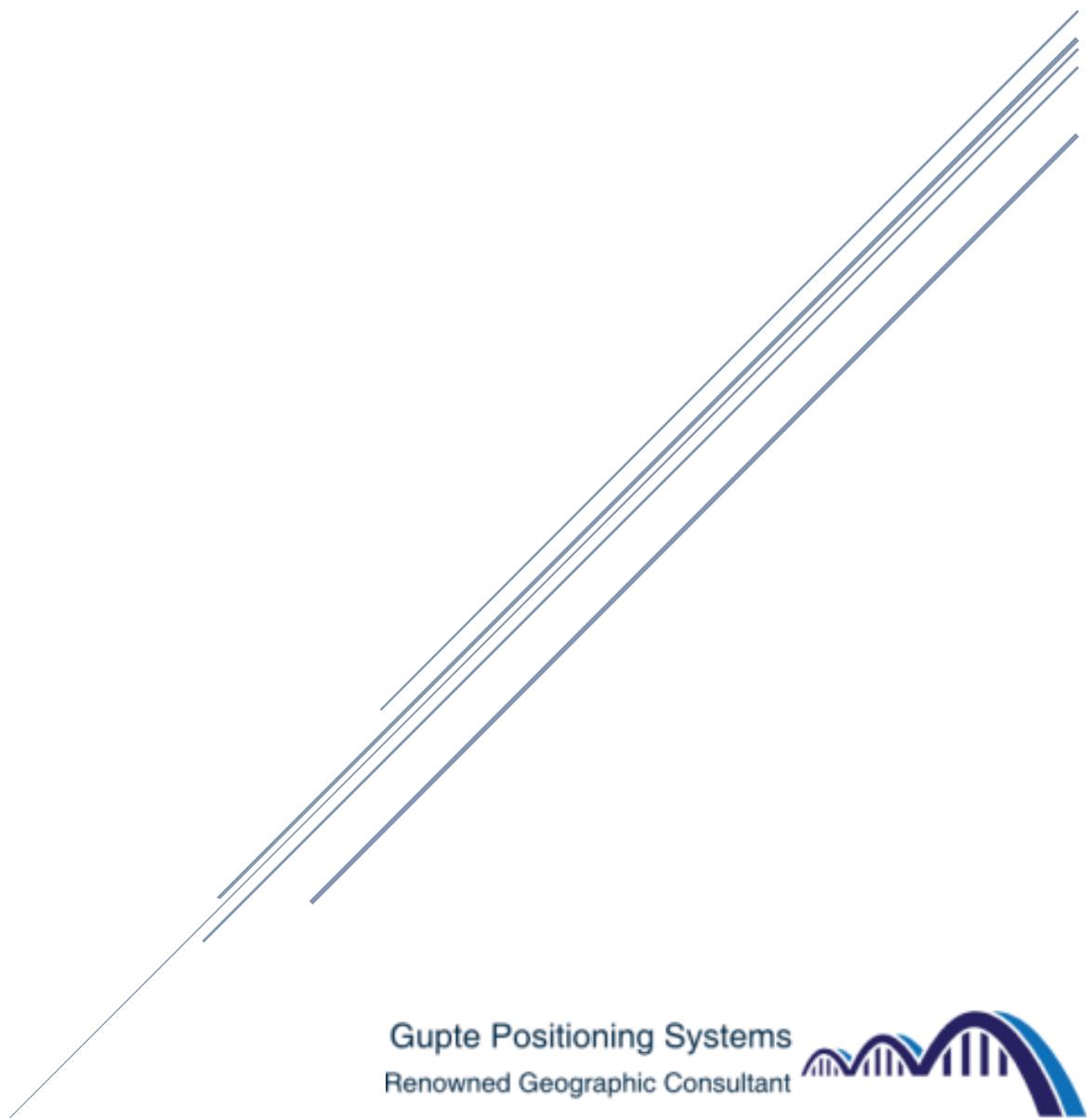


# UNEQUAL DEMOGRAPHIC DISTRIBUTIONS IN THE PARKLAND SCHOOL DISTRICT OF PENNSYLVANIA



# UNEQUAL DEMOGRAPHIC DISTRIBUTIONS IN THE PARKLAND SCHOOL DISTRICT OF PENNSYLVANIA

By: Atharv Gupte | 20 April 2017

There is currently a high level of population growth and new home construction in the Parkland School District of eastern Pennsylvania. However, such growth is focused in the southwest corner of the district. This has caused enrollment levels in the district's southern schools to steadily increase, leading to overcrowding, while the enrollment of the northern schools has remained stagnant. To counter these issues, Parkland has worked with geographic consultant Santec to help redistrict sending regions for the district's eight elementary schools. Such a redistricting effort aims to equalize enrollment levels in these schools by sending certain students to non-overcrowded schools further north. Parkland has also recently proposed a ninth elementary school in the south to cope with the increasing student population.

Despite the efforts made at the primary-school level, no measures have recently taken place to cope with enrollment inequalities in the middle and high schools. The quickly-growing southern tier of Parkland is entirely served by Springhouse Middle School, which is perhaps the district's biggest culprit of student overcrowding. Further expansion of the school is not possible given space constraints, and the school is located far away from a majority of the newly-constructed housing developments. Effectively, the construction of a third middle school close to the new housing developments should be the district's next step to effectively cope with the region's evolving population dynamics.

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## The Parkland School District is Currently Experiencing Rapid Population Growth

The Lehigh Valley Region of eastern Pennsylvania has seen a high level of growth recently, with the metropolitan population increasing by nearly 14,000 over the past five years.<sup>[1]</sup> To accommodate this rise in population, an estimated 1,108 new homes have been constructed throughout the region during this time period.<sup>[2]</sup> Such population growth is especially prominent in the Parkland School District of Lehigh County, northwest of the City of Allentown. Within the Parkland School District, the average house age stands at 14.8 years and has consistently fallen the last five years.<sup>[3]</sup> The construction of new homes

within the district is likely a contributing factor to the increase in district enrollment from 7,928 in 2007 to 9,254 in 2017.<sup>[4]</sup> Such development has funneled an estimated 12% increases in taxes the district receives, enabling schools to provide enhanced facilities for its students.<sup>[5]</sup>

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## Population Growth in Parkland is Highly Concentrated in the District's Southwest Corner

However, much of this growth has been concentrated in the southwest corner of the district. From 2000 – 2015, the residential population in Upper Macungie Township, in the south, has increased by 8,067.<sup>[6]</sup> Meanwhile, during the same time period, the residential population in North Whitehall Township, in the north, increased by only 925.<sup>[7]</sup> Such a discrepancy in population growth has dramatically affected student enrollment throughout the district's school system. All Parkland elementary schools have a design capacity of between 400 and 525 students.<sup>[8]</sup> But today, Jaindl and Fogelsville elementary schools, both located in the quickly-developing Upper Macungie Township, have respective student enrollments of 606 and 566, respectively.<sup>[9]</sup> Additionally, the entire Upper Macungie Township is in the sending region of Springhouse Middle School, one of two middle schools serving the district. Over the past ten years, student enrollment at Springhouse has increased by 35 %, while at the other middle school, Orefield, enrollment declined by 2%.<sup>[10]</sup>

A large share of this new population is being housed in newly-constructed suburban developments. In the Upper Macungie Township of Breinigsville, Pulte Homes recently completed a master community Coldwater Crossings, consisting of 207 single-family houses and 113 townhomes, for a total of 320 properties.<sup>[11]</sup> Immediately to its west, Centex Homes is developing a similar community, Whispering Farms, which will add 129 homes to the Upper Macungie Landscape.<sup>[12]</sup> Just to the north of Whispering Farms, Kay Builders is constructing Trexler Field, a 262-unit community of detached homes and townhouses across an area of 124 acres.<sup>[13]</sup> Figure 1, on the next page, places the proximity of these three communities in context and their location in the Parkland School District.

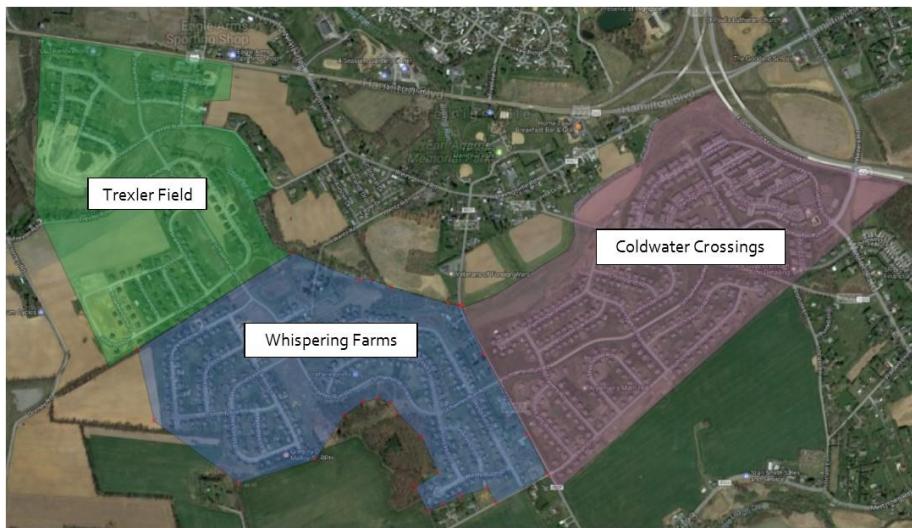


Figure 1A: Locations of the three newly-constructed subdivisions in Breinigsville, and their proximity to each other. <sup>[14]</sup>

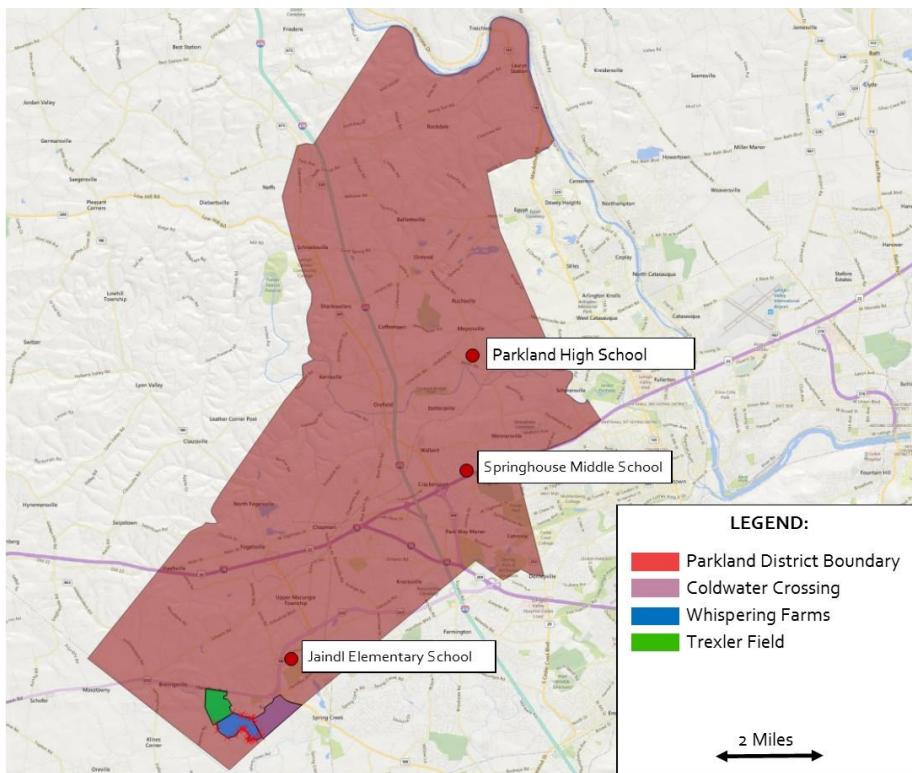


Figure 1B: Relative location of the newly-constructed residential communities within the entire Parkland School District. The three highlighted schools are where students in these communities attend. <sup>[14]</sup>

Meanwhile, besides the development of fifteen individual estates in western Orefield, there is no current or planned housing construction in Parkland's northern tier.<sup>[15]</sup>

Importantly, an increase in population does not necessarily translate to a higher number of school-age students. For example, the construction of condominiums and apartments has a negligible correlation with alterations in school enrollment.<sup>[16]</sup> But in the case of Parkland, 95% of new developments were in the form of single-family and duplex homes, which are the two types of residential properties most highly correlating with a higher elementary student population.<sup>[17]</sup>

### Geographic Consultant Santec has Helped to Redraw Sending Regions of the District's Elementary Schools

In November 2015, the Parkland School District worked with geographic consultant Santec to propose an intermediate solution to the district's overcrowding issues. From this collaboration, a recommendation was made to redraw the sending regions of the district's eight elementary schools.<sup>[18]</sup> Such a move aimed to combat increasing student enrollment in the district's southern elementary schools by sending students to less-crowded schools further north.<sup>[19]</sup>

SCHOOL	Current	Redistricted Enrollment	Change
Cetronia	525	473	-52
Fogelsville	571	549	-22
Jaindl	636	598	-38
Kernsville	450	369	-81
Parkway Manor	423	487	64
Kratzer	380	437	57
Schecksville	384	462	78
Ironton	377	388	11

Figure 2: Projected changes in enrollment at each elementary school after redistricting sending regions.<sup>[20]</sup>

Under this proposal, the southern and western schools of Cetronia, Fogelsville, Jaindl, and Kernsville would see decreased enrollment levels, thus alleviating overcrowding issues. Figure 3, below, shows that the sending districts of these schools would shift further south and

west, placing neighborhoods further north in a less-crowded school's sending district.<sup>[21]</sup>

For example, Fogelsville's sending district would no longer include the under-construction Parkland Fields development in Upper Macungie Township. Additionally, Kernsville's sending district would lose the York Estates neighborhood in Orefield, located a mere half mile north of the school.<sup>[22]</sup>

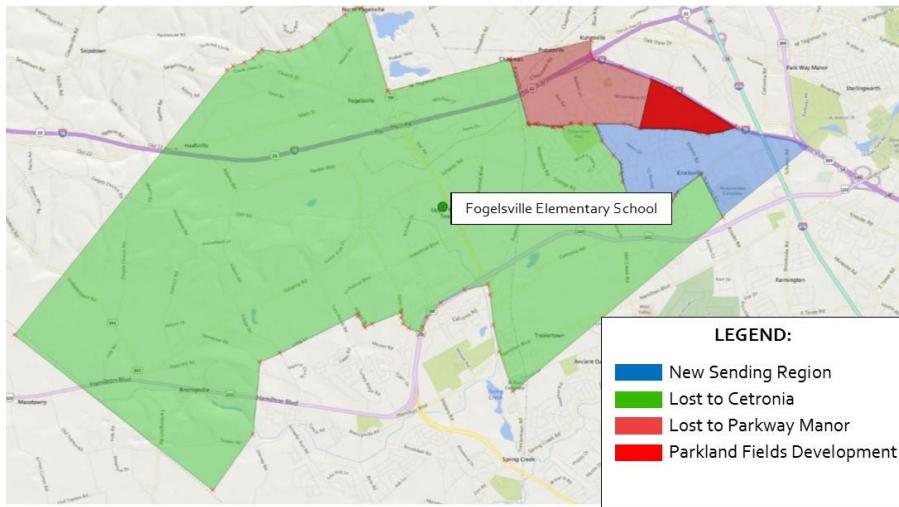


Figure 3A: Districting Changes for Fogelsville. Note that the Parkland Fields Development is lost to the sending region of Parkway Manor.<sup>[23]</sup>

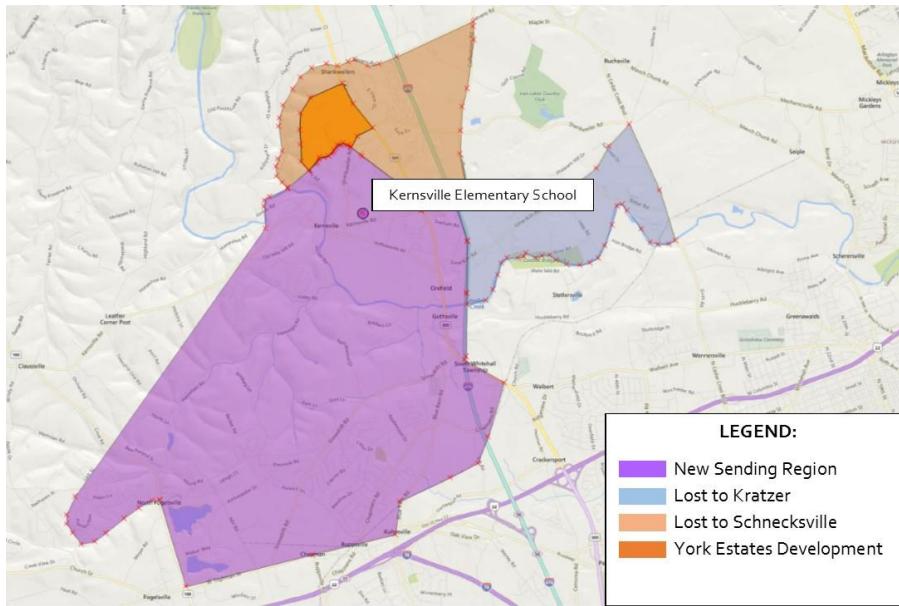


Figure 3B: Districting Changes for Kernsville. Note that the York Estates Development is lost to the sending region of Schnecksburg.<sup>[24]</sup>

Meanwhile, under Santec's recommendation, the schools further north and east (Parkway Manor, Kratzer, Schnecksille, and Ironton) would see an increase in the number of students (see Figure 2). As shown in Figure 4, their sending districts would expand further south and west to reach new population pools. For example, the Parkland Fields development would lie under new territory of Parkway Manor, and the York Estates neighborhood would move from Kernsville's to Schnecksille's sending district.<sup>[25]</sup>

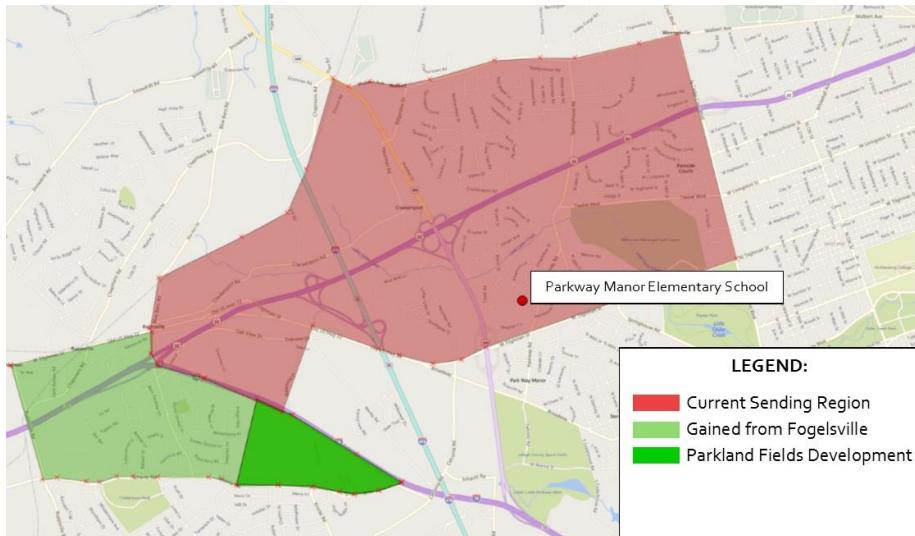


Figure 4A: Districting Changes for Parkway Manor. Note that the Parkland Fields Development is gained from the sending region of Fogelsville.<sup>[26]</sup>

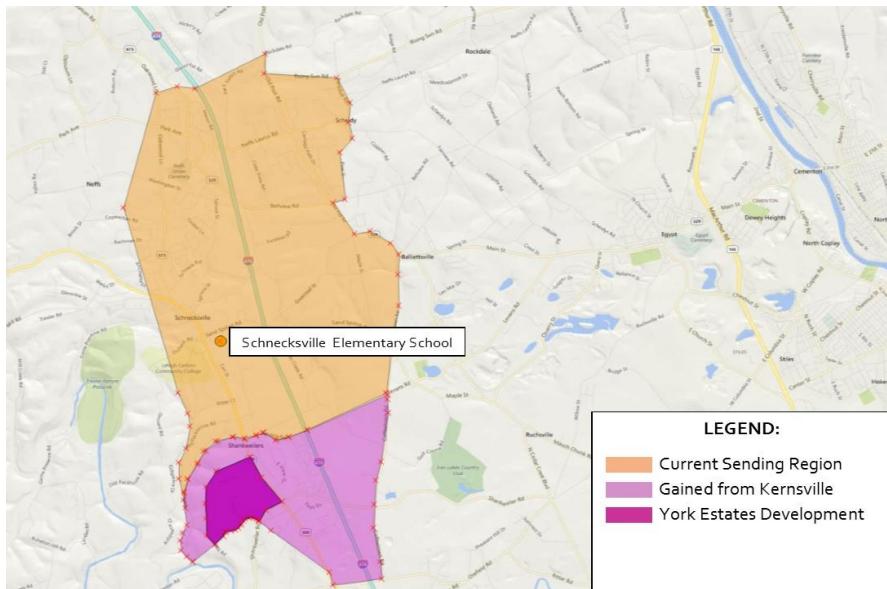


Figure 4B: Districting Changes for Schnecksille. Note that the York Estates Development is gained from the sending region of Kernsville.<sup>[27]</sup>

The recommendation made by Santec was approved in December 2015, and the redistricting went into effect for the 2016-2017 school year.<sup>[28]</sup>

## Parkland has Proposed a Ninth Elementary School to Fulfill Demand in the District's Regions of Population Growth

The redistricting efforts of Parkland in collaboration with Santec were only a temporary solution to mitigate overcrowding in the district's elementary schools. On February 28, 2017, the School Board announced the site of a new ninth elementary school in the Breinigsville region of Upper Macungie Township.<sup>[29]</sup> The school aims to stabilize enrollment levels at the nearby Fogelsville and Jandl elementary schools, both of which currently serve the fastest-growing regions of the district.<sup>[30]</sup> Specifically, Jandl elementary school serves the under-construction Coldwater Crossing, Whispering Farms, and Trexler Field, which will add a total of 711 properties to Upper Macungie Township (see Figure 1).<sup>[31]</sup>

The new school will be located on an 18-acre site next to Twin Ponds Road, a mere mile away from both Fogelsville and Jandl elementary schools (see Figure 5). 500 students are expected to enroll in the new school when its doors open in Fall 2020.<sup>[32]</sup>

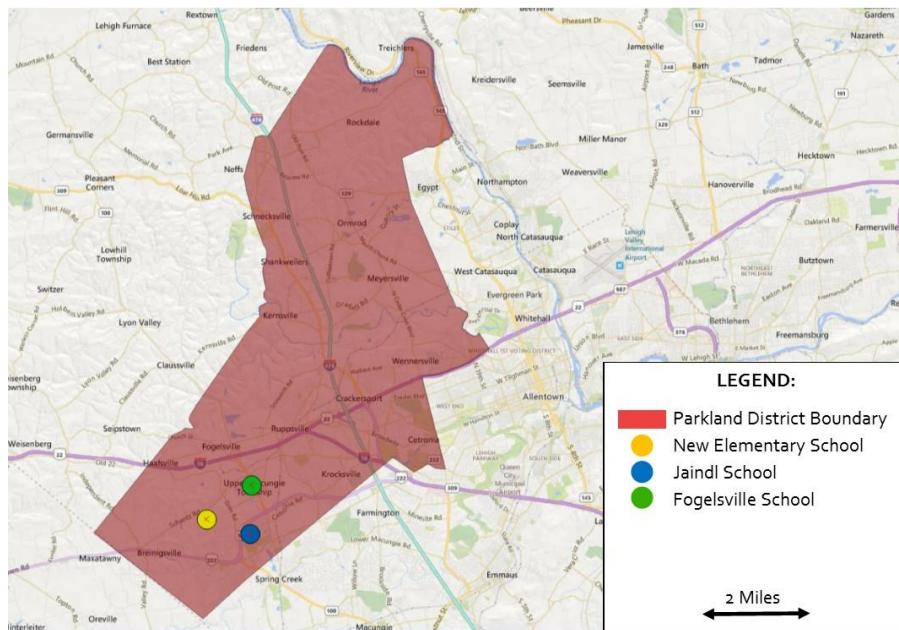


Figure 5: Location of the new school within the district. Note the close distance to Fogelsville and Jandl Schools, both of which are within 2 miles of the new school.<sup>[33]</sup>

## A Shift of Population Concentration Away from Secondary Schools Drastically Increases Distances and Driving Times from these Schools

The Parkland School District has recently focused on expanding the capacity and reach of its elementary schools. In 2010, Jaindl Elementary School opened in the quickly-growing region of Breinigsville, within a mile of six under-construction residential communities.<sup>[34]</sup> Additionally, a ninth elementary school, one mile north of Jaindl, is slated to open in Fall 2020 (see Figure 5).<sup>[35]</sup>

However, for the past ten years, Parkland has not made any efforts for its secondary schools to cope with sustained population growth in the southwest. The district runs two middle schools: Orefield and Springhouse, and has a single high school. All of these three secondary schools are located in the northern and eastern reaches of the district, away from the quickly-growing developments in Breinigsville and other localities in Parkland's southwestern tier (see Figure 6).<sup>[36]</sup> Effectively, more and more students are having to travel longer distances from home to reach their classroom.

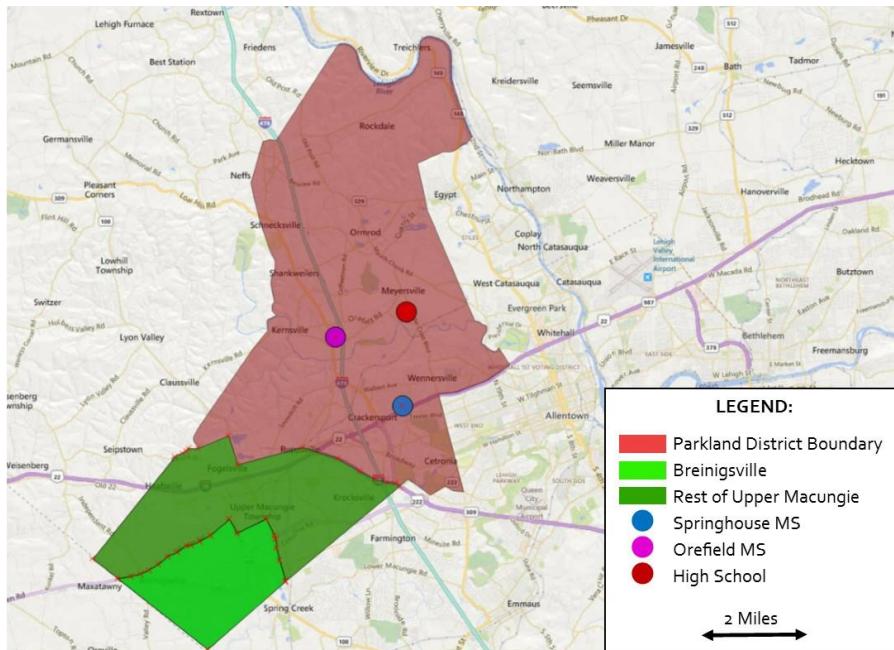


Figure 6: Location of secondary schools with respect to the quickly-developing Upper Macungie Township. Within Upper Macungie is Breinigsville, the district's fastest growing locality.<sup>[37]</sup>

The entire southern half of the Parkland School District, including the newly-developing regions of Upper Macungie and Breinigsville, is served by Springhouse Middle School.<sup>[38]</sup> Springhouse is located in the eastern reaches of the district, close to high-density neighborhoods of older, more-established homes generally constructed in the 1960s and 1970s.<sup>[39]</sup> Such a location places Springhouse far from the numerous under-construction subdivisions in the Breinigsville Area. In fact, parts of Breinigsville lies 8 miles away from Springhouse, and 10 miles away from Parkland High School. In fact, there are 7 middle schools and 4 high schools closer to Breinigsville than Springhouse and Parkland's High School, respectively.<sup>[40]</sup>

Such long distances make transportation to and from school difficult, both for the district and parents alike. In the 2015-2016 school year, each Parkland School District school bus drove 31 miles on average per day, a number that has been steadily increasing since 2002.<sup>[41]</sup> Additionally, having parents drive long distances to pick their children up from after-school activities can seriously affect the parents' and children's willingness to continue pursuing these activities. A loss of participation in such activities can eventually hinder Parkland's stance in the entire Lehigh Valley as a leader in athletics, the arts, and sciences.<sup>[42]</sup>

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### The Current Parkland High School, Despite Increases in Enrollment, is Still Below its Design Capacity

The current Parkland High School was constructed in 1999 on a 128-acre site on Cedar Crest Boulevard in the district's eastern reaches of South Whitehall Township. It was built to ease overcrowding at the old high school, which was 2.5 times smaller.<sup>[43]</sup> However, the current high school has not gone through any expansions in its eighteen years of operation. During the same time period, enrollment has increased from 2,350 in 1999 to 3,332 in 2016.<sup>[44]</sup>

Despite these gains in the number of students at Parkland High School, the school is still below its design capacity of 4,000 students.<sup>[45]</sup> The school shares its exact architectural design with Neuqua Valley High School in Illinois, and Stillwater High School in Minnesota.<sup>[46]</sup> Neuqua Valley has a student population of 3,885, and Stillwater enrolls 3,927 students.<sup>[47][48]</sup> Effectively, Parkland's student-to-teacher ratio of 17:1 is less than that of Neuqua Valley (20:1) and Stillwater (21:1).<sup>[49][50][51]</sup> Additionally, all three of these student-to-teacher ratios are within the

middle 50 percent of student-to-teacher ratios of the USA's public high schools.<sup>[52]</sup>

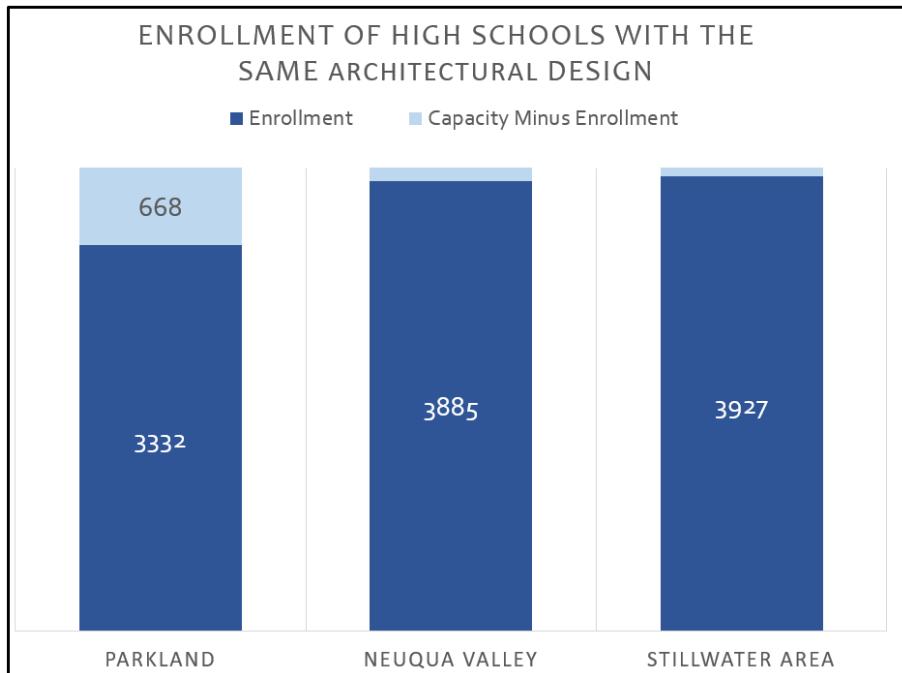


Figure 7: Parkland High School's enrollment in comparison to that of Neuqua Valley and Stillwater Area High Schools. Note that all three high schools have the same architectural design, and capacity of 4,000 students. Neuqua valley is 115 students below capacity, while Stillwater is 73 students below capacity.<sup>[53]</sup>

To construct a new high school would pose several challenges to the district. High schools require many more facilities than both middle and elementary schools, including swimming pools, sports fields, and more-specialized classrooms in the arts and technology education.<sup>[54]</sup> Additionally, there is the issue that Parkland's overall stance in the athletics and arts would be in jeopardy, as each of the two high schools would only receive half of the pool that would be available to a single high school. Importantly, school rankings and property values in a school district more directly correlate with high school quality rather than the quality of middle and elementary schools.<sup>[55]</sup>

Given the recent trends of increasing student enrollment at Parkland High School, it is certainly possible that a new high school could need to be constructed in the future. However, as the school is still below capacity and has reasonable student-to-teacher ratios, immediate construction of a second high school is not recommended.

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## Springhouse Middle School is Perhaps the Largest Culprit of the District's Uneven Development

Nearly all of the district's under-construction neighborhoods are located in Springhouse Middle School's sending region. Like the high school, Springhouse has not been expanded in more than a decade.<sup>[56]</sup> Springhouse went through a 75,000 square-foot expansion in 2004, increasing the school's capacity by 250 students to 1,100 students.<sup>[57][58]</sup> However, Springhouse's enrollment has increased by 38% between 2007 and 2017, compared to the 16% increase in enrollment of the high school during the same time period.<sup>[59]</sup> By 2013, the number of enrolled students (1,140) surpassed the school's design capacity. Currently, for the 2016-2017 school year, 1,270 students attend Springhouse, 170 more than the building was designed to hold.<sup>[60]</sup>

Importantly, overcrowding at Springhouse Middle School is a likely contributor to increasing class sizes. Currently, the student-to-teacher ratio stands at 20:1, which places the school at the eighty-fifth percentile of class sizes in American middle schools.<sup>[61]</sup> Parkland's other middle school, Orefield, has a student-to-teacher ratio of only 16:1, and such a figure has remained relatively stable for the last ten years.<sup>[62]</sup>

With the continual development in the southern tier of the district, Springhouse's overcrowding will only become more pronounced as more students enroll. Such a phenomenon will effectively further widen the discrepancy between the student-to-teacher ratios of Springhouse and Orefield.

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## Parkland Lacks Adequate Facilities to Cope with Increasing Numbers of Middle School Students

In addition to Springhouse, the Parkland School District operates Orefield Middle School and owns the abandoned Troxell Building. Neither of the two facilities can feasibly cope with the district's rapidly-increasing middle school student population.

Springhouse's attendance is above its design capacity by 170 students, while Orefield's enrollment is below its capacity by only 126 students.<sup>[63][64]</sup> Effectively, the capacity of the district's middle schools combined falls short of their combined enrollment by 44 students. As population growth continues in the Parkland School District, this district-wide surplus of 44 middle school students will only increase. Additionally, while Springhouse is far from many of the newly-

constructed neighborhoods of Breinigsville, Orefield Middle School is even further. Orefield Middle School is 9.5 miles from Breinigsville, while Springhouse is 8 miles away (see Figure 8).<sup>[65]</sup> Redistricting middle school students to Orefield would only exacerbate the challenges for the district and parents to transport their children to and from school.

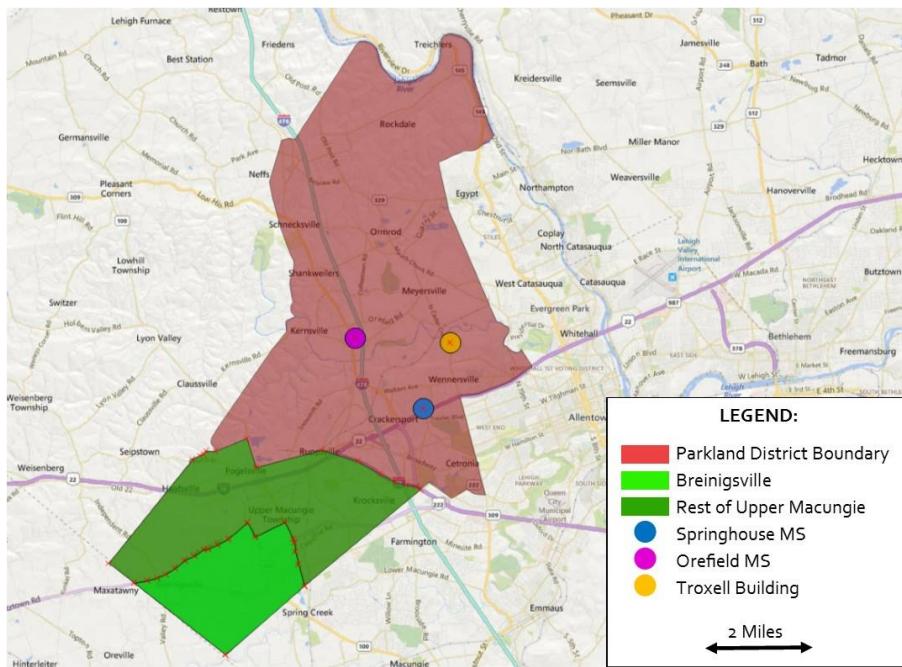


Figure 8A: Location of the middle schools and Troxell Building within the district. Note how Troxell is the furthest of the three buildings from Breinigsville.<sup>[66]</sup>

SCHOOL/BUILDING	DISTANCE FROM BREINIGSVILLE
Springhouse Middle School	8 Miles
Orefield Middle School	9.5 Miles
Troxell Building	10 Miles

Figure 8B: Table of distances from Breinigsville to Springhouse MS, Orefield MS, and the Troxell Building. Note that while Springhouse is far, it is the closest of the three buildings.<sup>[66]</sup>

Parkland also owns the Troxell Building, which is an abandoned junior high school.<sup>[67]</sup> The 140,000 square-foot facility has the physical space to house the increasing surplus of the district's middle school population. However, Troxell has not been renovated since its construction in 1952.<sup>[68]</sup> An extensive renovation would be required to bring the building up to modern-day standards of a middle school. Additionally, the building is located two miles northeast of

Springhouse, in the exact opposite direction of the under-construction subdivisions in Upper Macungie and Breinigsville (see Figure 8).<sup>[69]</sup>

## Expansion of Springhouse is not Feasible Given the Local Topography and Space Constraints

Springhouse Middle School is located in a densely-populated suburban neighborhood of older, well-established homes. The school sits on a 27-acre property on Crackersport Road, immediately north of US Highway 22 and east of the Winchester Heights development (see figure 9).<sup>[70]</sup>



Figure 9: Property owned by Springhouse Middle School. Note that nearly the entire property is taken up by the building, sidewalks, parking lots, and a retention pond. Under Pennsylvania environmental code, a floodwater retention pond cannot be legally infilled.<sup>[66]</sup>

52% of Springhouse's land area is occupied by the building itself. A vast majority of the remaining land is used for parking, sidewalks, and the bus drop-off zone. Importantly, the school currently only has 228 parking spaces, which is already not enough to handle larger events such as basketball games and band concerts.<sup>[72]</sup> The bus drop-off zone has slots for only twenty buses, even though as of 2016, 26 buses serve Springhouse.<sup>[73]</sup> Immediately to the east of the bus drop-off zone lies a retention pond, which serves to relieve flooding in the region and cannot be legally infilled.<sup>[74]</sup>

Given the small plot that Springhouse rests on, any structural expansion to the building would compromise the already-limited space reserved for parking. There is also the concern that hiring more teachers would further increase Springhouse's demand for parking. Additionally, the effects of ongoing construction to expand Springhouse would infiltrate into the school's already-overcrowded facilities.

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### A Third Middle School is More Logistically Feasible to Build and Operate than a New High School

Given the physical and structural limitations of the Parkland School District's existing facilities, a new secondary-level school would more efficiently serve the region's growing population. Parkland has proposed a new elementary school to cope with increased enrollment, but the combined capacity of the district's secondary schools has not increased since 2004.<sup>[75]</sup> While the high school is still below capacity by 668 students, there is a surplus of 44 middle school students in the district.<sup>[76][77]</sup> Therefore, based on demand and capacity alone, construction of a third middle school is highly desired to cope with the district's evolving population dynamics.

It turns out, in fact, that the construction of a middle school provides the district with additional economic and logistical benefits over a second high school. A middle school would be significantly more cost-effective to construct than a new high school. Unlike high schools, middle schools do not require a swimming pool, stadium, enhanced athletic facilities, and more specialized classrooms in the sciences and technology education.<sup>[78]</sup>

Beyond its lower relative cost, a third middle school will be more manageable to run. High schools have several more activities than middle schools, so operating double the number of athletic teams, school bands, and other organizations is not easily feasible. Graduations, proms, and homecoming are very costly to run, and are all found only in high schools. To operate a second high school would mean running two graduations, two homecomings, and two proms, one for each high school. Economies of scale dictate that operating three large celebrations for a unified high school is more economical than managing six smaller celebrations, three for each school.<sup>[79]</sup>

Finally, keeping the Parkland High School unified would keep the Parkland name and reputation intact. High schools are the most direct indicator of the capabilities of an entire school district and its

rankings.<sup>[80]</sup> Much of a high school's reputation derives from the quality of its activities.<sup>[81]</sup> Splitting the student pool in half will undoubtedly compromise the quality and stance of the district's academic, arts, and enrichment programs.

## There are Several Suitable Plots of Land for a New Middle School Close to Quickly-Growing Developments

The construction of any facility requires an adequate amount of land. Despite the rapid growth in Upper Macungie Township, including the localities of Breinigsville and Trexlertown, there are several remaining tracts of land suitable for the construction of a middle school. Figure 10 illustrates the Tamerler Tract in Upper Macungie Township.



Figure 10: Exact location and boundaries of the Tamerler Tract in Upper Macungie Township. Note the presence of the Grange Community Park, a community gathering place, immediately to the East.<sup>[82]</sup>

The Tamerler Tract is especially attractive as the land is currently owned by the Upper Macungie Township and not used for private agricultural purposes.<sup>[83]</sup> In 2013, the district proposed a second community library at this site, but the library was vetoed by the school board a year later in favor of upgrading the existing library.<sup>[84]</sup> Nonetheless, the district holds a \$2000 deposit on the land, and can readily purchase the tract if it feels the need to.<sup>[85]</sup>

The Tamerler Tract is very well positioned to be the site of a third middle school. The 96-acre plot gives ample room for a school and future expansions, if necessary.<sup>[86]</sup> It is located only a half-mile from the Route 222 bypass, providing easy transportation to and from the quickly-growing communities in Breinigsville. Additionally, the tract is only 3 miles from Breinigsville, or five miles closer to Breinigsville than the current Springhouse Middle School (see Figure 11). Just next door is the newly-dedicated Grange Park, which serves as a key gathering place for Upper Macungie's parents and children. Operating a middle school on the tract, next to the park, will help foster an increased sense of community in Upper Macungie.<sup>[87]</sup>

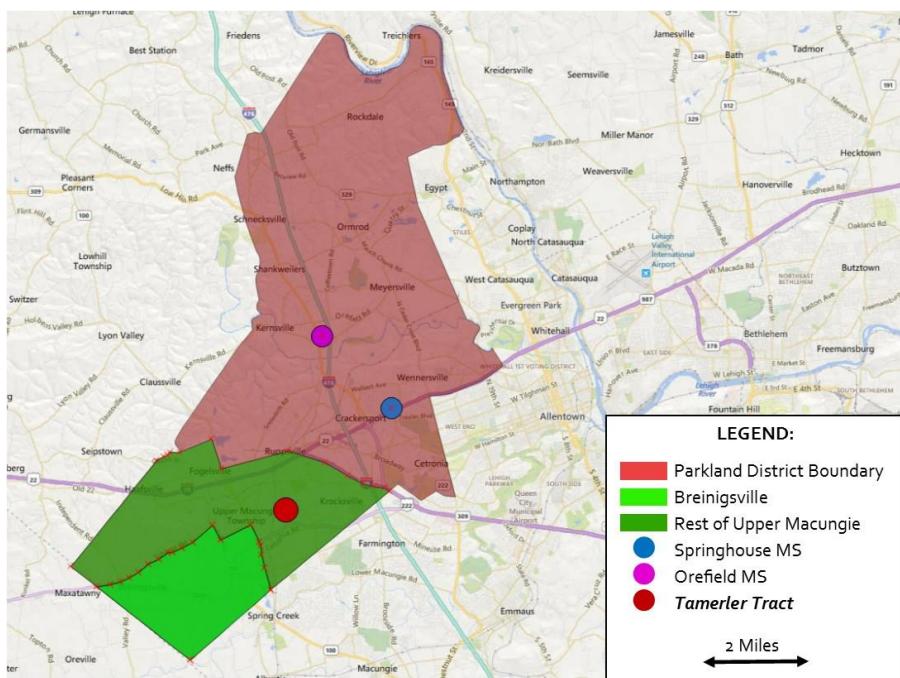


Figure 11: Location of the Tamerler Tract with respect to both Parkland's current middle schools and the quickly-growing Upper Macungie Township. The Tamerler Tract is situated only 3 miles from Breinigsville, or five miles closer than Springhouse. For comparison, Springhouse Middle School is 8 miles from Breinigsville, while Orefield Middle School is 9.5 miles away.<sup>[88]</sup>

## Conclusion

Based on the Parkland School District's immediate sources of overcrowding, as well as the availability of land closer to high-growth regions, construction of a third middle school is highly recommended. The most attractive and feasible location for this new school is on the Tamerler Tract in Upper Macungie Township, within close proximity of numerous under-development neighborhoods in Breinigsville and Trexlertown. Effectively, this middle school will serve the immediate needs of the district to counter overcrowding and broaden its geographic reach to serve distant, newly-constructed communities.

*Atharv Gupte is an alumnus of Springhouse Middle School and is a Parkland High School graduate with highest honors. He currently attends the Schreyer Honors College at Penn State University.*

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