



Lexington Public Schools  
146 Maple Street Lexington, Massachusetts 02420

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**To:** School Committee  
Dr. Paul B. Ash, Superintendent of Schools

**From:** Maureen Kavanaugh, Director of Planning and Assessment

**Re:** Technical Study of Redistricting

**Date:** April 23, 2015

The purpose of this memorandum is to provide a report on the technical steps needed to redistrict elementary students and common redistricting strategies used by School Committees. This report will outline common redistricting strategies, associated pros and cons, and policy questions the School Committee may want to consider. The need for this report was identified in the Consensus Report adopted by Board of Selectmen, School Committee, Appropriation Committee, and Capital Expenditures Committee in March 2015.

### *Introduction and Background*

Enrollment has been growing at roughly 2% each year for the past seven years, resulting in overcrowded school facilities. Based on current projections, this growth is expected to continue, bringing even greater pressure to a strained school system.

As outlined in the School Building Project Consensus Plan (March 2015), the following are long-term goals for the public school system:

- Develop and implement plans that will provide sufficient educational space in all schools, and an equitable distribution of students among schools,
- Minimize disruptions to students, and
- Avoid extremes of over- or under-utilization of school space

In addition to building projects, redistricting is a common tool used by school systems to redistribute student populations and promote better use of overall facilities. Given current conditions, the School Committee is most interested in exploring redistricting plans that would shift school density away from more-crowded schools toward Estabrook at the north end of town. However, the potential benefits of any redistricting plan may be based on untested assumptions and thus study was initiated to explore potential redistricting strategies.

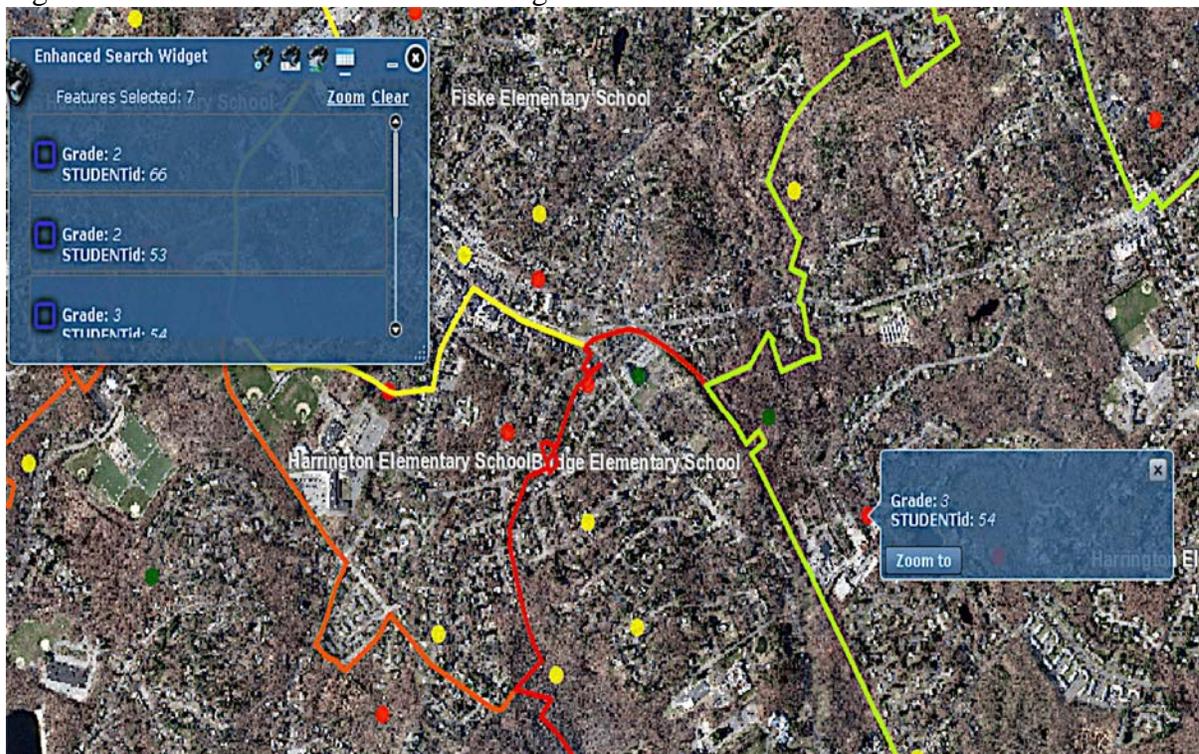
### *Technical Capacity*

If and when the School Committee decides to proceed with any form of redistricting, the Town and school department has the data, necessary technology tools, and trained staff that will be needed.

The Town of Lexington currently holds a license for Ersi, which includes a free Geographic Information System (GIS) tool geared specifically for redistricting. Esri's GIS decision-making tools for redistricting allow the GIS user to process multiple automated reallocation scenarios of school facility assets, based on the school populations within each district.

According to the Town's GIS / Database Administrator, with the appropriate data, a web application can be quickly created that allows a user to change a current Lexington School district boundary and see how many students will be added or subtracted(see Figure 1 for an example based on simulated student information).

Figure 1. Screen Shot of Ersi Redistricting Software



Lexington Public Schools collects and maintains information on current students (e.g. grade, address) and employs staff that can quickly prepare data files to populate this web application. Kindergarten pre-registration information and enrollment projections are also available.

### *Common Redistricting Strategies*

This next section includes descriptions of common redistricting strategies, the associated pros and cons, and general policy considerations. The information was gathered using publically available documents in Lexington and from similar districts that have recently implemented or considered redistricting options (Belmont, Arlington, Newton, Brookline, Wellesley, and Wayland). In addition, key staff members were contacted from Arlington, Newton, Belmont, and Brookline to gather specific information about buffer zones.

**Fixed District Lines:** Based on identified needs, new districts lines are determined and generally fixed for multiple years. Students living within specified borders are automatically assigned to a school within the fixed district, unless an exception is made for a policy reason.

#### Pros

- Provides certainty for families within each district. Parents/guardians can buy a home knowing which school their child(ren) will be assigned
- Creates neighborhood schools. Children within a neighborhood will have a shared experience of going to same school over multiple years
- Simplifies the administrative procedure to assign students(assignment based on student address)
- Continues LPS method of redistricting
- Buses only go to one school

#### Cons

- Does not include a mechanism to readjust student populations if there is a major shift in enrollment over time

#### Specific Policy Considerations

- Does the method of redistricting maintain historically defined neighborhoods?

**Fixed District Lines including Specified Buffer Zones:** A “buffer zone” is defined as a specified area between two or more schools districts that permits individual addresses to be assigned to two or more schools. All other district lines are fixed and students living within borders are automatically assigned to one school based on address. Examples of redistricting maps depicting buffer zones from Brookline and Newton can be found in Appendix A.

#### Pros

- Usually allows siblings to attend the same school
- Allows for adjustments to accommodate population shifts
  - Arlington and Newton both report that this has helped balance overall school enrollment levels. Staff from Newton state that buffer zones have been an invaluable tool, especially when school buildings are at or above capacity. However, contacted staff acknowledge they have no

evidence that Buffer Zones have led to fewer classrooms needed or smaller class sizes

- No impact on students already enrolled in schools
- Can be designed to target areas of high need (e.g. areas of high density, high growth, or based on space availability)

#### Cons

- Creates uncertainty for new families regarding where their children will attend elementary school
- Reduces the benefits of a neighborhood school
- There is no way to be sure that a specific buffer zone will adequately address overcrowding over time; there is no way to predict with absolute certainty where future families will move
- The administrative processes are reported to be very time consuming (as reported by both Newton and Arlington)

#### Specific Policy Considerations

- How is date of entry/registration considered?
- How will students with siblings be assigned?
- Who makes final placement decisions?
- What is the role of parent preference?
- How long will buffer zones be implemented?

**Redistricting by Grade:** Redistribution of students is achieved by moving an entire grade of students from an overcrowded school to a school with available space.

#### Pro:

- High probability the plan will redistrict the excess number of students from the overcrowded school to a school with space (e.g. a grade can be moved for one year or longer)
- Limits impact to one grade

#### Con:

- Can increase the number of transitions students have throughout K-12 education
- Creates uncertainty for families if used as a short-term solution
- Likely to increase busing costs

#### Specific Policy Considerations

- How permanent is redistricting by grade?
- Do we have space to house a given grade or grades of students?

#### *Other Considerations Common to All Redistricting Strategies*

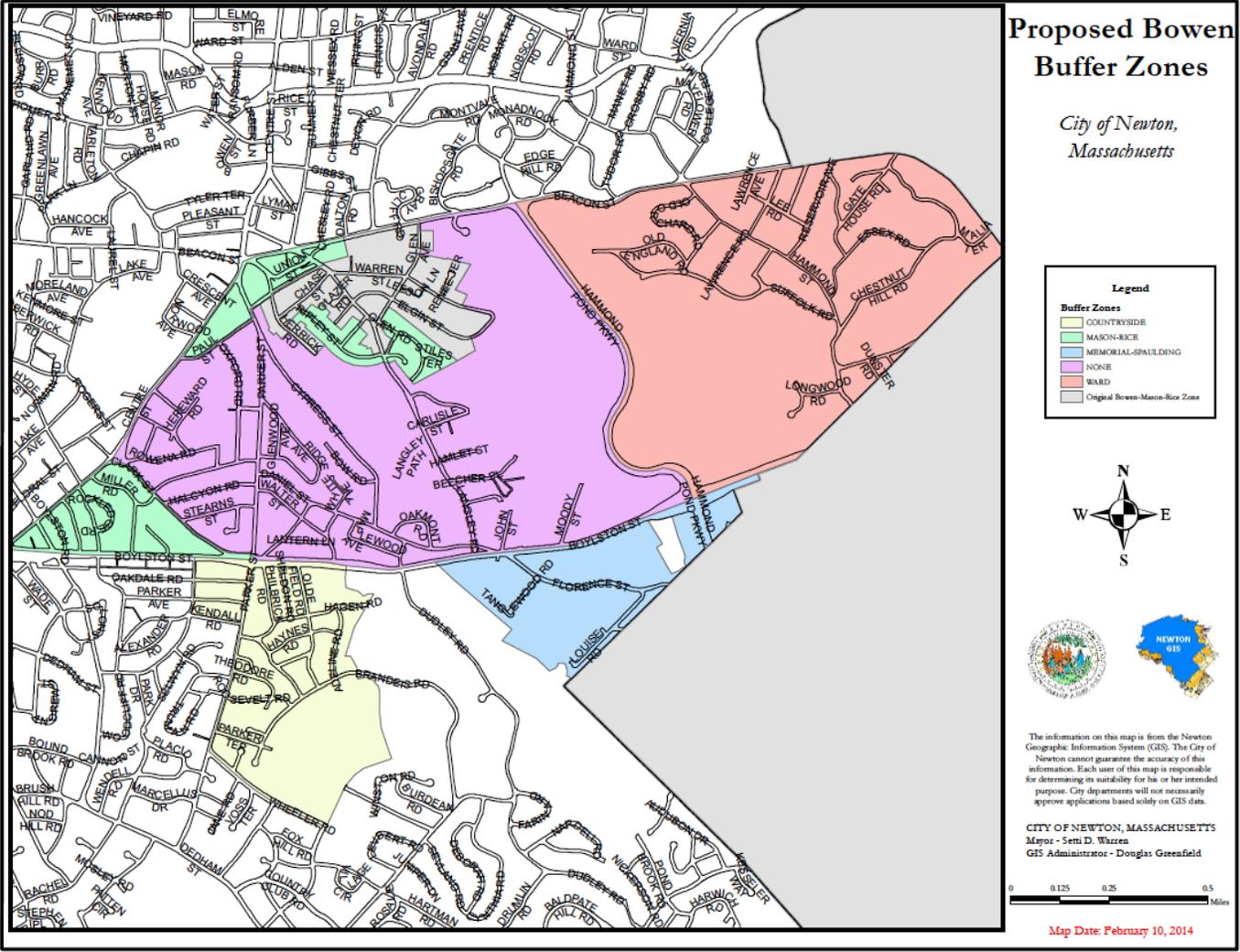
The outline below lists common questions to all redistricting strategies and should be studied when determining implementation and related policies.

- How does redistricting affect bus routes?
- What is the impact on safe walking routes to school?
- How might school assignments impact the number of parents choosing to travel to school by car?
- What are the likely or planned housing developments that might increase enrollment pressures at particular schools?
- What long-term building plans may be implemented that may impact the stability of redistricting plans?

### *Limitations of This Report*

Though attempts were made to get community and parent perspectives from information available online, stakeholders from these groups were not contacted specifically as part of this report.

Appendix A  
 Examples of Buffer Zones in Other Communities



# SCHOOL DISTRICTS AND BUFFER ZONES



## LEGEND

- Buffer Zones for:
- BAKER-HEATH
  - BAKER-HEATH-LINCOLN-RUNKLE
  - DEVOTION-LAWRENCE
  - DRISCOLL-DEVOTION
  - DRISCOLL-RUNKLE
  - HEATH-LINCOLN
  - LINCOLN-RUNKLE
  - PIERCE-LAWRENCE
  - PIERCE-LINCOLN
  - LINCOLN-PIERCE-RUNKLE
  - School District Boundary
  - Street Center Line
  - Town Boundary

## DATA SOURCES

**SCHOOL DISTRICTS:** This data layer is created by Brookline GIS based upon the street centerline layer developed by Boston Edison and the hard copy school district map provided by the school department.

**SCHOOL BUFFER ZONES:** This data layer is created by Brookline GIS based upon the parcel boundaries and the address list from the school department. Updated on 06/14/2001, 08/27/2002 and 06/16/2004 according to changes made by the School Committee.

## LOCUS MAP



**BOARD OF SELECTMEN**  
 Robert E. Chisholm  
 Joseph T. Collier  
 Gilbert R. Day, Jr.  
 Michael Sizer  
 Michael Vignelli

**TOWN ADMINISTRATOR**  
 Richard J. Kellner



**GIS STEERING COMMITTEE**  
 Joseph Chisholm  
 Joseph Collier  
 Gilbert Day, Jr.  
 Michael Sizer  
 Michael Vignelli  
 Richard Kellner  
 Greg Wang

