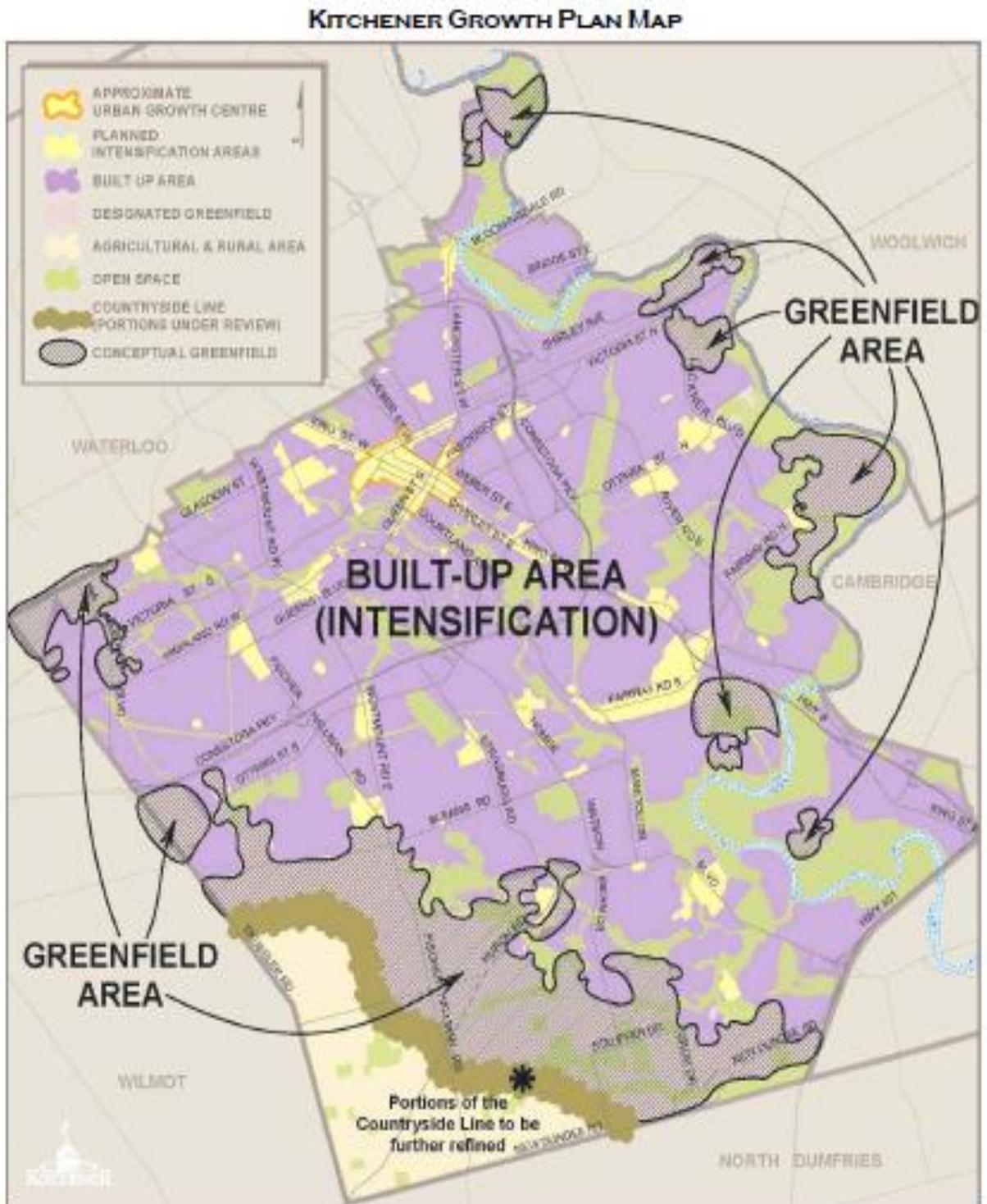
Source: WRDSB

The City of Kitchener's population is expected to increase by 100,000 people by 2031 according to the City's Growth Management Study (KGMS, January 2009) and the population in KCI's boundary is no exception. According to the population projections by school boundary referenced earlier in this report, the population in KCI's boundary is projected to increase by almost 19,000 people between 2011 and 2031. The majority of this population growth (55%) is projected to occur in the longer term, post 2021.

While both SJAM's and KCI's boundaries are expected to incur significant population growth, there is a difference in the type of growth expected in each boundary. A significant portion of future residential growth in Kitchener is expected to be multiple dwellings as the supply of lots for single family dwellings is dwindling. The majority of future growth in KCI's boundary is expected to be in the form of multiple dwellings through intensification, infilling and redevelopment projects. Future high density developments and infrastructure and transportation improvements will contribute to projected increases in the population, however these types of developments/housing do not typically attract families with school aged children. Map 5 on the following page outlines the type of expected growth in the City of Kitchener.



MAP 5 – CITY OF KITCHENER AREAS OF GROWTH



Built Boundary for the Growth Plan for the Greater Golden Horseshoe, 2006. Queen's Printer for Ontario, 2006. Reproduced with permission of the Ministry of Public Infrastructure Renewal.

Source: KGMS, January 2009



KCI's OTG capacity is 1,578 making it the 2<sup>nd</sup> largest secondary school in the Board's inventory and the school's utilization rate based on the 2009/10 enrolment of 1,168 is approximately 74%. As mentioned earlier, enrolment is projected to continue declining over the next decade resulting in utilization rates dropping below 65% by 2020/21 (Table 13) and more than 560 available spaces.

**TABLE 13 – UTILIZATION OF KCI'S PERMANENT SPACE**

	2004/ 2005	2006/ 2007	2007/ 2008	2009/ 2010	2010/ 2011	2014/ 2015	2016/ 2017	2018/ 2019	2020/ 2021
	HISTORICAL ENROLMENT				PROJECTED ENROLMENT				
	1,540	1,309	1,236	1,168	1,129	1,055	1,043	1,033	1,011
OTG CAPACITY	UTILIZATION OF PERMANENT SPACE BASED ON OTG CAPACITY								
1,578	97.6%	83.0%	78.3%	74.0%	71.5%	66.8%	66.1%	65.5%	64.1%

In addition to specialized programs like Fast Forward, French Immersion and Extended French, KCI offers a full range of regular programming for its students. The school also offers what are referred to as Priority 1 programs that include classes like life skills, hearing support and anxiety support, many of which are the only programs of their kind in the area. Further to this, the Board has invested in KCI to ensure that it meets the Board's standards for technology in the school and accessibility.

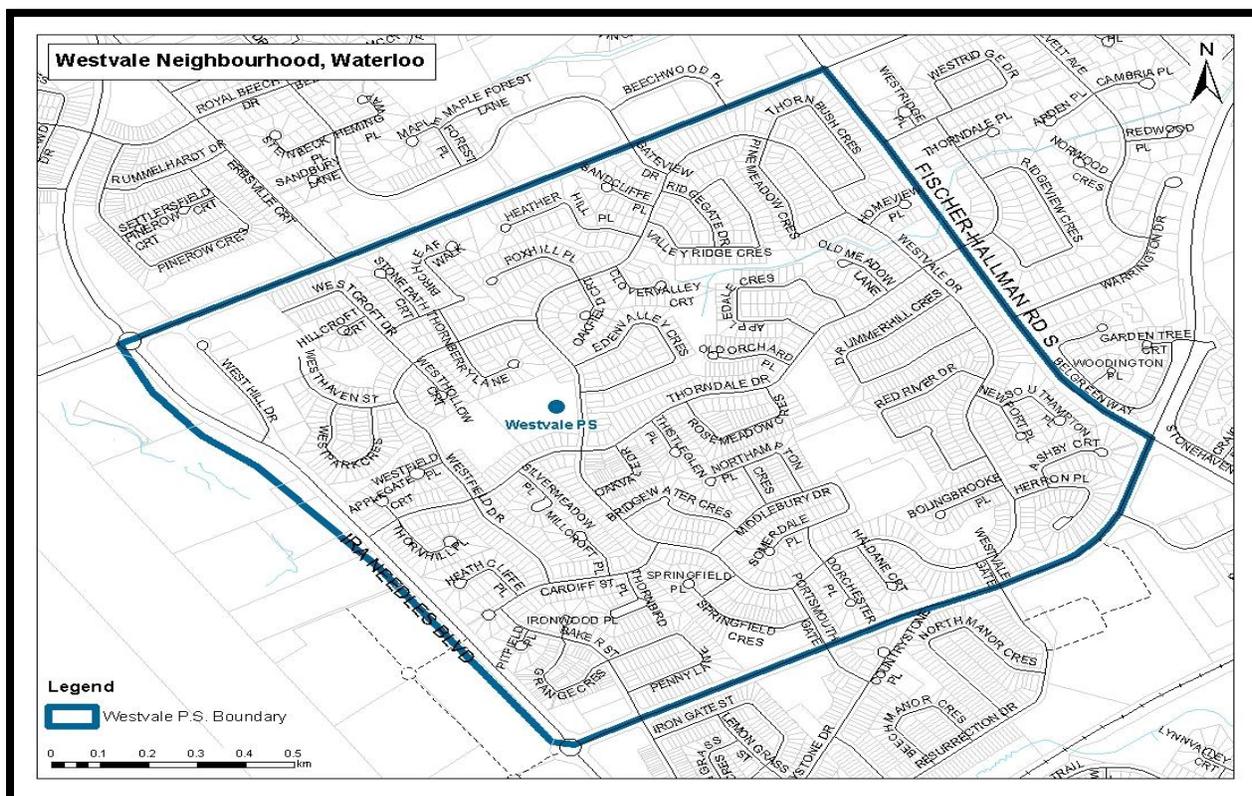
The Board has completed approximately \$10 million in renewal repairs at KCI since 2005/06 to improve the facility and the student environment as part of the Ministry of Education's Good Places To Learn funding program. This work included repairs such as: replacement of the boilers, replacement of the ventilation system, electrical upgrades, and window and roof repairs. In addition, the school has had renovations to all its science labs, a significant music room renovation and a new greenhouse. KCI also has large shop rooms, 3 gymnasiums and a full auditorium making it well equipped to provide a full breadth of program and extra-curricular activities.



The second factor in evaluating a possible boundary change, as mentioned in the previous section, is to determine which part of the boundary can be altered. It is important that the portion of the boundary being changed has a sufficient number of students to achieve the desired impact on enrolment and is in close proximity to the receiving school. In addition, any change should try to maintain a natural boundary, which is a boundary that continues to maximize the number of students that are eligible to walk to school and have minimal impact on transportation.

SJAM is located roughly in the centre of its attendance boundary and there are few, if any significant barriers in the boundary that impede walking access to the school (rivers, highways etc.). As previously mentioned, most of the school's boundary lies within the walking area of the school and more than 80% of students do not require transportation (See Map 2). An area in the southern section of the boundary, located furthest from the school, lies entirely outside the walking area of the school – this area is identified as Westvale Elementary School's attendance boundary (see Map 6). The Westvale area is bounded by Erb St to the north, Ira Needles Blvd to the west, University Ave to the south and Fischer Hallman Rd to the east.

MAP 6 – WESTVALE AREA



The Westvale area currently falls outside the walking area of any other WRDSB secondary school and students in this area would be eligible for transportation regardless of what secondary school they are directed to. The Westvale neighbourhood is a mature and built out area with limited future development potential. The demographics of the neighbourhood contrast sharply to the demographics of the larger SJAM boundary and are more similar to those of the KCI boundary. Recent residential growth in SJAM's boundary has resulted in significant population growth as well as growth in the elementary and secondary populations as well as the pre-school populations. In Westvale, the overall population declined slightly while the drops in the pre-school and elementary population were -26.5% and -20.2% respectively. These trends are indicative of a neighbourhood that is ageing and likely to continue experiencing declines school aged children in the short to mid-term and possibly longer. Age specific population trends for the Westvale area can be found in Table 14 below.

**TABLE 14 – WESTVALE AREA POPULATION CHANGE**

<b>Population Data</b>	<b>2001 Census</b>	<b>2006 Census</b>	<b>% Change</b>
<b>Total Population</b>	<b>6,460</b>	<b>6,425</b>	<b>-0.5%</b>
Pre-School Population (0-3)	415	305	-26.5%
Elementary School Population (4-13)	1,310	1,045	-20.2%
Secondary School Population (14-18)	505	610	20.8%
Population Over 18 Years of Age	4,230	4,465	5.6%
<i>Females Aged 25-44</i>	1,220	980	-19.7%

Source: Statistics Canada Census, 2001 & 2006

According to enrolment data provided by the Board, there were 239 secondary students in 2010/11 that attend SJAM that currently live in the Westvale boundary area. Area demographic trends suggest that historical declines in the pre-school and elementary school aged children will begin to impact the secondary population and that secondary enrolment will also decline. For the purposes of this study, a simplified age progression analysis and historical age retention rates from the 2001 and 2006 Census were used to assume an approximate decline in the secondary population going forward. This analysis assumed that the secondary population would decline approximately 16% in the next 5 years and this rate of decline was applied to the 239 secondary



students currently present in the Westvale boundary. The rate of decline was applied over a 5 year period after which the number was flat-lined at 200. Should the Board allow students in the Westvale area currently attending SJAM to finish their studies at their existing school, it is likely that the number of students involved in the boundary change will be closer to 200. Table 15 below, outlines the impact of the attendance boundary change at SJAM and KCI.

**TABLE 15 – PROJECTED ENROLMENT/UTILIZATION AT SJAM AND KCI ASSUMING PROPOSED BOUNDARY CHANGE**

	OTG CAPACITY	PROJECTED ENROLMENT			
		Current 2010/ 2011	Year 1 2011/ 2012	Year 5 2015/ 2016	Year 10 2018/ 2019
KCI	1,578	1,129	1,084	1,060	1,011
<b>Utilization of Space – Status Quo</b>		<b>71.5%</b>	<b>68.7%</b>	<b>67.2%</b>	<b>64.1%</b>
Accept enrolment from Westvale Attendance Boundary		239	229	200	200
KCI Plus Westvale Enrolment		1,368	1,313	1,260	1,211
<b>Utilization of Space</b>		<b>86.7%</b>	<b>83.2%</b>	<b>79.8%</b>	<b>76.7%</b>

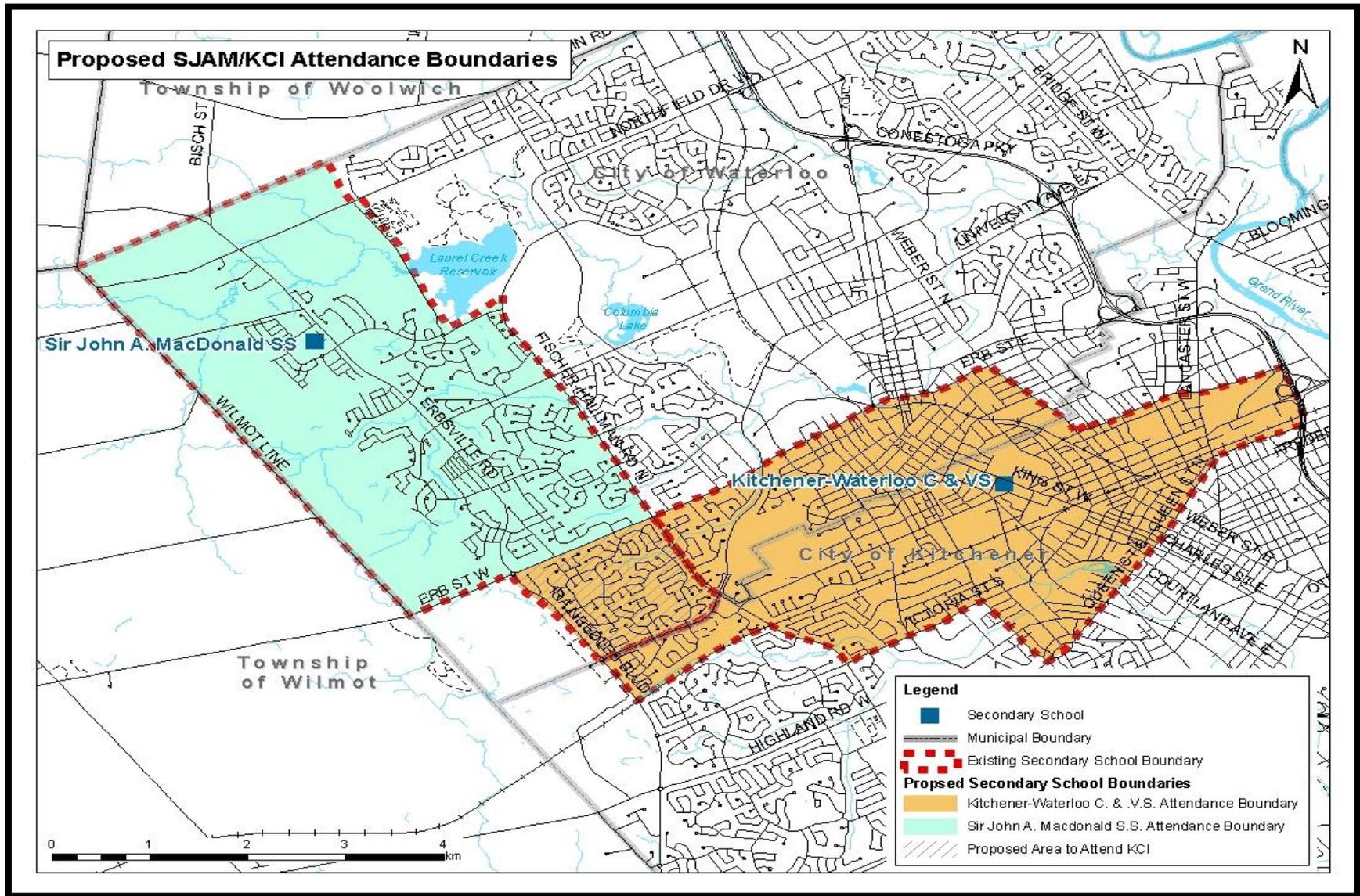
	OTG CAPACITY	PROJECTED ENROLMENT			
		Current 2010/ 2011	Year 1 2011/ 2012	Year 5 2015/ 2016	Year 10 2018/ 2019
SJAM	1,548	1,545	1,552	1,434	2,073
<b>Utilization of Space – Status Quo</b>		<b>99.8%</b>	<b>100.2%</b>	<b>92.6%</b>	<b>133.9%</b>
Enrolment from Westvale Attendance Boundary To KCI		(239)	(229)	(200)	(200)
SJAM Less Westvale Enrolment		1,306	1,322	1,234	1,873
<b>Utilization of Space</b>		<b>84.4%</b>	<b>83.8%</b>	<b>78.2%</b>	<b>121.0%</b>



Long term utilization of space at KCI is expected to drop below 65% by the end of the forecast term, however the proposed attendance boundary change will increase enrolment at the school and bring utilization rates closer to 80%. At SJAM, the attendance boundary change will bring utilization rates of permanent space down to the low 80% range in the short to mid-term and between 90% and 104% near the end of the forecast. In the final year of the forecast, when enrolment is projected to be close to 1,900, the utilization rate exceeds 120% and the Board may need to consider additional accommodation options at SJAM. Map 7 on the following page, outlines the new proposed boundaries for SJAM and KCI.



MAP7 – NEW PROPOSED BOUNDARIES FOR SJAM AND KCI



## IDENTIFIED ISSUES AND RECOMMENDED STRATEGY

Projected enrolment at SJAM is expected to exceed the school's capacity by a significant margin over the next decade, creating accommodation issues. Continued residential growth in the school's boundary and the use of space for specialized programs will make it difficult for the school to accommodate enrolment in permanent space and increase the reliance on temporary space for accommodation. To address the accommodation issues at SJAM, various options were considered, including a permanent addition, relocation of program and a boundary change.

Considering the available space at nearby KCI and the location and demographics of the Westvale area it is recommended that the WRDSB pursue a boundary change between SJAM and KCI. Enrolment at KCI has been declining over the past five years and is projected to continue declining over the next decade. There is significant surplus space at the school and utilization of permanent space is expected to drop below 65% by 2020/21. While there is growth projected in KCI's boundary, it is projected to be multiple dwellings (apts/condos) through redevelopment and intensification and not likely to attract families with school aged children.

The proposed boundary change recommends that students residing in the Westvale area be directed to KCI. However, in recognition of the impact this type of change can have on a student mid-stream, it is recommended that students currently attending SJAM be given the option to finish their studies with the understanding that transportation will be provided to students currently enrolled at SJAM.

The proposed boundary change will reduce enrolment at SJAM and address existing and projected enrolment pressures at the facility, while lessening the reliance on temporary space. It will also provide the Board with greater flexibility in determining future accommodation options at the school in the longer term and in the context of accommodation plans for the secondary system as a whole in the City of Waterloo. The boundary change will also increase enrolment at KCI, thereby increasing the school's utilization rate and provide a greater balance between the regular and specialized programs at the school. The proposed boundary change will not require any capital construction but will impact transportation expenditures in the short-term as students from Westvale are split between KCI and SJAM.

