NESDEC
New England School Development Council

MERRIMACK SCHOOL DISTRICT, NH

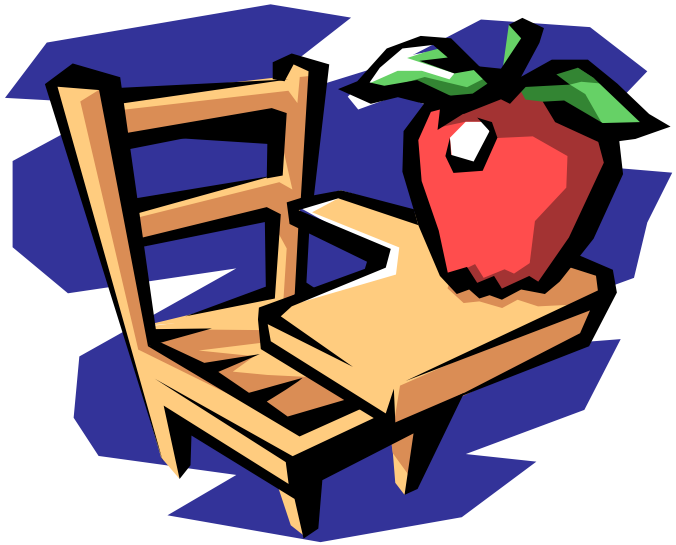
PK-12 School Facilities Best Educational Use Study

OCTOBER 2014

NESDEC PROJECT TEAM

- **Donald G. Kennedy, Ed.D., Executive Consultant**
- **John H. Kennedy, M.A., Consultant**
- **Arthur L. Bettencourt, Ed.D., Executive Director**

INTRODUCTION



INTRODUCTION

NESDEC entered into an agreement with the Merrimack, NH (SAU#26) School District to develop a PK-12 School Facilities Best Educational Use Study. The goal of the project was to provide the district with an analysis of the feasibility of locating the Central Office and Special Services Office in one of the currently existing public school facilities.

Good long-range planning requires a specific mindset, temporarily casting aside more immediate concerns in order to think long-range. However, aspects of this report can be useful in making near-term decisions in two respects: 1) providing a better understanding of the long-term future of each building, thereby suggesting the assignment of grade levels to buildings in a manner that is consistent with the District's long-term plan; and 2) as a guide to budget planning, so funds can be earmarked for purposes that are consistent with the intended long-range use of each facility.

INTRODUCTION – CONT.

SCOPE

Enrollment Trend Analysis

In developing enrollment projections for the District, the NESDEC Team analyzed District and municipal records, 2010 U.S. Census Data, birth data, and information provided by the Merrimack Community Development Office and the Merrimack Chamber of Commerce.

Instructional Program Review and Facility Best Use Analysis

The study also included an analysis of present and planned school programs and the facilities needed to provide these programs. A member of the NESDEC Study Team visited all Merrimack District schools while in session and met with people in the schools. School documents, including District goals and curriculum and program information, were studied.

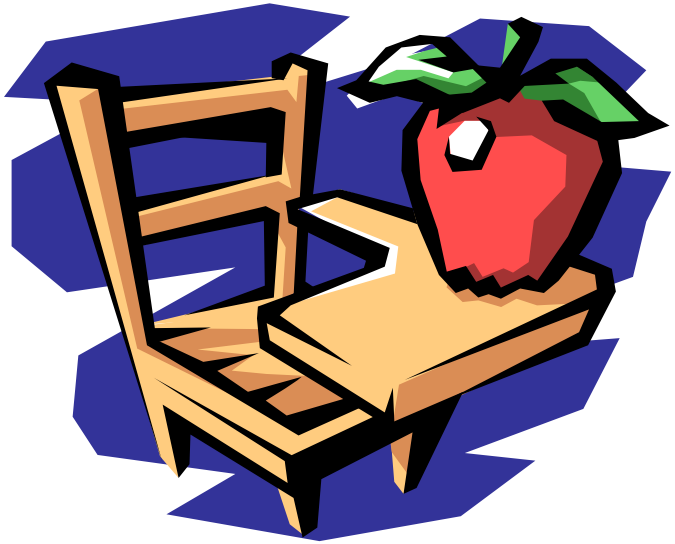
INTRODUCTION – CONT.

FINDINGS

Using information gained from its analysis of enrollment trends, and coupled with its instructional programming/facility capacity analysis, NESDEC has developed several findings regarding alternatives that the district may be considering as it moves forward with decision-making related to the relocation of the Central Office and the Special Services Office.

The findings are designed to serve as a catalyst for further analysis and discussion. Thus, this document should be considered not as an end-product, but rather, as a beginning point for future planning (see Slides 81-94).

ENROLLMENT PROJECTIONS



Merrimack, NH SAU#26 Historical Enrollment

School District: **Merrimack, NH SAU#26** **10/14/2014**

Historical Enrollment By Grade

Birth Year	Births	School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
1999	335	**2004-05**	0	0	324	334	334	378	386	376	393	420	405	434	431	408	115	4738	4738
2000	327	**2005-06**	40	246	273	329	337	341	378	390	392	385	410	397	427	414	0	4719	4759
2001	323	**2006-07**	52	221	335	271	334	350	362	388	392	397	397	404	395	412	0	4658	4710
2002	332	**2007-08**	49	254	292	338	270	338	353	360	385	382	376	384	399	395	0	4526	4575
2003	274	**2008-09**	58	238	336	292	330	284	329	354	356	387	383	373	371	413	0	4446	4504
2004	266	**2009-10**	79	228	299	329	298	335	287	329	345	356	384	377	367	385	0	4319	4398
2005	300	**2010-11**	70	215	310	297	327	301	341	289	323	342	335	385	370	406	0	4241	4311
2006	230	**2011-12**	77	206	277	315	294	325	298	344	288	326	344	333	379	383	0	4112	4189
2007	283	**2012-13**	91	195	269	274	322	296	314	286	330	281	322	342	331	385	0	3947	4038
2008	267	**2013-14**	102	215	256	276	266	330	285	313	280	324	285	326	344	353	0	3853	3955
2009	266	**2014-15**	118	213	278	256	279	275	323	284	313	281	328	293	331	354	0	3808	3926

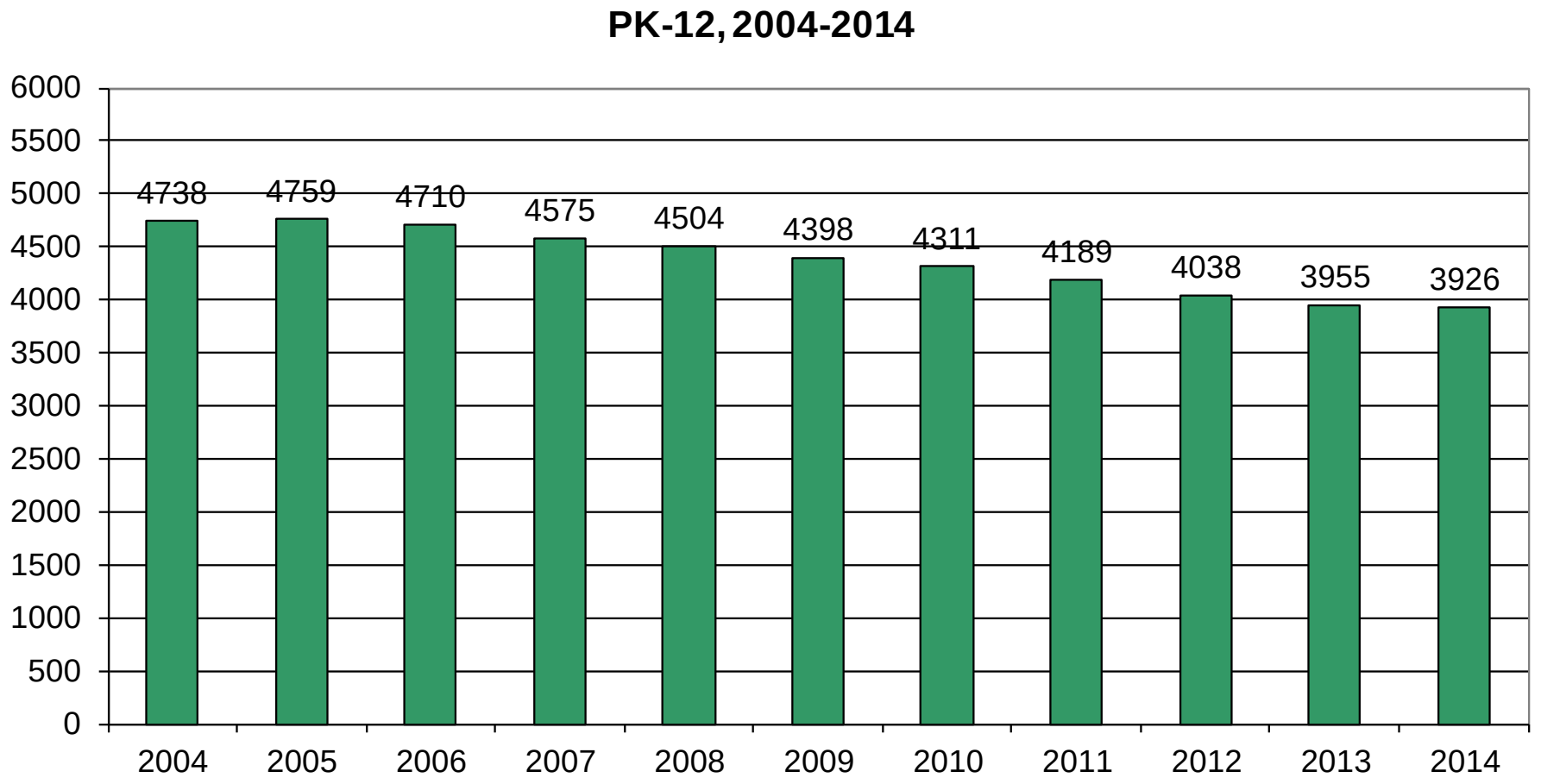
Historical Enrollment in Grade Combinations

Year	K-4	5-6	K-6	K-8	5-8	PK-4	7-8	7-12	9-12
2004-05	1370	762	2132	2945	1575	1370	813	2491	1678
2005-06	1526	768	2294	3071	1545	1566	777	2425	1648
2006-07	1511	750	2261	3050	1539	1563	789	2397	1608
2007-08	1492	713	2205	2972	1480	1541	767	2321	1554
2008-09	1480	683	2163	2906	1426	1538	743	2283	1540
2009-10	1489	616	2105	2806	1317	1568	701	2214	1513
2010-11	1450	630	2080	2745	1295	1520	665	2161	1496
2011-12	1417	642	2059	2673	1256	1494	614	2053	1439
2012-13	1356	600	1956	2567	1211	1447	611	1991	1380
2013-14	1343	598	1941	2545	1202	1445	604	1912	1308
2014-15	1301	607	1908	2502	1201	1419	594	1900	1306

Historical Percentage Changes

Year	K-12	Diff.	%
2004-05	4738	0	0.0%
2005-06	4719	-19	-0.4%
2006-07	4658	-61	-1.3%
2007-08	4526	-132	-2.8%
2008-09	4446	-80	-1.8%
2009-10	4319	-127	-2.9%
2010-11	4241	-78	-1.8%
2011-12	4112	-129	-3.0%
2012-13	3947	-165	-4.0%
2013-14	3853	-94	-2.4%
2014-15	3808	-45	-1.2%
Change		**-930**	**-19.6%**

Merrimack, NH SAU#26 Historical Enrollment



Merrimack, NH SAU#26 Projected Enrollment

School District: **Merrimack, NH SAU#26** **10/14/2014**

Enrollment Projections By Grade*

Birth Year	Births		School Year	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	UNGR	K-12	PK-12
2009	266		**2014-15**	118	**213**	**278**	**256**	**279**	**275**	**323**	**284**	**313**	**281**	**328**	**293**	**331**	**354**	**0**	**3808**	**3926**
2010	253		**2015-16**	119	**205**	**278**	**279**	**256**	**285**	**267**	**318**	**278**	**309**	**282**	**332**	**294**	**343**	**0**	**3726**	**3845**
2011	227		**2016-17**	120	**184**	**267**	**279**	**279**	**262**	**276**	**263**	**311**	**274**	**310**	**285**	**334**	**305**	**0**	**3629**	**3749**
2012	229	(prov.)	**2017-18**	121	**199**	**240**	**268**	**279**	**285**	**254**	**272**	**258**	**307**	**275**	**314**	**286**	**346**	**0**	**3583**	**3704**
2013	248	(est.)	**2018-19**	122	**216**	**259**	**241**	**268**	**285**	**276**	**250**	**266**	**255**	**308**	**278**	**316**	**297**	**0**	**3515**	**3637**
2014	245	(est.)	**2019-20**	123	**213**	**287**	**260**	**241**	**274**	**276**	**272**	**245**	**263**	**256**	**312**	**279**	**328**	**0**	**3506**	**3629**
2015	240	(est.)	**2020-21**	124	**209**	**283**	**288**	**260**	**246**	**266**	**272**	**266**	**242**	**264**	**259**	**314**	**289**	**0**	**3458**	**3582**
2016	238	(est.)	**2021-22**	125	**207**	**278**	**284**	**288**	**266**	**238**	**262**	**266**	**263**	**243**	**267**	**260**	**326**	**0**	**3448**	**3573**
2017	240	(est.)	**2022-23**	126	**209**	**275**	**279**	**284**	**294**	**258**	**234**	**257**	**263**	**264**	**246**	**268**	**270**	**0**	**3401**	**3527**
2018	242	(est.)	**2023-24**	127	**211**	**278**	**276**	**279**	**290**	**285**	**254**	**229**	**254**	**264**	**267**	**247**	**278**	**0**	**3412**	**3539**
2019	241	(est.)	**2024-25**	128	**210**	**281**	**279**	**276**	**285**	**281**	**281**	**249**	**226**	**255**	**267**	**268**	**256**	**0**	**3414**	**3542**

*Projections should be updated on an annual basis.

Based on an estimate of births

Based on children already born

Based on students already enrolled

Projected Enrollment in Grade Combinations*

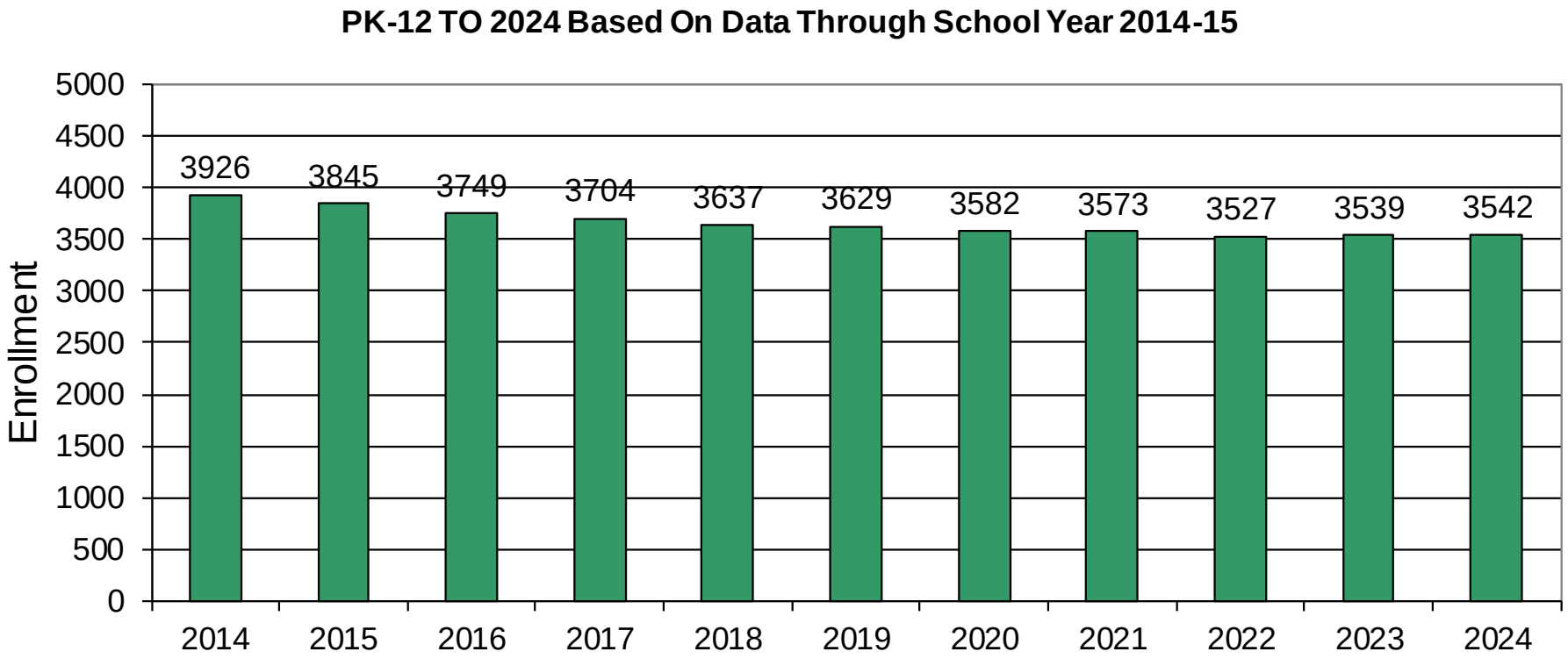
Year	K-4	5-6	K-6	K-8	5-8	PK-4	7-8	7-12	9-12
2014-15	1301	607	1908	2502	1201	1419	594	1900	1306
2015-16	1303	585	1888	2475	1172	1422	587	1838	1251
2016-17	1271	539	1810	2395	1124	1391	585	1819	1234
2017-18	1271	526	1797	2362	1091	1392	565	1786	1221
2018-19	1269	526	1795	2316	1047	1391	521	1720	1199
2019-20	1275	548	1823	2331	1056	1398	508	1683	1175
2020-21	1286	538	1824	2332	1046	1410	508	1634	1126
2021-22	1323	500	1823	2352	1029	1448	529	1625	1096
2022-23	1341	492	1833	2353	1012	1467	520	1568	1048
2023-24	1334	539	1873	2356	1022	1461	483	1539	1056
2024-25	1331	562	1893	2368	1037	1459	475	1521	1046

See "Reliability of Enrollment Projections" section of accompanying letter.
Projections are more reliable for Years #1-5 in the future than for Years #6 and beyond.

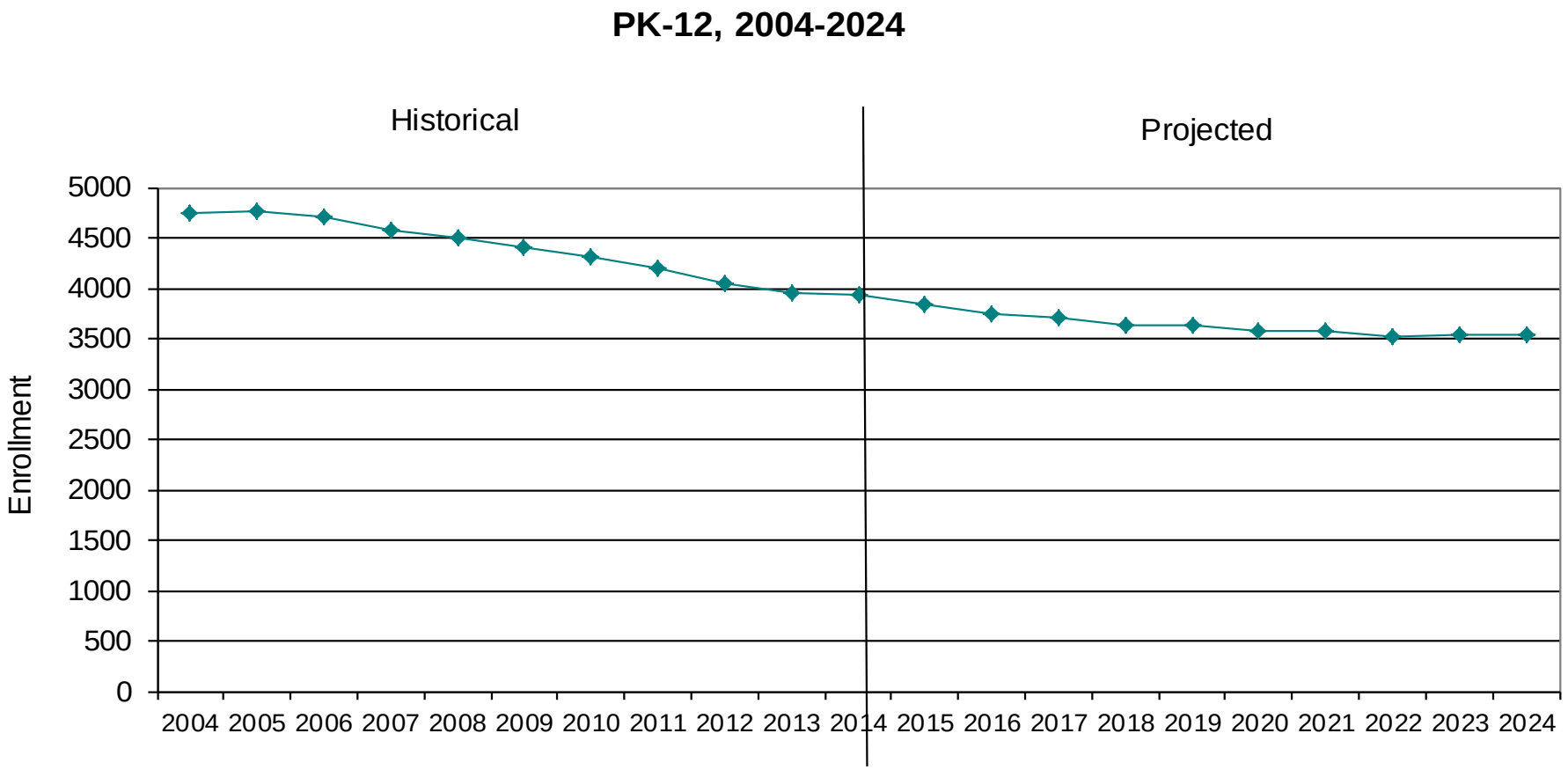
Projected Percentage Changes

Year	K-12	Diff.	%
2014-15	3808	0	0.0%
2015-16	3726	-82	-2.2%
2016-17	3629	-97	-2.6%
2017-18	3583	-46	-1.3%
2018-19	3515	-68	-1.9%
2019-20	3506	-9	-0.3%
2020-21	3458	-48	-1.4%
2021-22	3448	-10	-0.3%
2022-23	3401	-47	-1.4%
2023-24	3412	11	0.3%
2024-25	3414	2	0.1%
Change		**-394**	**-10.3%**

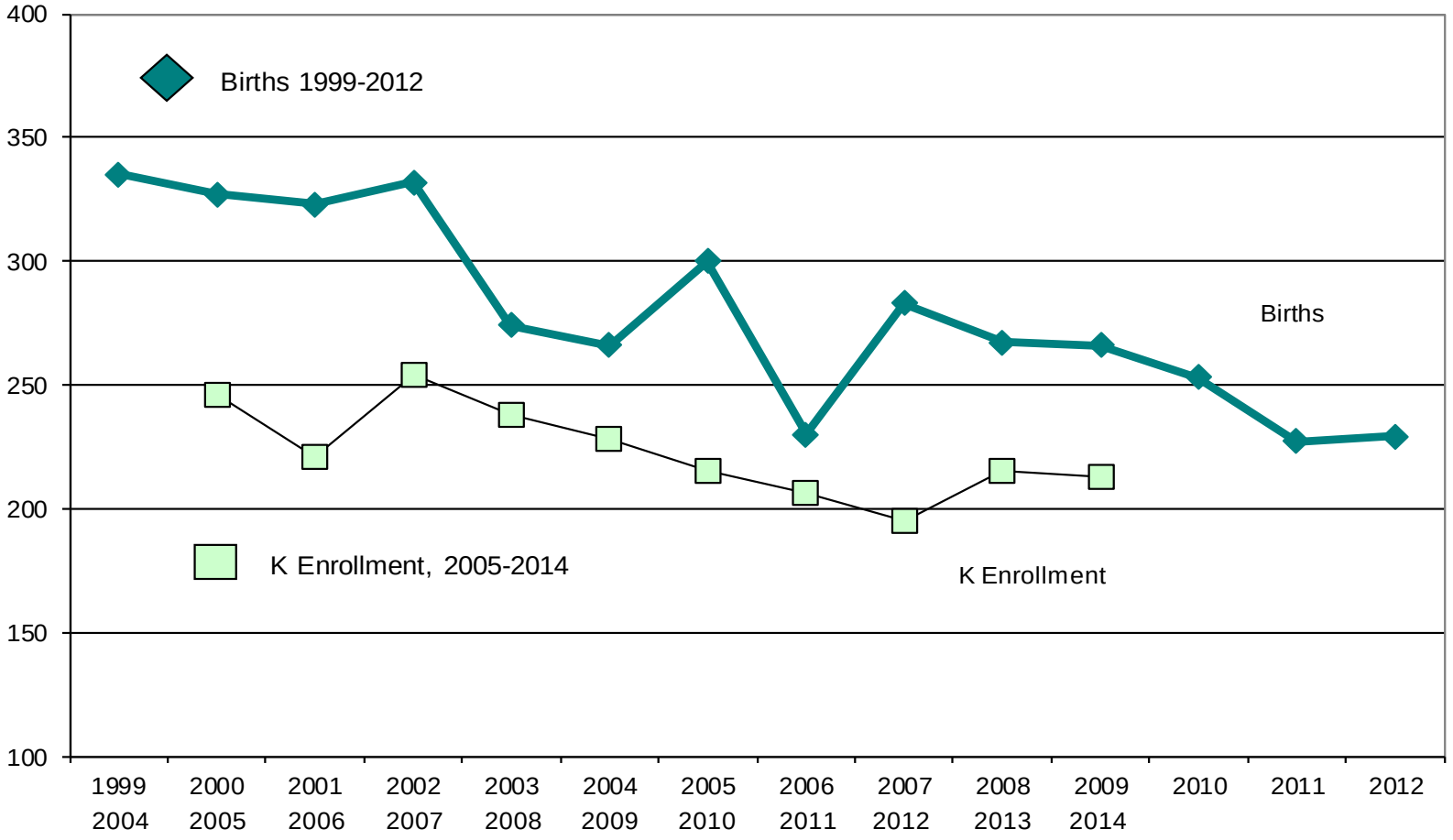
Merrimack, NH SAU#26 Projected Enrollment



Merrimack, NH SAU#26 Historical & Projected Enrollment



Merrimack, NH SAU#26 Birth-to-Kindergarten Relationship



Merrimack, NH SAU#26 Additional Data

Building Permits Issued		
Year	Single-Family	Multi-Units
2005	49	0
2010	15	0
2011	16	0
2012	22	0
2013	20	0
2014	16 to Aug 31	0

Source: HUD and Building Department

Enrollment History		
Year	Voc-Tech 9-12 Total	Non-Public K-12 Total
2005-06	n/a	n/a
2010-11	n/a	n/a
2011-12	n/a	n/a
2012-13	n/a	n/a
2013-14	n/a	n/a
2014-15	n/a	n/a

Residents in Non-Public Independent and Parochial Schools (General Education)														
Enrollments as of Oct. 1	K	1	2	3	4	5	6	7	8	9	10	11	12	K-12 TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	n/a

K-12 Home-Schooled Students	
2014	85

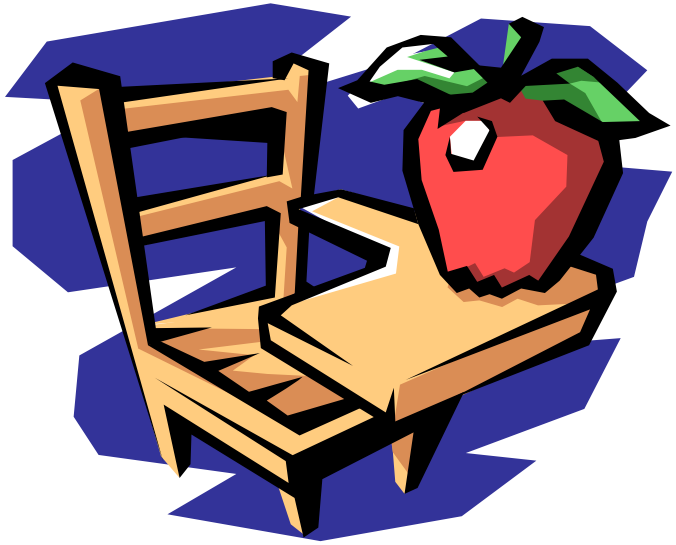
K-12 Residents "Choiced-out" or in Charter or Magnet Schools	
2014	66

K-12 Special Education Outplaced Students	
2014	25

K-12 Choiced-In, Tuitioned-In, & Other Non-Residents	
2014	n/a

The above data were used to assist in the preparation of the enrollment projections. If additional demographic work is needed, please contact our office.

CAPACITY ANALYSIS



“THEN-NOW” CAPACITIES

The changing nature of the school’s educational program directly affects the capacity of the school. Four “Then-Now” charts are included to display the educational program factors which have combined to reduce the student capacity of older school buildings constructed in 1960’s and earlier. Many schools were designed and built when desks were in straight rows; there were few, if any, small group instructional spaces, Special Education services and no use of computers. Such buildings served well the programs for which they were designed. Little storage space for educational materials was required. Twenty-First Century schools, however, are expected to provide a broader program to a more comprehensive spectrum of students. Thus, a school which once housed 600 students a generation ago, now may be overcrowded at 500 students. The “Then-Now” charts provide detail in describing this phenomenon, in which new educational programs have decreased the student capacity of older school buildings.

PROGRAM CHANGES = DECREASED BUILDING CAPACITY

ELEMENTARY:	**THEN (1960's and earlier)**	**NOW**
Classrooms	500-600 sf; desks in rows; no water; few, if any, small group instructional spaces	900+ sf; learning centers; in-class Library; sink and drinking fountain in room (primary grade toilets); includes small group instructional spaces
Kindergarten	None, or half-day; in standard classroom	Full-day; 1,000+ sf; toilets, sink and drinking fountain, etc.; some preschool
Technology	None	In classrooms and Computer Lab
Science	In classroom	Separate Science Room
Art and Music	In classroom	Separate Art and Music Rooms; 1,200-1,500 sf; spec. equip.
Library	Depository for books	Books, computers, media; major curriculum support; Library Science instruction

See Rothstein, *The Way We Were: The Myths and Realities of America's Student Achievement* (2003); Tanner and Lackney, *Educational Facilities Planning* (2005); Castaldi, *Educational Facilities 4th edition* (1993); Conrad, *Educational Programs and School Capacity* (1952 Ohio-State University doctoral dissertation)

ELEMENTARY *(cont.)*: **THEN (1960's and earlier)** **NOW**

Special Education	Possibly separate classroom, few students in school	Included in some regular classes, plus many small instruction spaces; additional staff, assistive technology, wheelchairs; OT/PT requires gross motor equipment; parent conferences require space
Handicapped-Accessibility	Little or no accommodations were made	All areas of the school must be handicapped-accessible
Transportation	Some bused, but most children walked or rode bicycles to school	Most children ride buses or are driven to school
Security	Buildings unlocked; not a major concern	Schools are secured; outside phones for parent and emergency calls
Storage	Little needed	Schools use many educational materials; space required

JUNIOR HIGH **THEN (1960s and earlier)**	**MIDDLE SCHOOL: NOW**
Junior High Departments; Students move throughout building	Middle School Teams, students remain in home-base wing for most classes
500-600 sf; classrooms; few, if any, small group instructional spaces	900-1,00 sf; student projects; in-class computers, computer labs and/or in Library
Science Labs in one area	Lab in each team area
Special Education in separate class rooms; few Special Education students	Often included in regular classes, small group instruction rooms; parent conferences required
Library a depository for books	Books plus computers and other media; major curriculum support; Library Science instruction

HIGH SCHOOL:	**THEN (1960s and earlier)**	**NOW**
Technology	None	In classrooms and Computer Lab
Labs	Industrial Arts; Home Economics; Demonstration in Sciences	Tech Ed; Family/Consumer Science; active projects in Sciences
Special Education	Possibly separate classroom, few Special Education students in school	Included in regular classes, plus many small group instruction rooms
Handicapped-Accessibility	Little or no accommodations were made	All areas of the school must be handicapped-accessible
Library	Depository for books	Books, computers, media; major curriculum support; Library Science instruction
Security	Buildings unlocked; not a major concern	Schools are secured; cameras; outside phones for parent and emergency calls
Storage	Little needed	Schools use many educational materials; space required

DEFINING "CAPACITY"

Architects and the State depend heavily on square footage; NESDEC also counts rooms…using the perspective of a school principal who is creating a schedule for the building

- **Current Operating Capacity (COC)**
  - Class size (PK = 12; K = 15; Grade 1 = 18; Grade 2 = 21; Grades 3-4 = 22; Grades 5-6 =25; Grades 7-8 = 24; Grades 9-12 = 25; for Core Curriculum)
  - Current building use including deficiencies
- **Planned Operating Capacity (POC) for a 21st Century Educational Program**
  - For future planning/construction purposes
  - Corrects deficiencies; keeps current programs
  - Provides appropriate core and specialized facilities
  - Parity/equity among all school buildings
  - Meets current code requirements
  - Maintains sufficient "capacity cushion" – NESDEC typically advises districts to maintain a 10% "capacity cushion" (national trend toward full-day Kindergarten and universal PK for all 4-year olds)

MASTRICOLA ELEMENTARY SCHOOL

MASTRICOLA ELEMENTARY SCHOOL

Grades: **PK-4**

Site Acreage: **74.9 acres (Combined with Mastricola Upper Elementary and Merrimack High School)**

Built: **1961**

Additions/Renovations: **1963, 1987, 1991, 1997, 2003, 2005**

Square Footage: **58,634**

# of Interchangeable Classrooms: **15**

# of PK Classrooms: **3**

# of K Classrooms: **2**

October 1, 2014 Enrollment: **447**

MASTRICOLA ELEMENTARY SCHOOL – CONT.

Current Operating Capacity (COC):

- HDPK – 3 Classrooms x 24 = 72
- HDK - 2 Classrooms x 30 = 60
- Grade One – 4 Classrooms x 18 = 72
- Grade Two – 4 Classrooms x 21 = 84
- Grade Three – 3 Classrooms x 22 = 66
- Grade Four – 4 classrooms x 22 = 88
- **Total COC = 442**

Planned Operating Capacity (POC):

- 1 additional full-sized classroom on line
- 442 + 22 = 440
- **Total POC = 464**

MASTRICOLA ELEMENTARY SCHOOL NOTES

Instructional Spaces

- 15 interchangeable classrooms – Grades 1-4
- 2 Kindergarten classrooms
- 3 PK classrooms
- 1 Art room – storage adequate
- 1 Music room
- 1 Sign-out Computer lab
- 1 Math/Science room
- 1 Literacy Center/Meeting room

Core Facilities

- Cafeteria/All Purpose Room – capacity 350, no kitchen, 4 lunch waves, 1 serving line, no stage

MASTRICOLA
ELEMENTARY SCHOOL NOTES – CONT.

Core Facilities – Cont.

- Gym
- Library – accommodates 2 classes, renovated within the last 5 years, 11 computers

Administrative Space

- 2 Administrators' offices, 3 Administrative Assistants' offices, no conference space
- 1 Nurse's station – no exam room, 2 day beds, limited privacy, no handicapped-accessible restrooms, storage space deemed adequate
- 2 Teacher work areas

MASTRICOLA
ELEMENTARY SCHOOL NOTES – CONT.

Support Staff

- 1 Guidance office
- 1 Psychologist's office space – adequate
- ESOL shares space with Gifted and Talented Program
- 2 OT/PT spaces
- 1 Title I classroom
- 1 PASS Program room
- 2 Resource rooms

Instructional/Administrative Technology

- 1 Sign-out Computer lab, 11 computers in Library
- 1 computer per classroom
- 22 mounted LCD projectors

MASTRICOLA
ELEMENTARY SCHOOL NOTES – CONT.

Instructional/Administrative Technology – Cont.

- Special Ed plans, health records, and attendance are done electronically
- Wireless accessibility expanding

ADA Compliance

- ADA-compliant except for some restrooms

Major Systems

- The electrical and heating systems are viewed as satisfactory
- Windows and doors are reported to be satisfactory
- The roof is reported to be satisfactory
- The inside and exterior walls and the flooring are reported to be satisfactory

MASTRICOLA
ELEMENTARY SCHOOL NOTES – CONT.

Site Information

- School day parking is viewed as adequate
- Event parking is reported to be in need of improvement
- Field space is adequate
- Areas for pick-up and drop-off are adequate

Storage

- Storage for classroom, administrative, custodial and kitchen supplies is adequate

REEDS FERRY ELEMENTARY SCHOOL

REEDS FERRY ELEMENTARY SCHOOL

Grades: **PK-4**

Site Acreage: **35.6**

Built: **1968**

Additions/Renovations: **1970, 1997, 2005**

Square Footage: **67,203**

# of Interchangeable General Classrooms: **20**

# of PK-K Classrooms: **3 Kindergarten and 2 PK**

October 1, 2014 Enrollment: **534**

REEDS FERRY ELEMENTARY SCHOOL – CONT.

Current Operating Capacity (COC):

- HDPK – 2 Classrooms x 24 = 48
- HDK - 3 Classrooms x 30 = 90
- Grade One- 6 Classrooms x 18 = 108
- Grade Two- 4 Classrooms x 21 = 84
- Grade Three - 5 Classrooms x 22 = 110
- Grade Four – 5 classrooms x 22 = 110
- **Total COC = 550**

Planned Operating Capacity (POC):

- 2 additional classrooms on line
- 2 x 22 = 44
- 550 + 44 = 594
- **Total POC = 594**

REEDS FERRY ELEMENTARY SCHOOL NOTES

Instructional Spaces

- 20 interchangeable classrooms (Grades 1-4)
- 2 PK classrooms
- 3 K classrooms
- 1 Art room – adequate storage
- 1 Music room
- 1 Sign-out Computer lab/Science lab and 1 Instructional lab

Core Facilities

- 1 Cafeteria/All-Purpose Room – serves 120, no kitchen, 4 lunch waves, seats 350 for assemblies/performances, no stage
- 1 Gym – capacity 350, no bleachers, 1 teaching station, no divider, no locker rooms
- 1 Library – accommodates 2 classes, 1 office, 6 computers, small storage area

REEDS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

Administrative Space

- 2 Administrators' offices, 3 Administrative Assistants' offices, all adequate
- 1 conference space – described as tight, not in Main Office area
- Nurse's station – restrooms not handicapped-accessible, no exam room, 1 day bed, privacy limited
- 2 teacher work spaces, viewed as small and inadequate

Support Staff

- 1 Guidance office – viewed as adequate
- 1 Psychologist's office space – converted closet
- 1 ESOL space shared with Gifted and Talented Program
- 2 OT/PT spaces – 1 space is shared with Speech and Language

REEDS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

Support Staff – Cont.

- 1 Resource room
- 2 classrooms for Autism Program
- 1 Title I room
- 1 Special Education work area, Special Education offices

Instructional/Administrative Technology

- 1 Sign-out Computer lab (see above)
- 1 Instructional lab (see above)
- 1 computer per classroom
- 18 LCD Projectors – half are mounted
- Special Ed plans, health records, and attendance are done electronically
- Wireless accessibility expanding

REEDS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

ADA Compliance

- ADA-compliant with the exception of some restrooms

Major Systems

- Electrical system is viewed as satisfactory
- Heating system is viewed as satisfactory
- Windows are old and not energy-efficient; some leak
- Doors are viewed as satisfactory
- Roof is satisfactory – leaks have been repaired
- Inside and exterior walls are satisfactory
- Flooring – some flooring is viewed as in need of improvement

REEDS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

Site Information

- Both school day and event parking are viewed as satisfactory – lot has been recently repaved
- Field space is viewed as adequate
- Areas for pick-up and drop-off are satisfactory

Storage

- Storage for administrative, custodial and kitchen supplies is viewed as adequate
- Storage for classroom supplies is viewed as in need of improvement

THORNTONS FERRY ELEMENTARY SCHOOL

THORNTONS FERRY ELEMENTARY SCHOOL

Grades: **K-4**

Site Acreage: **39.8 acres**

Built: **1968**

Additions/Renovations: **1970, 1997, 2005**

Square Footage: **67,203**

# of Interchangeable General Classrooms: **18**

# of Kindergarten Rooms: **3**

October 1, 2014 Enrollment: **438**

THORNTONS FERRY ELEMENTARY SCHOOL – CONT.

Current Operating Capacity (COC):

- HDK - 3 Classrooms x 30 = 90
- Grade One- 5 Classrooms x 18 = 90
- Grade Two- 4 Classrooms x 21 = 84
- Grade Three - 5 Classrooms x 22 = 110
- Grade Four – 4 classrooms x 22 = 88
- **Total COC = 462**

Planned Operating Capacity (POC):

- 2 additional classrooms on line
- 2 x 22 = 44
- 462 + 44 = 506

Total POC = 506

THORNTONS FERRY ELEMENTARY SCHOOL NOTES

Instructional Spaces

- 18 interchangeable classrooms
- 1 Art room – adequate storage
- 1 Music room
- 1 Science/Math room
- 3 Computer Tech rooms – 1 sign-out adjacent to Library, 1 instructional lab, 1 large instructional space available in 2014
- 1 Gifted and Talented Program classroom

Core Facilities

- 1 Cafeteria/All-Purpose room – serves 120, no kitchen, seats 350, no stage
- 1 Gym – seating capacity 400, no bleachers, 1 teaching station, no divider, no locker rooms
- 1 Library – accommodates 2 classes, space is viewed as tight but adequate

THORNTONS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

Administrative Space

- 2 Administrators' offices, 3 Administrative Assistants' offices, 2 conference spaces – all adequate
- Nurse's station – no exam room, 2 day beds, no handicapped-accessible restroom, adequate storage
- 1 Teacher work space – deemed adequate

Support Staff

- 1 Guidance office – adequate conference space
- 1 Psychologist's office space/testing area – adequate
- 1 ESOL-dedicated space
- 1 OT/PT space, plus a small attached area
- 4 Resource rooms

THORNTONS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

Support Staff – Cont.

- 2 Special Services spaces – Medically Fragile
- 2 Title I rooms
- 1 Speech and Language room
- 3 Specialist offices

Instructional/Administrative Technology

- 1 Sign-out Computer lab (see above)
- 1 Technology Instruction lab (see above)
- 1 Large Technology Instruction space (see above)
- 1-2 computers per classroom
- 10 LCD Projectors, plus 8 being installed

THORNTONS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

Instructional/Administrative Technology – Cont.

- Special Ed plans, health records and attendance are done electronically
- Expanding wireless accessibility

ADA Compliance

- ADA-compliant with the exception of some restrooms

Major Systems

- The electrical system is viewed as satisfactory
- The heating system is viewed as satisfactory
- Windows are reported to be old and not energy-efficient
- Doors are reported to be satisfactory

THORNTONS FERRY
ELEMENTARY SCHOOL NOTES – CONT.

Major Systems – Cont.

- The roof is scheduled for capital expenditures in 2017-18
- The inside and exterior walls are reported to be satisfactory
- Flooring is reported as satisfactory

Site Information

- Both school day and event parking are viewed as satisfactory; the traffic circle and lower lot are scheduled for paving in 2016-17
- Field space is reported as satisfactory
- Areas for pick-up and drop-off are viewed as satisfactory

Storage

- Storage spaces for classroom, administrative, custodial and kitchen supplies are reported to be satisfactory

MASTRICOLA UPPER ELEMENTARY SCHOOL

MASTRICOLA UPPER ELEMENTARY SCHOOL

Grades: **5-6**

Site Acreage: **14.2 acres**

Built: **1949**

Additions/Renovations: **1953, 1956, 1958, 1972, 1997, 2003**

Square Footage: **123,635**

# of Interchangeable General Classrooms: **24**

October 1, 2014 Enrollment: **607**

MASTRICOLA UPPER ELEMENTARY SCHOOL – CONT.

Current Operating Capacity (COC):

- 24 interchangeable classrooms x 25 = 600
- **Total COC = 600**

Planned Operating Capacity (POC):

- 8 additional classrooms on line
- 8 x 25 = 200
- 600 + 200 = 800
- **Total POC = 800**

MASTRICOLA UPPER ELEMENTARY SCHOOL NOTES

Instructional Spaces

- 24 interchangeable classrooms
- 6 Science classrooms
- 6 Special Services Resource classrooms
- 1 Art room – viewed as adequate
- 3 Music rooms – Band, Chorus and General Music
- 2 Computer labs
- 2 World Language rooms

Core Facilities

- Cafeteria/All-purpose room – serving capacity 400, full kitchen, 6 lunch waves, 2 serving lines, bleachers seat 400, chairs seat 500
- Gym - 1 teaching station, bleacher seating capacity 900, capacity with bleachers and chairs on floor 1600, functioning locker rooms
- Library – accommodates 2 classes, 40 computers on 2 carts plus additional laptops available, storage is tight

MASTRICOLA UPPER ELEMENTARY SCHOOL NOTES – CONT.

Administrative Space

- 2 Administrators' offices, 3 Administrative Assistants' offices and 1 conference space, all viewed as adequate
- Nurse's station – handicapped-accessible rest rooms, adequate privacy, 2 day beds, adequate storage
- 3 teacher work spaces plus small copier area - deemed adequate
- 1 Professional Development conference space

Support Staff

- 2 Guidance Counselor offices with adequate conference space
- 2 Psychologist office spaces
- 1 ESOL space
- 1 OT/PT space
- 1 Special Services PASS Program space

MASTRICOLA UPPER ELEMENTARY SCHOOL NOTES – CONT.

Support Staff – Cont.

- 6 Special Service Resource classrooms (referenced above)
- 2 Speech and Language rooms
- 1 Behavior Specialist space
- 2 multiple handicapped support spaces
- 2 Title I classrooms
- 1 Intervention/In-School Suspension room

Instructional/Administrative Technology

- 2 Computer labs (referenced above)
- 1 computer per classroom
- LCD projectors – 14 mounted and 4 on carts
- Special Ed plans, health records, grading and attendance are done electronically
- Extensive wireless accessibility (continuing to expand)

MASTRICOLA UPPER ELEMENTARY SCHOOL NOTES – CONT.

ADA Compliance

- ADA-compliant with the exception of the stage in the All-Purpose Room

Major Systems

- The plumbing and electrical systems are viewed as satisfactory
- The heating system is reported to be satisfactory
- Windows and doors are reported to be satisfactory
- The roof, which is currently viewed as satisfactory, is due for an upgrade in 2018-19
- The inside and exterior walls as well as the flooring are reported to be satisfactory

MASTRICOLA UPPER ELEMENTARY SCHOOL NOTES – CONT.

Site Information

- Both school day and event parking are viewed as in need of improvement; the school leases parking spaces from an adjacent church – a paving upgrade is scheduled for 2018-19
- Field space is considered adequate
- Areas for pick-up and drop-off are viewed as in need of improvement
- Street traffic is sometimes congested during drop-off

Storage

- Storage for classroom, administrative, custodial and kitchen supplies is reported to be adequate

MERRIMACK MIDDLE SCHOOL

MERRIMACK MIDDLE SCHOOL

Grades: 7-8

Site Acreage: **64 acres**

Built: **2004**

Additions/Renovations: **N/A**

Square Footage: **120,000**

# of Interchangeable Classrooms: **28**

October 1, 2014 Enrollment: **594**

MERRIMACK MIDDLE SCHOOL – CONT.

Current Operating Capacity (COC):

- 28 interchangeable classrooms x 24 = 672
- **Total COC = 672**

Planned Operating Capacity (POC):

- 4 additional classrooms on line
- 4 x 24 = 96
- 672 + 96 = 768
- **Total POC = 768**

MERRIMACK MIDDLE SCHOOL NOTES

Instructional Spaces

- 28 interchangeable classrooms (includes Science)
- 2 Art rooms – adequate storage
- 1 Music room – used primarily for General Music and Band, practice room, storage: adequate space, Chorus uses adjacent stage for practice
- 8 Science labs
- 1 Tech Ed classroom
- 1 Family Consumer Science room
- 3 Sign-out Computer labs (include Library)
- 3 World Languages rooms – 2 used full-day, 1 used half-day
- 2 Health classrooms

MERRIMACK MIDDLE SCHOOL NOTES – CONT.

Core Facilities

- Cafetorium – serves 620; full kitchen, 4 lunch waves, 3 serving lines – adjacent stage is handicapped-accessible, lighting and sound described as adequate
- Gym – seating capacity 1,192; 2 teaching stations, bleachers handicapped-accessible, 2 functioning locker rooms
- Library – accommodates 2 classes; 30 computer stations, adequate storage and office space

Administrative Space

- 2 Administrators' offices, 4 Administrative Assistants' offices available and 1 conference space – all viewed as adequate
- 1 Nurse's station – handicapped-accessible restrooms, exam room, 3 day beds, adequate storage
- Teacher/team work spaces – deemed adequate

MERRIMACK MIDDLE SCHOOL NOTES – CONT.

Support Staff

- 2 Guidance offices within the main Guidance area, conference space shared with Special Education – viewed as adequate
- 1 Psychologist's office space – adequate
- ESOL shares space with Speech and Language
- 1 OT/PT space – storage limited
- 1 Title I room
- 1 Gifted and Talented Program classroom
- 6 Special Education instructional spaces

Instructional/Administrative Technology

- 2 Sign-out Computer Labs plus 30 stations in Library (referenced above)
- 1 computer per classroom
- 20 LCD Projectors

MERRIMACK MIDDLE SCHOOL NOTES – CONT.

Instructional/Administrative Technology – Cont.

- Special Ed plans, health records, grading and attendance are done electronically
- Extensive wireless accessibility

ADA Compliance

- ADA-compliant

Major Systems

- The electrical system is viewed as satisfactory
- The heating system is inconsistent
- Windows and doors are energy-efficient
- Roof has some leaks in the Gym area
- Inside and exterior walls are satisfactory
- Flooring is satisfactory

MERRIMACK MIDDLE SCHOOL NOTES – CONT.

Site Information

- School day parking is viewed as adequate
- Event parking is reported to be in need of improvement
- Field space is viewed as tight but adequate
- Areas for pick-up and drop-off are considered in need of improvement – drop-off is congested

Storage

- Storage, administrative, custodial and kitchen supplies viewed as adequate
- Storage for some instructional supplies is viewed as in need of improvement

MERRIMACK HIGH SCHOOL

MERRIMACK HIGH SCHOOL

Grades: **9-12**

Site Acreage: **74.9 acres including Mastricola sites**

Built: **1965**

Additions/Renovations: **1970, 1977, 1997, 2001**

Square Footage: **213,800**

# of Interchangeable Classrooms: **46**

October 1, 2014 Enrollment: **1,306**

MERRIMACK HIGH SCHOOL – CONT.

Current Operating Capacity (COC):

1,595

Planned Operating Capacity (POC):

1,595

(See high school capacity computation sheet)

MERRIMACK HIGH SCHOOL
CURRENT/PLANNED OPERATING CAPACITY

Room Description	# Rooms/Teaching Stations	Student Stations	Total
Regular Interchangeable Classrooms (English, Math, Social Studies, World Languages)	46	25	1,150
Science rooms/labs	16	24	384
Art	4	16	64
Music/Band/Chorus	2	25	50
Family Consumer Science	1	20	20
Physical Education/Health	6	30	180
Business	2	25	50
Tech Ed	6	16	96
		Total Student Stations	**1,994**
Current Operating Capacity (COC)	1,994 x .80 programming/utilization factor = 1,595		**1,595**
Planned Operating Capacity (POC)	1,994 x .80 = 1,595		**1,595**

MERRIMACK HIGH SCHOOL NOTES

Instructional Spaces

- 46 interchangeable classrooms
- 4 Art rooms – 3 with sinks and storage, 1 w/o sinks and storage
- 2 Music rooms
- 16 Science classrooms
- 6 Tech Ed instructional areas
- 2 Business classrooms (also used during part of day for computer sign-out)
- 4 Sign-out Computer Labs (include Library and Business)
- 2 Health classrooms
- 1 Family Consumer Science room

MERRIMACK HIGH SCHOOL NOTES – CONT.

Core Facilities

- Cafeteria – serving capacity 400, full kitchen, 4 lunch waves, 5 serving lines, seats 600 with chairs for assemblies/ performances
- Gym – bleacher seating capacity 1200, capacity with bleachers and chairs on floor 1900, 4 teaching stations in Gym including Exercise room (accommodates 1 class) and Weight room (accommodates 1 class), functioning locker rooms plus team locker room, 2 PE/Health rooms referenced above
- Auditorium/Theatre – seating capacity 250, handicapped-accessible stage and seating, lighting and sound reported as satisfactory
- Library – accommodates 4 classes, sign-out computer space, adequate storage and office space

MERRIMACK HIGH SCHOOL NOTES – CONT.

Administrative Space

- 4 Administrators' offices, 4 Administrative Assistants' offices and 1 conference space (another available in Guidance office) – all adequate
- Nurse's station – handicapped-accessible restroom, exam room, adequate privacy, 3 day beds, adequate storage
- Teacher/department work spaces deemed adequate

Support Staff

- 6 Guidance Counselor offices within the main Guidance area on second floor – adequate conference space
- 1 Psychologist's office space
- 1 ESOL space
- 1 OT/PT space
- 1 Special Services PASS Program space
- 6 Special Ed Resource rooms
- 1 Speech and Language room

MERRIMACK HIGH SCHOOL NOTES – CONT.

Instructional/Administrative Technology

- 4 Sign-out Computer labs – includes stations in Library and Business classrooms (available during some periods of the day)
- 6 Tech Ed instructional spaces
- Music Tech room (included in Music room)
- 1-2 computers per classroom
- 44 LCD projectors
- Special Ed plans, health records, grading and attendance are done electronically
- Extensive wireless accessibility

ADA Compliance

- ADA-compliant with the exception of a few staff restrooms

MERRIMACK HIGH SCHOOL NOTES – CONT.

Major Systems

- The plumbing and electrical systems are viewed as satisfactory
- The heating system – capital improvement work is scheduled for 2015-16
- Windows were upgraded in 2001
- Doors are satisfactory
- The roof is viewed as satisfactory
- The inside and exterior walls and flooring are reported to be satisfactory

Site Information

- Both school day and event parking are viewed as satisfactory
- Field space is considered adequate
- Areas for pick-up and drop-off are viewed as satisfactory
- Proximity to traffic is minimal

MERRIMACK HIGH SCHOOL NOTES – CONT.

Storage

- Storage for classroom, administrative, custodial and kitchen supplies is reported to be adequate

MERRIMACK CENTRAL OFFICE

MERRIMACK CENTRAL OFFICE

Site: Located adjacent to Merrimack High School

Built: **1963 – purchased by District in 1973**

Additions/Renovations: **N/A**

Square Footage: **1,624**

MERRIMACK CENTRAL OFFICE – CONT.

Current Workstations

- Superintendent – first floor
- Assistant Superintendent – first floor
- Business Administrator – ground floor
- Human Resources Director – first floor
- Administrative Assistant – Superintendent – first floor
- Administrative Assistant – Assistant Superintendent – first floor
- Administrative Assistant - Business Administrator - workstation ground floor
- Administrative Assistant – Human Resources – first floor
- Payroll Specialist – workstation ground floor
- Accounts Payable – workstation ground floor
- Title I Coordinator – workstation ground floor
- Computer Systems Manager – workstation ground floor

MERRIMACK CENTRAL OFFICE – CONT.

Other Central Office Spaces

- Lunch, Meeting, Copy Room – first floor
- Storage spaces – ground floor
- Vault – ground floor

MERRIMACK CENTRAL OFFICE – CONT.

Central Office Building Notes

- Office space is limited and viewed as inadequate
- Due to the lack of space and the office work area configuration, confidentiality and privacy are affected
- The meeting area, break/lunch room and the copy machines are all located in the same small space
- Several work spaces are located on the ground floor/basement
- Storage capacity is limited
- The heating system distributes heat unevenly
- Air conditioning is limited
- Electric overloads occur tripping circuit breakers
- The roof and exterior walls are in need of an upgrade

MERRIMACK SPECIAL SERVICES

MERRIMACK SPECIAL SERVICES

Site: Located adjacent to Merrimack High School

Built: **1963 – purchased by the District in 1979**

Additions/Renovations: **N/A**

Square Footage: **1,624**

MERRIMACK SPECIAL SERVICES – CONT.

Current Workstations

- Special Services Director – first floor
- 2 Administrative Assistants to the Director – first floor
- Special Education Consultants' workstation – first floor
- Out-of-District Placement Coordinator's workstation – first floor

Other Special Services Office Spaces

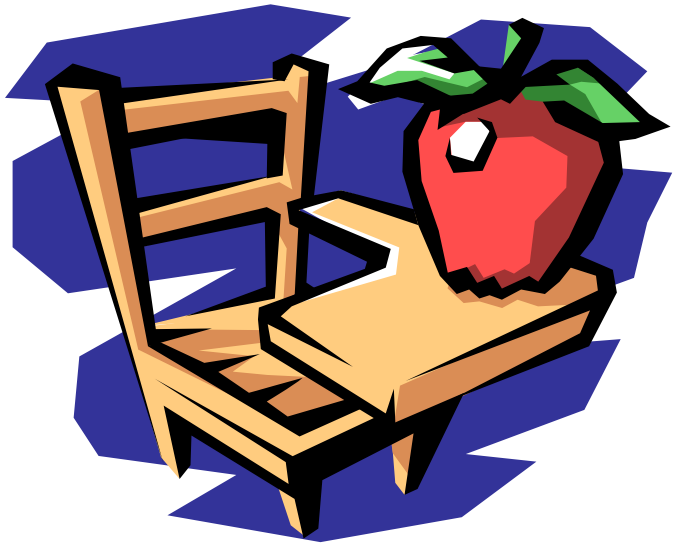
- Lunch, break, copy room – first floor
- Meeting room/office workstation-first floor
- 1 small testing room-first
- Storage spaces – ground floor
- 2 restrooms, 1 handicapped-accessible – first floor

MERRIMACK SPECIAL SERVICES NOTES

Special Services Office Building Notes

- Office space is limited and viewed as inadequate
- Due to the lack of space and the office work area configuration, confidentiality and privacy are affected
- The break/lunch room and the copy machines are all located in the same small space
- Storage capacity is limited – basement has drainage issues
- The heating system distributes heat unevenly - surges
- Air conditioning is limited and ineffective
- Electric overloads occur, tripping circuit breakers; inadequate outlets
- The exterior walls are in need of an upgrade

FINDINGS



#1: MAINTAINING THE STATUS QUO

Description: The Central Office and Special Services Office remain at their current locations.

After conduct of site visits, document analysis and interviews with Central Office and Special Services Office staff, NESDEC has found that the existing Central Office and Special Service Office Facilities have several significant inadequacies including:

- Lack of sufficient and suitable space to accommodate visitor waiting areas, workstations, office machines, staff meetings/conferences, storage of public records and supplies, and an employee break/lunch area
- Building/systems issues related to: heat distribution, cooling, drainage, insufficient electrical circuits and outlets, accessibility issues and other capital improvement needs (with significant costs)

In NESDEC's view, due to the above-mentioned inadequacies, a status quo option is not viable, cost-effective, or sustainable.

#2: RELOCATION OF THE MERRIMACK SAU 26 CENTRAL OFFICES TO MASTRICOLA UPPER ELEMENTARY SCHOOL

Description: Move the Merrimack SAU 28 Central Office to the Mastricola Upper Elementary School (Northeast corner, rooms 141-151)

The SAU Central Office would include the following spaces:

- Superintendent - 240 sf
- Assistant Superintendent – 200 sf
- Business Administrator – 200 sf
- Human Resources Director – 200 sf
- Administrative Assistant - Superintendent – 130 sf
- Administrative Assistant - Assistant Superintendent – 130 sf
- Administrative Assistant - Business Administrator – 130 sf
- Administrative Assistant - Human Resources – 130 sf
- Payroll Specialist – 160 sf
- Accounts Payable – 160 sf

(Cont.)

- Title I Coordinator - 160 sf
- Computer Systems Manager – 160 sf
- Storage for documents, records and office supplies – 625 sf
- Vault space – 150 sf
- Office machines space – 60 sf
- Work room – 120 sf
- Technology Server – 50 sf
- School Board meeting room – 1400 sf plus 150 sf storage
- Staff lunch/break room – 140 sf

Total Estimated Square Footage – 4,695 sf

ANALYSIS

Advantages:

- The Central Office would have sufficient work space.
- Adequate private space would be available for citizen, parent and staff meetings;
- Storage space for public records and supplies would be adequate.
- Building problems at the current location related to access to electric outlets, tripping of circuit breakers, heat distribution and cooling would be eliminated;
- Sufficient space would be available for lunch/break and an adequate area for office machines;
- The location of the Central Offices in the Mastricola Upper Elementary School building would be in an area that is easily accessed by the public.

Challenges:

- In order to accommodate the relocation of the Central Office within the Mastricola Upper Elementary School building, existing instructional spaces would have to be relocated and several instructional spaces would have to be reconfigured. The chain link playground fence at the northeast entrance would also require reconfiguration.
- The cost of reconfiguring the instructional spaces to accommodate Central Office spaces would be significant: an earlier study done in 2010 by the Frank P. Marinace Architectural Firm estimated that a somewhat similar project would cost $495,000, about 2/3 of the cost of new construction, and current costs would most likely be even higher.
- Although it appears that adequate instructional space would be available to accommodate existing instructional programming, the alignment/location of grade level team groupings may be altered.
- Existing school corridor traffic patterns would have to be altered: students would no longer pass through the corridor that would house the Central Office.

Challenges – Cont.:

- In the event that enrollment trends change and enrollments increase above projections, or if changes in instructional models create a need for additional instructional space, it would be difficult and costly to restore reconfigured spaces to regular instructional classrooms.
- Parking is currently a major issue at the Upper Mastricola Elementary School (see Upper Mastricola Notes, Slide #53). Accommodating an additional 20 -25 Central Office spaces would be a significant challenge, which may require that the paved playground be converted to a parking area. This would reduce the availability of already limited play space.
- Travel time and distances between the Special Services Office to the Central Office will increase – depending on the location of the offices, travel time could increase to approximately 15-20 minutes; it is likely that the move would not facilitate increased direct communication.

#3: RELOCATION OF THE SPECIAL SERVICES OFFICE TO MERRIMACK MIDDLE SCHOOL

Description: Move the Merrimack School District's Special Services Office to the Merrimack Middle School. (Offices would be located on the first floor - Rooms 127, 128, 129, and possibly 130.)

The Special Services Office would include the following spaces:

- Special Education Director's office – 200 sf
- Psychologist's office – 200 sf
- Out of District Placement office – 160 sf
- Special Education Consultants' workstation – 200 sf
- 2 Administrative Assistants workstations – 300 sf
- Storage for documents, records and office supplies – 625 sf
- Vault space – 150 sf
- Office machines space – 60 sf
- Work room – 120 sf
- Special Services testing rooms (2) – 190 sf (combined)
- Meeting room – 450 sf
- Staff lunch/break room – 140 sf

Total Estimated Square Footage - 2,795 sf

ANALYSIS

Advantages:

- Special Services Office would have sufficient work space;
- Adequate private space would be available for parental and staff meetings;
- Storage space for student records and supplies would be adequate
- Building problems at the current location related to access to electric outlets, tripping of circuit breakers, heat distribution, cooling and drainage would be eliminated;
- Sufficient space would be available for a lunch/break room and an adequate area for office machines;
- The location of the Special Services Office in the Merrimack Middle School would be in an area that would be easily accessed by the public.

Challenges:

- In order to accommodate the relocation of the Special Service offices within the Merrimack Middle School building, existing instructional spaces would have to be relocated and several instructional spaces would have to be reconfigured.
- The cost of reconfiguring the instructional spaces to accommodate the Special Services Office would be significant – an earlier study done in 2010 by Frank P. Marinace Architectural Firm estimated that a similar project at the Mastricola Upper Elementary School would cost $495,000, about 2/3 of estimated new construction. An analysis of the cost to reconfigure Merrimack Middle School instructional spaces to accommodate the Special Services Office was not within the scope of this project; however, in NESDEC's view, the cost would be equal to or exceed that which was listed in the Marinace Report for the similar project at Mastricola Upper Elementary school. This assumption would need to be verified by an architect.

Challenges – Cont.:

- Although it appears that adequate instructional space would be available to accommodate existing instructional programming, the alignment of spaces for grade level groupings may be altered.
- Existing school corridor traffic patterns would have to be altered; students would no longer pass through the corridor that would house the Special Services Office.
- Special Services staff would have to share restrooms with the Middle School Administration and Administrative staff
- In the event that enrollment trends change and enrollments increase above projections or if changes in instructional models create a need for additional instructional space, it would be difficult and costly to restore reconfigured spaces to regular instructional classrooms.

Challenges – Cont.:

- Event parking is currently a major issue at the Merrimack Middle School. Accommodating an additional 12-15 Special Services Office parking spaces during sporting and other extracurricular events may be a significant challenge.
- Travel time and distances between the Special Services Office and the Central Office will increase; depending on the location of the Central Office the travel time could range from approximately 15-20 minutes; it is likely that the move would not facilitate increased direct communication.

#4: RELOCATION OF THE MERRIMACK SAU 26 CENTRAL OFFICES AND THE SPECIAL SERVICES OFFICE TO ONE OF THE MERRIMACK DISTRICT SCHOOLS

Description: Relocate the SAU 26 Central Office and the Special Services Office to one District school.

- 18 Office workstations
- Reception/waiting area
- Meeting/conference space
- Adequate space for office machines, storage and staff lunch/break areas
- 40-50 parking spaces

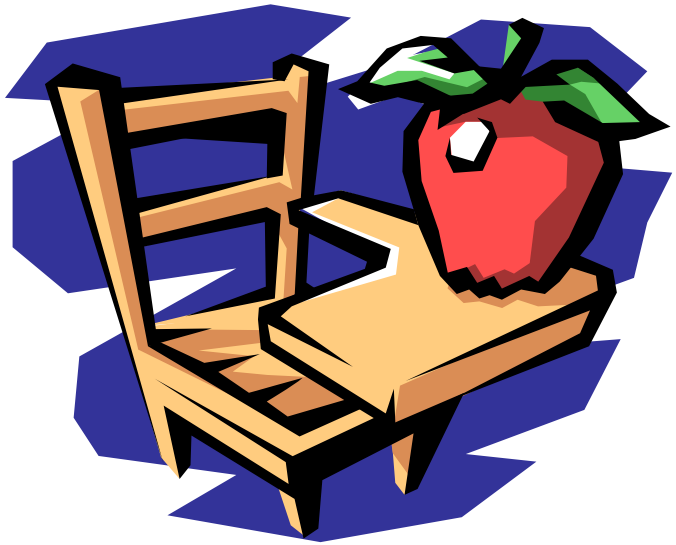
Total Estimated Square Footage – 7,490 sf

NESDEC reviewed this option and determined that there is insufficient excess capacity in any Merrimack School to accommodate both the SAU 26 Central Office and the Special Services Office.

We trust that NESDEC's analysis of the problems and the findings presented will assist the School Board, the School Administration, and the district in resolving these best use of facilities issues for many years to come. We see this Report as a beginning point for study and discussion. An analysis of the advantages and challenges of relocating the SAU Central Office and the Special Services Office to a single separate facility should also be reviewed. (Not part of the scope of this project)

NESDEC wishes to thank all those who assisted with the completion of the project. The School Board and Administration should be commended for their systematic approach to decision-making regarding school-related issues.

APPENDIX



METHODOLOGY FOR CALCULATING STUDENT CAPACITIES:

As part of the Long-Range School Facility Master Plan, the Current Operating Capacity (COC) and the Planned Operating Capacity (POC) were determined for each school. The COC is based on current usage of the building, including classrooms, core, and specialized areas. The POC is based on planned educational usage of the building, recommended class size policy, elimination of space needs or deficiencies, and the inclusion of appropriate classroom, laboratory, core (auditorium, Library, gym, etc.) and special use areas (Special Education, Art, Music, instructional specialists, etc.). Temporary portable classrooms are not included in the POC. Analyzing each space in the schools, observing the schools while in session, reviewing the educational program, and interviews with staff are included in the process of determining school capacities. The POC connects the demands or requirements of the educational program with the facilities needs of the program.

Counting the number of rooms in a school is relatively straightforward. However, counting "classrooms" for the purpose of establishing student capacity (i.e., "homerooms") is more complex…especially in older buildings which were not configured with small group instructional spaces – as these were not commonly needed 40-50 years ago. What does NESDEC count as a "classroom?" In many older schools a regular classroom may be somewhat smaller than would be constructed today. NESDEC does not automatically exclude a room of 600-700 square feet from its count. NESDEC looks at square footage, program uses, and code issues.

The Life Safety Code of the National Fire Protection Association (NFPA) requires two means of egress from a classroom. Thus, NESDEC would not count a room with a single exit as a classroom although the room might be satisfactory for other uses. Finally, a room with adequate square footage and adequate egress could be devoted to a use other than housing a “homeroom” (e.g., it might be the Art or Music room, or the only Teacher Workroom-Lunchroom) in which case, NESDEC would not count it as a classroom. For each school, the detailed room count is indicated in the chart as a “full-sized room” or “conference-sized room” and its use is noted. The pages below describe the unique program uses of the rooms in each school. Factors unique to elementary and to middle/high schools are described.

The reader will note that NESDEC's method of calculating school capacity is directly related to the ever-changing educational program. For the purposes of a quick snapshot, architects often will divide the gross square footage of an existing school by a square-foot-per-pupil ratio in order to make a quick estimate of the school's capacity. Sometimes the architect may multiply the result by a factor of 90% for elementary schools and 70-85% for middle and high schools in order to acknowledge that no school can schedule 100% of its space all of the time.

Although commonly applied and somewhat useful, the resulting estimated “capacity” ignores the actual configuration of space in the school. In NESDEC’s experience, we have seen schools in which a disproportionately large amount of the square footage is found in large hallways, foyers or locker rooms; or extra shop, gym or auditorium space…while the school has too few academic classrooms, an overcrowded cafeteria, etc., or other problems of configuration which act to lower the effective student capacity of the facility for offering a high quality 21st Century educational program.

ELEMENTARY SCHOOL CAPACITY

To determine the operating capacity of an elementary school, it is necessary to consider the following three factors:

1. School Programs - The allocation of appropriate space for present and planned educational programs offered outside of the regular classroom setting is considered when establishing the POC. In an elementary school, rooms used for such programs as Special Education and resource services, Physical Education, computer education, Art and Music instruction, are not counted in the capacity determination, since they serve as “pull-out” programs. However, the need for these specialized spaces, addressed in the POC, in some cases will reduce the COC.
2. Physical Space – The volume and extent of space available.
3. Pupil/Teacher Ratios – NESDEC has used the class sizes as provided by the District. It is consistent with best educational practice to have smaller class sizes for classes of English Language Learners and Special Education.

If separate rooms are not available for Art or Music, the taught curriculum will change. NESDEC has found that elementary Art teachers who did not have an assigned Art room space with adequate storage were able to offer only 35% of the lessons in the curriculum. This was due to the "one-shot" nature of projects which had to be offered when the teacher was rapidly moving from classroom-to-classroom. Thus considered, facilities have a direct effect upon the nature of classroom instruction. Special Education is mandated, thus other spaces would need to be taken to house Special Education if its current space was needed for a regular classroom.

MIDDLE SCHOOL CAPACITY

To determine the capacity of a middle school, an inventory is made of spaces available for instructional use. Each instructional space is assigned a capacity based upon its use and school practice relative to class size and grouping of students. Consideration is also given to the way in which middle schools are organized and operated.

Middle schools recognize the special developmental differences – physical, intellectual, social, and emotional – of pre- or early-adolescents. Recent research suggests that a curriculum and instructional program which takes into account the differences in these students "in transition" positively affects student achievement, personal development, learning climate, faculty morale, staff development, and parental and community involvement. The POC incorporates facility space to address these needs and differences.

Because students are moving along a developmental continuum, a middle school program should provide a “continuity of schooling,” where students begin with greater degrees of supervision and advance to more opportunities for independence with a rich program of exploratory experiences.

The program should also ensure a strong student-teacher relationship with the teacher as mentor-advisor, and should be developed around small teams of teachers who get to know the same students better through an interdisciplinary team organization and common planning time.

For the purpose of determining the operating capacity of a middle school, the procedure follows that which is typically used for the elementary level, (the capacity for a junior high school, on the other hand, would more closely resemble that for a high school with a departmentalized and elective program).

The general classrooms in the middle schools were assumed to hold an average of 25 students although the square footage of an undersized classroom could affect its functional capacity. See each school's capacity charts below. The "special-use rooms," such as Art, Music, etc., are not included in determining the middle school capacity. While students are in these special program rooms, their teacher team is typically at work in a planning meeting. Auditoriums, cafeterias, storage spaces, office spaces, conference/tutorial spaces, or resource rooms are not included in determining the capacity of a school building.

Middle schools typically are less space-efficient than high schools due to the pattern of scheduling required by a true “middle school model” with a team of students taught by a unique team of teachers; common planning time for teachers on the team; an “Arts rotation” for the students; and student room assignments within limited corridors of the building. See, also, the high school paragraph below, as it contains an added footnote related to middle schools.

HIGH SCHOOL CAPACITY

The process for determining the capacity for a high school is similar to that used for the elementary/middle schools only in that support areas, such as cafeteria, auditorium, offices, and those areas for special needs instruction, departmental resource rooms, internal suspension room, and prep storage rooms, are not counted in the capacity.

At the high school level, in addition to the general classrooms, the special area rooms such as Art rooms, laboratories and shops are included in the determination of capacity. Each general classroom has been assigned a capacity depending upon size and use. The capacity assigned to each special area room is usually contingent upon the number of workstations existing in the space. Once the capacity of each instructional space is determined, a total capacity can be computed based on the sum of the individual capacities.

No high school (or middle school) building can operate effectively at 100% capacity. First, students cannot be scheduled into neat groups of 25, 22 or 20. Second, the elective system provides opportunities for students to choose from a variety of course offerings. Third, schools which choose to provide ability level grouping, enrichment classes and programs for the academically advanced, accept increased problems in achieving evenly-balanced classes. A comprehensive educational program requires, therefore, a greater number of teaching stations than would be the case in a school without an elective program. If secondary schools were to operate at total capacity, comprehensiveness and course electives would have to be severely curtailed.

For this reason, the operating capacity of a high school reflects not only spaces available, but also the program design of the school and is calculated at 85% of the maximum capacity of the building. General classrooms were assigned 25 pupils as described in the capacity charts. (See, also, the reference above to undersized classrooms)

NESDEC
New England School Development Council
28 Lord Road, Marlborough, MA 01752 ▸ Tel: 508-481-9444 ▸ www.nesdec.org

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