



K^ESTLE BOOS
a s s o c i a t e s , i n c

Cropper GIS

BPS MASTER PLAN

Review of Student Distance Analysis and Student Assignment

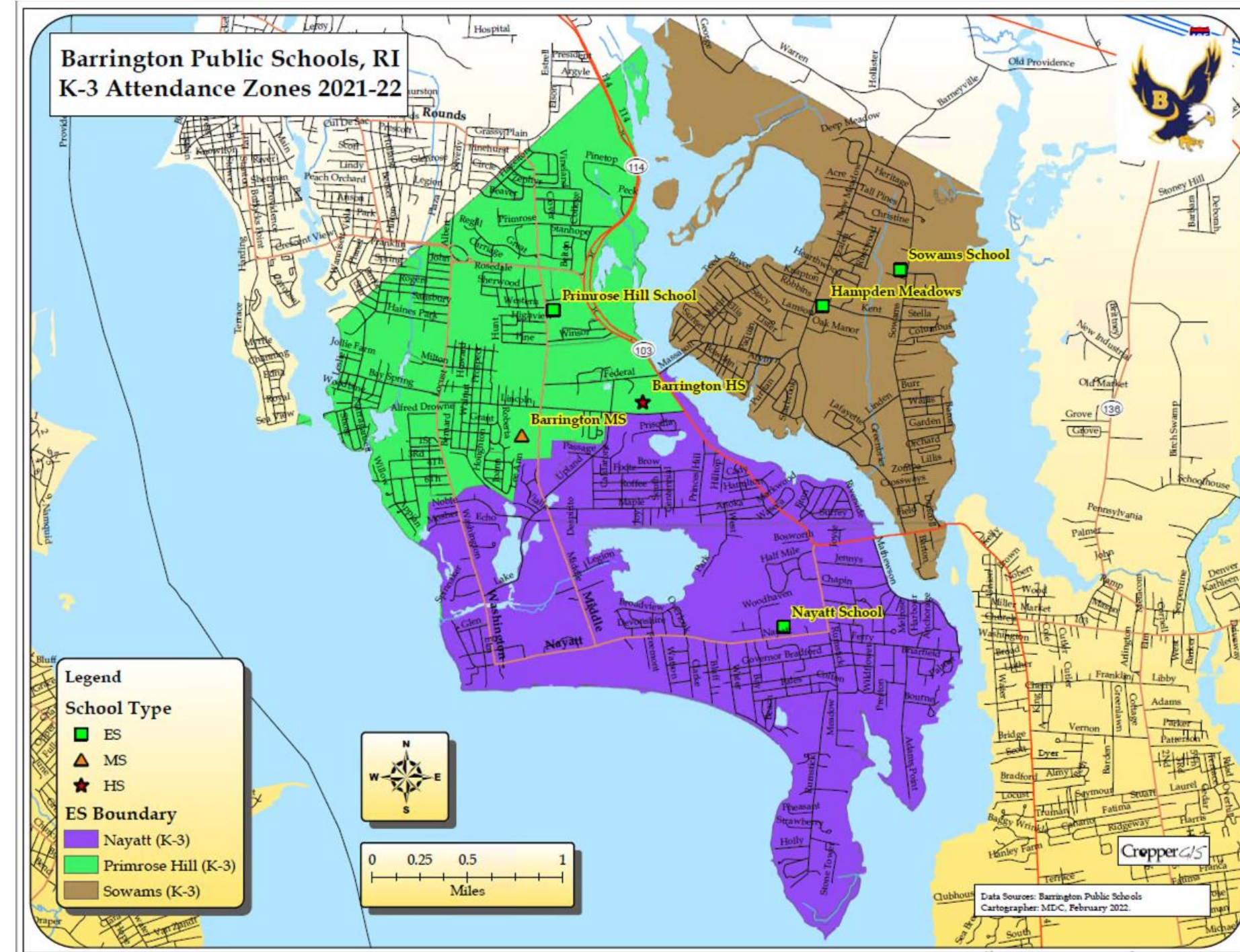
Considerations

OCTOBER 11, 2022

About Cropper GIS Consulting, LLC

K-12 Planning firm with specialization in demographic studies, facilities planning, and school redistricting. Our firm has worked with districts of all sizes across the U.S. and Rhode Island, including:

- Barrington
- East Providence
- Providence
- Cranston
- Central Falls
- East Greenwich
- Warwick
- West Warwick
- Westerly
- Exeter-West Greenwich
- Portsmouth
- Newport
- Burrilville



OVERVIEW OF FIRM

Barrington Public Schools : Current enrollment and utilization

Enrollment and Utilization of current schools has been examined to understand the current state of the district. The table below shows the enrollment, capacity, and utilization of schools within the district.

| School Name | Functional Capacity | Grade Config | PK | KF | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | Total Enrolled | Utilization (Functional) |
|--------------------------|---------------------|--------------|-----------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|----------------|--------------------------|
| Nayatt School | 261 | K-3 | 0 | 74 | 99 | 76 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 354 | 135.6% |
| Primrose Hill School | 256 | PK-3 | 45 | 78 | 77 | 74 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 340 | 132.8% |
| Sowams School | 236 | K-3 | 0 | 69 | 75 | 53 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 267 | 113.1% |
| Hampden Meadows School | 456 | 4-5 | 0 | 0 | 0 | 0 | 0 | 240 | 249 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 489 | 107.2% |
| Barrington Middle School | 980 | 6-8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 258 | 265 | 275 | 0 | 0 | 0 | 0 | 798 | 81.4% |
| Barrington High School | 1147 | 9-12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 321 | 275 | 278 | 244 | 1118 | 97.5% |
| Total | 3336 | | 45 | 221 | 251 | 203 | 241 | 240 | 249 | 258 | 265 | 275 | 321 | 275 | 278 | 244 | 3366 | 100.9% |

Counts are based on the 2021-22 Barrington Public Schools student database.

The table shows that current utilization in all schools that serve PK-5 population are extensively overcrowded. This suggests that redistricting alone will not help alleviate overcrowding that exists in the district's elementary schools.

Middle and High School utilization are running at efficient levels and moving grade levels up into these schools would result in overcrowding of the upper grade schools.



Barrington Public Schools : Assessing student distances to schools

Cropper analyzed student distances to schools within the district. The intent of this is to better understand how schools differ in relation to how far they are from students living within the district.

The average distance for students to each school was calculated for PK-K and 1-5 grades. Also, the shortest and farthest distance is reported to understand how close/far students are from each of the schools.

The table below depicts the results, which shows that Hampden Meadows and Primrose Hill are the shortest distance to school overall for PK-K and 1-5 students. Sowams is the farthest distance from PK-K and 1-5 grade students on average.

Although there are differences, it should be noted that all distances are relatively comparable to each other as the table depicts students within ½ mile on average to schools.

| Network Distance Calculations to Schools (Miles) | | | | | | |
|--------------------------------------------------|---------|------|----------|------|---------|------|
| School | Average | | Shortest | | Longest | |
| | PK-K | 1-5 | PK-K | 1-5 | PK-K | 1-5 |
| Hampden Meadows ES | 2.00 | 1.99 | 0.25 | 0.06 | 3.75 | 3.87 |
| Nayatt ES | 2.12 | 2.07 | 0.07 | 0.01 | 3.62 | 3.71 |
| Primrose Hill ES | 1.88 | 1.94 | 0.15 | 0.04 | 3.96 | 4.09 |
| Sowams ES | 2.38 | 2.38 | 0.20 | 0.08 | 3.95 | 3.99 |



Barrington Public Schools : Assessing student distances to schools

Cropper also created a ¾ mile buffer from each school based on the road network. The purpose for this is to better understand how many students live within a potential walkable area from each school.

The table below depicts the number of students per grade level living within ¾ miles of each school.

Sowams has around half as many students living within ¾ miles of the site when compared to other schools.

Nayatt has the greatest number of students living within ¾ miles of the school in both PK-K and 1-5 grades.

Hampden Meadows and Primrose have comparable numbers living within ¾ miles.

| Grade Level | Students within 3/4 mile Network Distance | | | | |
|-------------|-------------------------------------------|----------------------|---------------|---------------|-------|
| | Hampden Meadows | Primrose Hill School | Sowams School | Nayatt School | Total |
| PK | 4 | 12 | 2 | 4 | 22 |
| KF | 24 | 24 | 13 | 34 | 95 |
| 1 | 25 | 26 | 19 | 38 | 108 |
| 2 | 30 | 31 | 12 | 34 | 107 |
| 3 | 30 | 19 | 13 | 45 | 107 |
| 4 | 30 | 29 | 16 | 44 | 119 |
| 5 | 34 | 28 | 10 | 26 | 98 |
| PK-K Total | 28 | 36 | 15 | 38 | 117 |
| 1-5 Total | 149 | 133 | 70 | 187 | 539 |
| Grand Total | 177 | 169 | 85 | 225 | 656 |

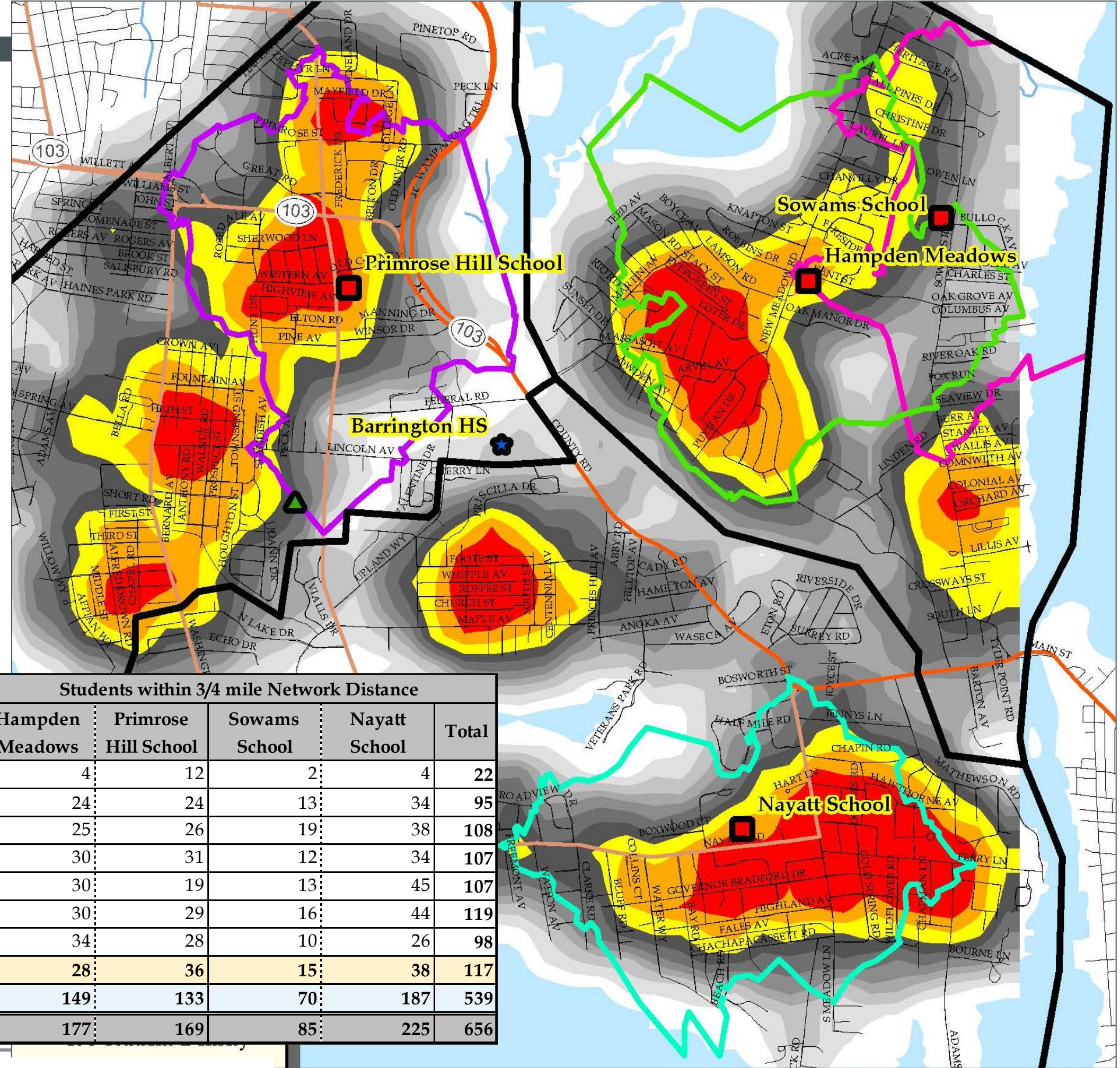


The map to the right shows student density in the form of a ‘heat map’.

The ¾ mile network buffers are shown around each school as a bold, hollow outline.

It is important to note that these have not been further filtered down to remove safety barriers (i.e. major roads) or add walking paths that may further connect communities, so they shouldn’t be considered as pure walk zones.

It should also be noted that there are dense pockets of students in communities just immediately outside of the buffer areas, which those families/students are likely choosing to walk/ride bikes to schools.



| Grade Level | Students within 3/4 mile Network Distance | | | | |
|-------------|-------------------------------------------|----------------------|---------------|---------------|-------|
| | Hampden Meadows | Primrose Hill School | Sowams School | Nayatt School | Total |
| PK | 4 | 12 | 2 | 4 | 22 |
| KF | 24 | 24 | 13 | 34 | 95 |
| 1 | 25 | 26 | 19 | 38 | 108 |
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| 5 | 34 | 28 | 10 | 26 | 98 |
| PK-K Total | 28 | 36 | 15 | 38 | 117 |
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| Grand Total | 177 | 169 | 85 | 225 | 656 |



Barrington Public Schools : Testing Master Plan Considerations

Cropper worked to test the planning team’s draft plans to house grades 1-5 at Hampden Meadows and Primrose Hill School, with the Nayatt School serving grades PK-K for the entire district.

The first model that was explored aimed to move as few students as possible by redistricting students from the current Nayatt School to either Primrose Hill or Hampden Meadows, assuming they will both have a capacity of 625. Areas were chosen to be reassigned to either school based on proximity and ease of travel to the school, while keeping communities together and not drawing lines down residential roads.

The table below shows that zones could be modeled to provide similar numbers of students to each school if they were constructed for 625 students, and the PK-K school at assumed 350 capacity has adequate space.

It should be noted that there could be multiple variations of the map to achieve a similar balance of enrollment, and the intent of this exercise is to test / confirm planned capacities for the new buildings and determine if practicable boundaries could be drawn.

| School Name | Functional Capacity | Option Capacity | Grade Config | Grade Config | 2021-22 Enrollment | | | | | | | | | Redistricting Option | | | | | | | | |
|------------------------|---------------------|-----------------|--------------|--------------|--------------------|-----|-----|-----|-----|-----|-----|----------------|--------------------------|----------------------|--------|--------|--------|--------|--------|--------|----------------|-------------|
| | | | | | PK | KF | 1 | 2 | 3 | 4 | 5 | Total Enrolled | Utilization (Functional) | PK | KF | 1 | 2 | 3 | 4 | 5 | Total Enrolled | Utilization |
| Nayatt School | 261 | 350 | K-3 | PK-K | 0 | 74 | 99 | 76 | 105 | 0 | 0 | 354 | 135.6% | 45 | 221 | | | | | | 266 | 76.0% |
| Primrose Hill School | 256 | 625 | PK-3 | 1-5 | 45 | 78 | 77 | 74 | 66 | 0 | 0 | 340 | 132.8% | | | 121 | 117 | 107 | 113 | 135 | 593 | 94.9% |
| Sowams School | 236 | Closed | K-3 | Closed | 0 | 69 | 75 | 53 | 70 | 0 | 0 | 267 | 113.1% | Closed | Closed | Closed | Closed | Closed | Closed | Closed | Closed | Closed |
| Hampden Meadows School | 456 | 625 | 4-5 | 1-5 | 0 | 0 | 0 | 0 | 0 | 240 | 249 | 489 | 107.2% | 0 | 0 | 130 | 86 | 134 | 127 | 114 | 591 | 94.6% |
| Total | 1209 | 1600 | | | 45 | 221 | 251 | 203 | 241 | 240 | 249 | 1450 | 119.9% | 45 | 221 | 251 | 203 | 241 | 240 | 249 | 1450 | 90.6% |

Counts are based on the 2021-22 Barrington Public Schools student database.

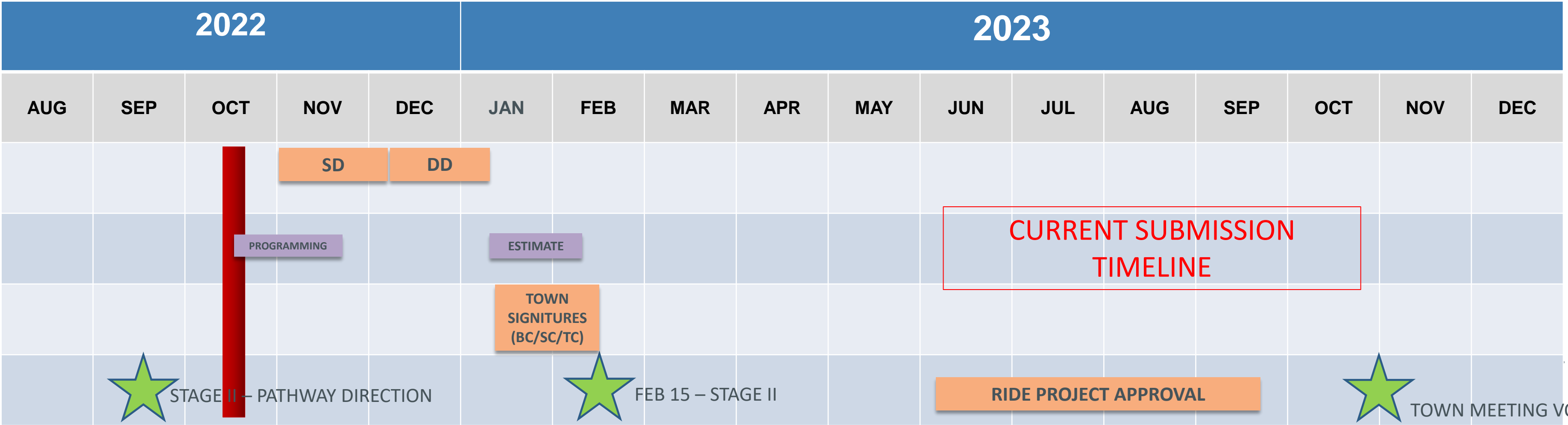
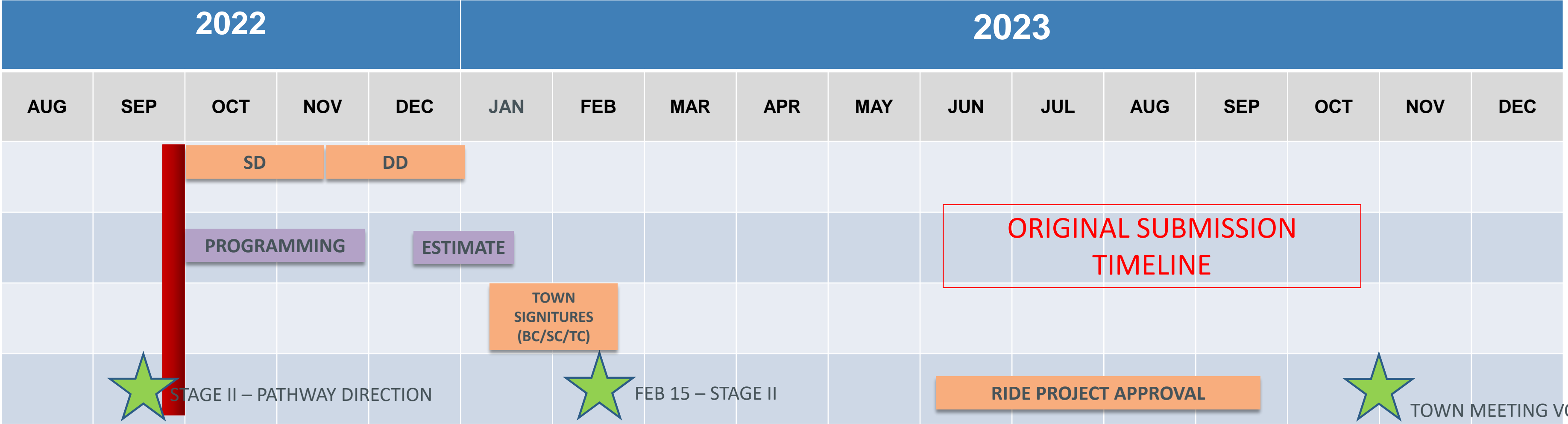


Barrington Public Schools : Summary of Findings and Recommendations

The following is a summary of findings as a result of the most recent analysis that was performed.

- Sowams school is the farthest distance from the density of school-aged population when compared to the other elementary schools and has the fewest number of students within walkable distance to the school when compared to the other schools.
- The planned capacity of 625 students for Primrose Hill and Hampden Meadows for grades 1-5 and 350 for Nayatt is ideal and optimal for both buildings, and attendance boundaries can be drawn efficiently to populate both buildings while adhering to best practices.
- The focus at this point should continue to be on finalizing a facilities master plan regarding location and size of facilities.
- A more detailed review/study of boundaries should be pursued once the master plan is complete, which incorporates public input/feedback on a variety of boundary options.





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