

## WXY architecture and urban design

224 Centre Street, 5th Floor, New York, NY 10013  
Tel 212.219.1953 Fax 212.274.1953 Web [www.wxystudio.com](http://www.wxystudio.com)

### Principals

Claire Weisz  
Mark Yoes  
Layng Pew  
Adam Lubinsky

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Peter Sloan  
Manager, Strategic Planning  
Boston Public Schools  
26 Court Street  
Boston, MA 02108

### **RE: Initial Assessment of Alternatives to the BPS Assignment Policy**

Dear Mr. Sloan,

As requested by the External Advisory Committee, we are submitting to you our initial assessment of six alternatives to the Boston Public Schools Assignment Policy, as presented to the External Advisory Committee on October 10, 2012.

WXY is a planning and design firm based in New York City. WXY's planning work engages local communities and city agencies on a range of urban challenges – such as spatial planning, brownfield development and infrastructure planning - through the use of GIS, web-enhanced public forums, and planning expertise.

In the following pages you will find our response to these alternatives.

Yours truly,



Dr. Adam Lubinsky, AICP  
Managing Principal, WXY

## INITIAL ASSESSMENT OF ALTERNATIVES TO THE BOSTON PUBLIC SCHOOLS ASSIGNMENT POLICY

This initial assessment was conducted by Dr. Adam Lubinsky, AICP, Managing Principal of WXY, and George Janes, AICP. Dr. Lubinsky has worked extensively in the area of social infrastructure planning and wrote his Ph.D. on the impacts of school choice policies on cities. George Janes, AICP, an Associate of WXY, is a key collaborator with extensive experience applying analytical models to urban planning issues.

The alternative proposals for the BPS Assignment Policy offered a range of useful and creative approaches to assigning children to BPS schools that should inform the city's decision-making. The six proposals presented on October 10, 2012 also offered important ideas that extended beyond strictly school assignment issues, and while these suggestions should be considered, the initial assessment provided here does not focus on them.

In order to frame a basic evaluation of each alternative proposal, six criteria have been considered:

- **Walkability** (the degree to which the proposal enables children to attend schools near home)
- **Capacity** (the proposal's ability to balance "supply and demand" within existing facilities)
- **Distribution of programs** (e.g., the way the proposal sites SPED and ELL in schools)
- **Demographic "balance"** (the likely impacts the proposal would have on the socio-economic and racial diversity of schools across the city)
- **Predictability** (the degree to which the proposal facilitates predictable assignments for children)
- **Access to quality** (the likely impacts the proposal would have on the equity of access to quality schools across the city) – this criteria still requires further definition, and is discussed in limited terms

It is important to note that the performance of these proposals could depend on how they are implemented (e.g. grandfathering) and how flexible they are over time. These issues will be called out in basic notes where relevant. Given the limited time, resources and data available to create these alternative proposals, it is unsurprising that they do not necessarily address all the criteria or, as in many cases, there is not yet enough detail to allow for an assessment beyond a qualitative appraisal.

*To help frame the discussion around these criteria, the information below relates to the existing conditions in the current 3-zone assignment system. Numbers are based on 79 schools, grades K-5, and does not include the city-wide schools. Walkzones have been approximated to a 0.75 "as the crow flies" distance.*

### Walkability

- 37% of students go to their walkzone school
- this varies from 7% - 86% across the city
- 13 schools have 50+% walkzone students
- The 13 schools are in denser areas

### Capacity

- There is spare capacity in the BPS system
- Neighborhoods with crowded schools include: South Boston, Hyde Park, Roxbury, Jamaica Plain, Mattapan, South Dorchester

### Distribution of programs

- Approx. 50% of schools have ELL programs
- Approx. 50% of these schools are 25%+ ELL
- Most schools have specialized programs for students with disabilities

### Demographic balance

- 71% in BPS are eligible for free/reduced lunch
- 25% of schools differ by 20% from 71% average
- 87% of BPS students are non-white
- 56% of schools differ by 10% from 87% average

### Access to quality

- 71% of students have a school with a 1.0 or 1.5 MCAS Snapshot score within 1 of their 4 closest schools
- All zones have multiple schools with MCAS Snapshot scores of 1.0 or 1.5

### Predictability

- Assignment to schools is currently not predictable by any measure

**ALTERNATIVE PLAN: QUALITY CHOICE PLAN (QCP) (City Councilors John Connolly and Matt O'Malley, State Representatives Linda Dorcea Forry, Ed Coppinger, Nick Collins, and Russell Holmes)**

This assessment addresses a few elements of the many ideas set out by the Quality Choice Plan. The elements most directly relevant to the six criteria are the proposal to allow:

- Students guaranteed a seat at one of their four closest schools or one of 16 magnet schools around the City.
- A commitment to eight new fully inclusive schools (30% of seats to students with disabilities) and nine new dual-language (50% of seats to ELL learners) schools.

### 1. Walkability

Of the students not attending the magnet schools in the QCP Plan, a very high percentage would likely be assigned to a walkzone school. The 16 magnet schools would entail about 25% of the BPS seats, some of who may also be coming from within walking distance. The average distance to and from school overall would certainly decrease from the current average and fewer bus trips, but granting city-wide access to magnets would create some long and potentially complex bus routes.

**Summary:** The concept of assigning students centered on their home address rather than zone boundaries is more efficient in terms of matching children with schools close to home.

### 2. Capacity

The proposal would present problems matching supply and demand based on the current school facilities. These problems are a function of Boston's distribution of school and geography, which includes areas of variable density and many edge conditions where schools have limited student catchments near city boundaries. As a result, this creates a range where there is a school (Otis Elementary) that has 3,000 students who would list that school as one of their four closest, and there is a school (Perry K-8) that has only 200 students that can count the school as one of their four closest. This degree of variation means that not only would there be areas where schools are heavily over-capacity, but there would also be schools that are heavily under-utilized as a result. While implementation approaches such as grandfathering may allow for facilities to scale up to meet the capacity challenges, the issues of under-enrollment could create chronic problems.

**Summary:** A non-zone based approach of this nature creates challenges to controlling utilization rates, and this approach has few precedents. However, there may be ways of varying the number of schools that students are guaranteed a seat at (e.g. guaranteeing children a seat at one of their six closest schools in dense areas – which could in turn provide greater access to quality seats - and one of their three closest schools in less dense areas).

### 3. Distribution of programs

These comments do not address the educational aspects of the QCP Plan's proposal for eight new fully inclusive schools (30% of seats to students with disabilities) and nine new dual-language (50% of seats to ELL learners) schools. This approach may offer unique ways of managing the capacity challenges inherent within the QCP. While current conditions spread ELL and SPED learners throughout many schools, it would be possible to concentrate these learners in the more under-utilized schools.

**Summary:** The proposed distribution of programs could play a role in helping to balance capacity, although this approach may have educational and transportation-related consequences.

### 4. Demographic balance

The proposal to send children to one of their four closest schools could result in concentrations of less well-balanced schools across the city, in terms of socio-economic and racial mix. The provision of 16 magnet schools, which would be approximately 25% of the BPS seats, could potentially facilitate environments with a broader socio-economic and racial mix, although this cannot be foreseen within a lottery-based system. Many school districts "control" mix by reserving capacity for particular students (e.g. based on what census tract they live in or their free/reduced lunch status).

**Summary:** A non-zone based approach of this nature does not provide the same ability that zone-based approaches have in terms of drawing boundaries that work to diversify student populations, but the magnet schools could serve to create a broader mix of students.

## **QUALITY CHOICE PLAN (QCP) continued:**

### **5. Predictability**

Assuming that capacity can be met within the schools, guaranteeing a seat within one of a student's four student's top choice of one of those four schools is highly variable, given that schools have dramatically different numbers of students nearby. It should also be noted that the high number of magnet schools provides a larger opportunity to be assigned to one of them.

**Summary:** A non-zone based approach of this nature does not provide the same ability that zone-based approaches have in terms of providing equal access unless it is made more responsive by varying the number of schools across the different population densities.

### **6. Access to quality**

About 70% of students currently have access to a school with a 1.0 or 1.5 MCAS Snapshot score (e.g., one measure of a high performing school) as one of their four closest schools. In the QCP Plan, magnet schools would provide an additional option for those 30% of kids who do not have access to a 1.0 or 1.5 MCAS Snapshot score as one of their four closest schools. It is worth noting that the QCP's designated magnet schools currently have an average MCAS Snapshot score of 2.19.

**Summary:** A non-zone based approach of this nature does not provide the same ability that zone-based approaches have to determine boundaries for zones with a range of "quality" schools.

**General note:** It should be emphasized that non-zone based approaches *can, in theory,* respond more fluidly than fixed zones to changes over time in quality, demographics, and density.

## ALTERNATIVE PLAN: PAIRED ZONE PLAN (Josh Weiss)

This assessment addresses one of the central elements of the Paired Zone Plan:

- To create several smaller zones and pairs them with another nearby zone in to balance capacity, diversity, and access to quality. The plan allows students to apply to schools within their zone, schools within one mile of their home or schools in their “paired zone”.

### 1. Walkability

Overall, the Paired Zone proposal to create smaller assignment zones of 3-4 schools would allow more children to go to schools closer to home. Pairing zones could help to rationalize transportation across the city by having groups of children all travelling toward the same zones, but this would still create transportation needs beyond simply a small zone assignment plan.

**Summary:** The concept is an important consideration to facilitate walkability while providing additional access to quality schools, ensuring demographic balance and balancing capacity.

### 2. Balancing capacity

This concept proposes that “paired zones” could, among other things, match areas with large demand with areas of low demand. It is worth noting that small zones, combined with a one-mile walkzone, can make balancing capacity more challenging due to a walkzone’s potential overlap with multiple zones.

**Summary:** This concept is a work-able approach to balancing capacity, although the flow of students in one direction (e.g. toward the under-utilized schools) may suggest that the two paired zones should simply be one zone, even if the zones are not contiguous.

### 3. Distribution of programs

The proposal does not define a position relative to this criterion.

### 4. Demographic balance

Small zones of 3-4 schools in the context of Boston’s current conditions have a limited capacity to establish boundaries that create a demographic balance. The pairing of zones would increase the ability to ensure demographic balance.

**Summary:** This concept is a work-able approach to balancing demographic difference. Given Boston’s geography, it is also possible to create relatively demographically “balanced” contiguous single zones of 6-8 schools.

### 5. Predictability

Smaller zones increase predictability. The pairing of zones would decrease this predictability and potentially create a dynamic where some zones (with more under-utilized and less in-demand lower “quality” schools) are more predictable than high-demand zones.

**Summary:** The predictability of two paired zones may still be more predictable than one single zone of the same size, which makes this a valuable concept to consider.

### 6. Access to quality

Zones could be paired to ensure that the paired zones had an even number of high and low quality schools, meaning that all students would have the opportunity to apply to a high quality school. The plan does not address probability of being assigned to a high quality school.

**General notes:** The concept of pairing zones bears resemblance to Jefferson County, Kentucky’s (which includes Louisville) recent assignment policy. The zones in Jefferson County are not contiguous, and they are organized primarily for ensuring demographic balance. One important note of difference is that Jefferson County and Boston have relatively similar population sizes while Jefferson County is about 400 square miles and Boston is less than 50 square miles in area. The relatively smaller physical size of Boston raises the question as to what the advantages are of “paired zones” that are adjacent to each other might be over single zones that cover the same geography.

## ALTERNATIVE PLAN: HENDERSON 5 - 9 ZONE PLAN (Bill Henderson)

The Henderson plan focuses on smaller assignment zones (5-9) than the current conditions and, in many ways, is similar in both concept and consequence to the BPS 6- and 9-zone proposed assignment plans.

### 1. Walkability

Overall, creating smaller assignment zones improves students' journey to school, as students can only apply to a school nearer to their home. The plan also allows students who are located on the edge of a border to apply to a school in the nearby zone that is within 1 mile (elementary schools) or 1.5 miles (middle schools). Additionally, there are no citywide schools which could reduce overall travel distances and busing. The Henderson plan focuses both the cost saving and the operational aspect of shorter journeys to school, noting that this plan would allow start times no later than 9:00am.

**Summary:** Smaller zones should decrease the journey to school and increase walkability when compared with the current system.

### 2. Balancing capacity

The plan does not determine the boundaries for the 5 to 9 zones it proposes, but zones of this size can be balanced for supply and demand without too much difficulty. The inclusion of walkzone priority with smaller zone assignments creates some unpredictability in matching supply and demand.

### 3. Distribution of programs

The plan includes all programmatic options within each of the smaller zones with the added benefit of shorter journeys to school for all students.

### 4. Demographic balance

Zones of the size proposed can be balanced demographically, but the level of demographic balancing depends on the specifics of where the boundaries are drawn.

### 5. Predictability

Similar to other zone-based options, the Henderson 5-9 Zone Plan is more predictable than the current 3-zone model which has approximately, with the number of schools available to choose from likely to range from 6 to 18 per zone as compared to the current 3-zone system which has more than 20 schools per zone. A 9-zone assignment plan will be more predictable, since the zones will be smaller and typically have fewer schools per zone.

### 6. Access to quality

The Henderson Plan may reduce the number of schools available to students. It may be possible, for example, to draw five zones that each creates better access to quality than the current choices of students in the East Zone of the 3-zone plan. (The process of drawing these lines would require an agreed measure of quality.) Smaller zones also mean potentially fewer students competing for quality seats, and as a result, the chances of getting a quality seat may not change significantly.

## ALTERNATIVE PLAN: MIT OPERATIONS RESEARCH (Peng Shi)

This proposal is very different from the other options. It considers distance to school, neighborhood cohesiveness, and access to quality as an optimization problem. This proposal promises to optimize distance while providing parents the choice of several schools that average to the City-wide average quality measure.

### 1. Walkability

This proposal does not use zones, nor does it use a “closest” school measure like the other proposals. Rather, distance is optimized when selecting a list of quality balanced schools to provide to the parents of an incoming student. Such a system will likely increase the walkability of the system, but how much it would increase the walkability of the system and distance traveled is impossible to measure without more information. It would likely be less walkable than a small zone system, like 23-zone, or a closest school system, but more walkable than current conditions.

### 2. Balancing capacity

School capacity is one of the considerations in the optimization problem. Nevertheless, if the quality measures are highly correlated (e.g. some schools consistently score high on all measures and other schools consistently score low on all measures) there may be over and under-subscribed schools. It is difficult to assess more fully without more information on how it would perform with a real-world quality measure and actual parent selection behavior.

### 3. Distribution of programs

Programs would be assigned in a “separate process,” and are not a part of the proposal reviewed.

### 4. Demographic balance

Demographics are not expressly balanced in the optimization algorithm. Indeed, neighborhood is a consideration to help ensure more efficient journeys to school, which may lead to less demographically balanced schools unless this is integrated into the optimization algorithm.

### 5. Predictability

There is no initial predictability for families in this method. Incoming families would not be able to see a list of potential schools that they could attend based on an address. They would need to apply and wait for those applications to be evaluated and optimized together with all the other BPS applications, at which point their choices would be provided back to parents. At this point in the process, they would have a more predictable set of choices to select from. Choices available would change every year as quality changes and other applicants change. This has the benefit of being a self-adjusting system, which eliminates the need to redraw zone boundaries, but provides parents no certainty on where their non-sibling child would be attending or even what the choices offered would be.

### 6. Access to quality

If BPS could agree upon a multi-dimensional measure of quality that can be uniformly applied to all schools, this method provides all students equal access to quality. Reaching agreement on a long list of quality attributes (e.g. music and art programs) would likely require considerable evaluation of both student desires and the actual quality of the attributes identified in the schools. This process could raise implementation concerns.

**General notes:** This method is technically very interesting, but practical concerns remain which include how it would fit into the BPS assignment process, the predictability of choices it would provide to incoming parents, and the agreed development of multi-dimensional quality data.

## **ALTERNATIVE PLAN: A FENWAY MOM'S PROPOSAL (Lisa Jeanne Graf)**

This plan introduces the concept of “priority zones,” containing three priority schools. Priority zones are zones that are “student-centered” (based on student home addresses), and the priority schools offered would change for each student depending on which schools were closest. At least half of a school’s seats would be reserved for children in the priority zone. This plan adds the closest quality schools to the priority schools so that at least two-thirds of the schools available are quality schools. Schools with the closest appropriate program are also offered to the parents.

### **1. Walkability**

If capacities could be balanced, this plan could be very walkable with many students traveling to one of their three closest schools. Reserved capacity would bring children in from outside neighborhood, but the requirement that those schools be close should also reduce the journey to school even for students that are traveling.

### **2. Balancing capacity**

This plan, as set out, would have serious supply and demand issues, with many schools being oversubscribed while other schools could be under-utilized due to the distribution of schools and students, and the difference in quality between schools. There are many areas where the 50% of seats reserved for “priority” students would be oversubscribed by several times and other areas where those 50% of seats would not fill due to the spatial mismatch between student locations and BPS supply. The method suggests that schools could be added if there are not enough seats in the priority zone, but this could make the priority zone quite large, which lessens its strength in walkability.

### **3. Distribution of programs**

The plan offers families their closest ELL and dual immersion school, but does not state where they would be located. Any method that considers the closest three or four schools will end up with equity and capacity balancing issues since schools themselves are not equal in terms of capacity and their locations.

### **4. Demographic balance**

This method does not explicitly consider demographic balancing, though reserving seats for children from outside the priority zone will help in demographic balancing.

### **5. Predictability**

The priority zone portion of this plan is predictable, since the closest three schools are always priority zone schools. Other schools that are added to the priority schools for capacity, quality or programmatic needs would change every year for every applicant.

### **6. Access to quality**

In this plan every student is guaranteed access to at least two quality schools, which is excellent access. There may, however, be practical issues to providing those choices (see Balancing capacity).



## **ALTERNATIVE PLAN: NEIGHBORHOOD PLUS and KNOW YOUR SCHOOL PLAN (Doug Johnson)**

Neighborhood Plus is based on the concept that Boston would be carved into about 50 small neighborhoods. Students that live in these neighborhoods would be able to choose from five to eight schools that are also offered to the other kids that live in this small neighborhood. These schools may be located in the same small neighborhoods or they may be elsewhere in the City. The schools offered to a particular small neighborhood would be selected for access to quality, program, transportation, and diversity. Schools would serve more than one of these small neighborhoods. The Know Your School portion of the plan is an operational component that allows parents to select a school before the child is ready to attend so that they know where that child's school is before they even start school.

### **1. Walkability**

Because proximity is one of the variables on which schools which serve a small neighborhood are selected, this plan will likely be much better than the current 3-zone system in terms of walkability.

### **2. Balancing capacity**

The matching of schools to small neighborhoods could be balanced so that this plan would balance capacity well. Over time the neighborhood boundaries or the schools offered to a neighborhood would likely have to be adjusted to reflect changes in the supply and demand. The Know Your School portion of this plan, which allows parents to reserve a space in a school before a child even starts at that school may make balancing capacity operationally difficult, however.

### **3. Distribution of programs**

This plan does not provide any detail on where programs should be located, but it does state that the 5-8 schools offered to a small neighborhood would include all appropriate programs.

### **4. Demographic balance**

Because diversity is one of the variables used when matching schools and neighborhoods, this plan will likely be much better than the current system in terms of diversity.

### **5. Predictability**

This plan may perform extremely well in terms of predictability. It provides residents of these small neighborhoods a relatively small list of schools selected for diversity, quality, transportation and program. The Know Your School part of this plan improves predictability by allowing parents to apply to any of those schools early, before their children even starts school, so that they know which school from that small list their child would be attending.

### **6. Access to quality**

Because the number of schools offered to residents of a small neighborhood would be less than the current system, access to quality would likely be lower in this plan when compared with the current system. This is mitigated, however, by using quality as one of the variables used when matching schools to neighborhoods. As quality changes, however, schools offered to particular neighborhoods would also likely have to change, which would impact predictability.

**General notes:** This plan offers an approach not entirely dissimilar to the MIT proposal in its approach to optimization. It proposes to break the city down into 50 small neighborhoods and to provide to people who live in those small neighborhoods choices that are optimized based upon distance, quality, program and capacity. The advantage over the MIT proposal would be a greater level of predictability, and the disadvantage would be that adjustments for change over time (in school quality, population, demographics) would be more cumbersome since neighborhood boundaries would need to be redrawn and/or the schools assigned to neighborhoods would need to be changed.