



BARRINGTON PUBLIC SCHOOLS

School Transportation Analysis (Revised)

JULY 2018

**Futures Education, LLC
136 William Street
Springfield, MA 01105
Tel.: (800) 218-9280
www.DiscoverFutures.com**



BARRINGTON PUBLIC SCHOOLS

SCHOOL TRANSPORTATION ANALYSIS

INTRODUCTION

During our initial meeting (prior to submitting the proposal) District management indicated that:

- There were no plans to either close an existing or open an additional school
- There were no plans to consolidate the three elementary schools.
- There were no plans to reconfigure the 4-5 grades and relocate them to an elementary school.
- The current new Middle School will not accommodate either the 4th or 5th grade.
- There were no plans at present to redistrict the elementary schools in order to balance school enrollments.
- There is discussion however as to revising the overall master school start and ending schedules.

This study was therefore conducted pursuant to the following:

1. Review and analysis of the current regular, in-house (non -State) provided special education transportation and related contracts.
2. Identification of any current regular transportation related issues or problems, including the review of current school transportation policies.
3. Review of the current school transportation routes, with recommendations for increased efficiencies, if applicable.
4. Review of District requirements, including District redistricting plans and start time shifting, for the FY '2019 time period and resultant effect on school transportation efficiencies and costs.
5. Identify possible cost savings by route/vehicle consolidation and improvement of current contract language relative to increases/reductions in the number of buses required throughout the contract.

In addition, subsequent to the school leadership meeting, we were asked to investigate several potential school start/end time configurations, as well as the potential for increased efficiencies by not only revising school bell schedules but also by reducing the number of transportation tiers from the current three to two and combinations thereof.

DISTRICT DEMOGRAPHICS

Barrington is a suburban, residential town in Bristol County, Rhode Island. Barrington is located on the eastern side of Narragansett Bay, in Bristol County, Rhode Island, the third smallest county in the United States. Situated 7 miles southeast of Providence, it consists of two peninsulas divided by the Barrington and Warren rivers. The shoreline of the western peninsula, Phebe's Neck or Popanomscut, is marked by many coves and indentations, making a sharp bend at Nayatt Point. Rumstick Neck, located around one and a half miles east of Nayatt, forms the southern end of Phebe's Neck. To the northeast of Phebe's Neck lies the second peninsula, New Meadow Neck, which is bordered by Hundred Acre Cove and the Palmer River. According to the United States Census Bureau, Barrington has a total area of 15.4 square miles, composed of 8.2 square miles land and 7.2 square miles water.

As of the 2010 United States Census, the population was 16,310 and the population density is approximately 1,942 people per square mile.

Therefore, for school transportation purposes, the District is considered to be densely populated. As such, transportation efficiency may be determined by other than student loading, such as school bell schedules (tier time), school distances and drive time traffic.

BARRINGTON PUBLIC SCHOOLS

The modern public education system in Barrington was constructed during the 1950s, amidst the baby boom and increasing popularity of automobiles. Barrington's single school district, Barrington Public Schools, comprises four elementary schools, a middle school and a high school. Barrington High School, Barrington Middle School, and Nayatt Elementary are National Blue Ribbon Schools, and Barrington High School was ranked No. 200 in the United States in a 2014 analysis by *Newsweek*. *Money* praised the Barrington school system in 2005, naming Barrington the sixth best place to live in the United States.

Private schools in Barrington include Barrington Christian Academy, St. Luke's, and St. Andrew's School.

The following schools are operated by the Barrington Public Schools:

SCHOOL
Barrington High School 220 Lincoln Ave, Barrington, RI 02806
Barrington Middle School 261 Middle Hwy, Barrington, RI 02806

Sowams Elementary School

364 Sowams Rd, Barrington, RI 02806

Nayatt Elementary School

400 Nayatt Rd, Barrington, RI 02806

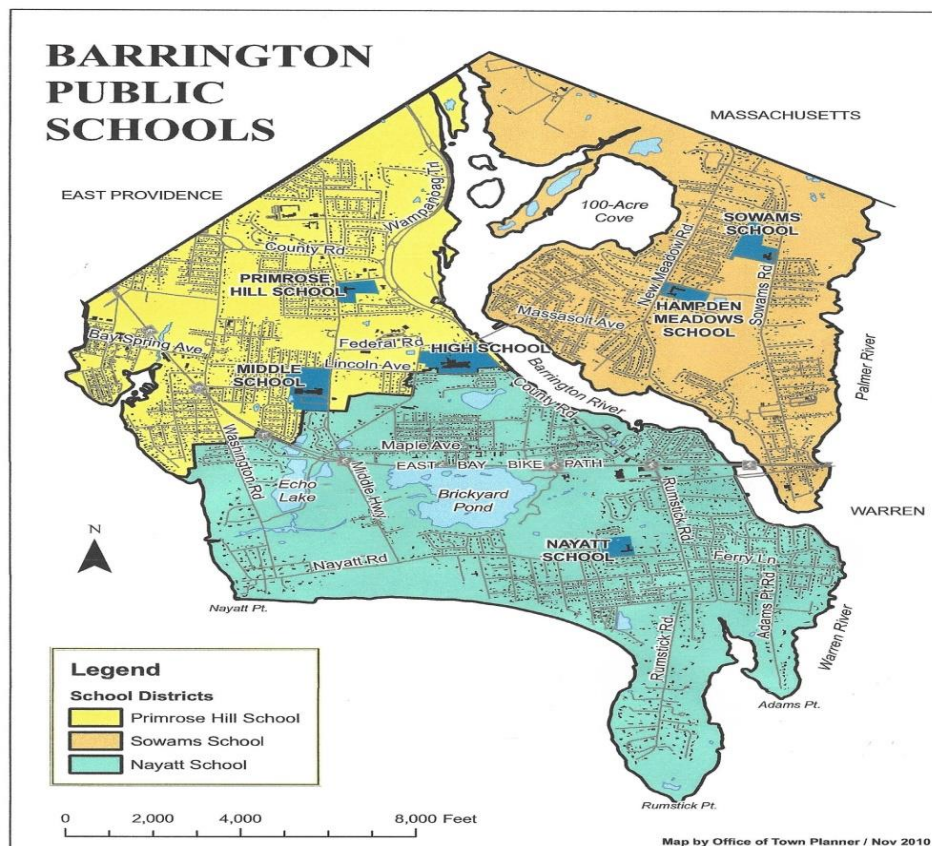
Primrose Hill Elementary School

60 Middle Hwy, Barrington, RI 02806

Hampden Meadows Elementary School

297 New Meadow Rd, Barrington, RI 02806

The following describe the various school enrollment zones:



Given the overall geographic size of the District (8.2+ sq. miles), the elementary schools are located relatively close in proximity.



In addition, the District provides school transportation to Barrington students attending the following schools:

SCHOOL	GRADES	START	END
St. Luke's School 10 Waldron Ave. Barrington, RI 02086	PK-8	8:15	3:00

DEFINITIONS

TIER TIME: A tier is defined as that time which is available prior to the start of the earliest school, the time between the starting time of the earliest school and the starting time of the next earliest school and the time between the starting time of the second earliest and that of the third earliest school.

ROUTE TIME: The time from the bus depot to the actual school drop off time (includes 6-7 minutes of disembarking time).

RIDE TIME: The time from the time of the first student pick up to the last student drop off (either at school or at home).

TRANSPORTATION OPERATIONAL EFFICIENCY

School transportation efficiency is generally determined by the following factors:

- Manual vs. computerized routing and scheduling
- The person who does the routing and scheduling determines the number of buses required.
- Student Riders: Scheduled vs. Actual Riders (Student Loading)
- Time available between school starting and ending times (Tiers)
- Population density, i.e. number of students per mile of bus travel
- Highway/road infrastructure and traffic patterns
- A.M. routes generally drive the number of buses required, as more students ride in the morning than in the afternoon due to after school activities.

CAUTION: Transportation management can sometimes “over consolidate” routes in order to eliminate a bus, only to have to reinstate it during the year or the following year due to required changes or routes which are too long. As a result an efficient transportation system requires some “excess” capacity in order to manage the route and schedule changes from year to year in order to not have to add a bus and driver during the year and after the budget has been set. This is especially true for specialized transportation, which changes almost daily based upon the transportation requirements of the students.



SCHOOL BELL SCHEDULES – TRANSPORTATION TIER TIMES

IN DISTRICT SCHOOLS

The District currently operates a modified 3 Tier system, with Tier 1 being the High/ Middle School; Tier 2 the Elementary Schools and Tier 3 the Hampden Meadows Elementary School.

The following describes the various tier times available for school transportation under the current school bell schedules:

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Barrington High School 220 Lincoln Ave, Barrington, RI 02806	9-12	7:40	2:11	40*	29*
Barrington Middle School 261 Middle Hwy, Barrington, RI 02806	6-8	7:50	2:05	50	35*
Sowams Elementary School 364 Sowams Rd, Barrington, RI 02806	K-3	8:15	2:40	25*	40
Nayatt Elementary School 400 Nayatt Rd, Barrington, RI 02806	K-3	8:15	2:40	25*	40
Primrose Hill Elementary School 60 Middle Hwy, Barrington, RI 02806	PK - 3	8:15 - 2:40 AM Pre K 8:15 - 10:45 PM Pre K 12:00 - 2:30	2:40	25*	40
Hampden Meadows Elementary School 297 New Meadow Rd, Barrington, RI 02806	4-5	8:50	3:20 6.5	45	60



Policy no child transported before 7:00 a.m.

** Relatively short tier times (Less than 45 minutes).

FINDING: The Elementary Schools (A.M.) and the Middle and High Schools (P.M.) have a relatively short tier time available for school transportation. Ideally, a minimum of 50-60 minutes provides the amount of time necessary to maximize transportation efficiencies. Furthermore, the District past practice has been that routes should be no longer than 60 minutes and that no student is picked up prior to 7:00 a.m. When traffic issues and distance are included in the routes, the actual tier time available may be significantly less than the school bell schedules would indicate.

FINDING: Given the relatively short tier time available for school transportation, combined with typical drive time traffic congestion, transportation efficiency is determined by other than student loading. The high number of students transported by other than school buses also exacerbates the traffic congestion problems associated with typical school drive times.

CAVEAT: However, we do not recommend changing school bell schedules for school transportation purposes. School schedules should be set by the District in accordance with their educational requirements.

TRANSPORTATION ROUTING and SCHEDULING

The District utilizes the VersaTrans computer routing and scheduling software. The transportation Coordinator appears to be well trained in its utilization. All requests for routing data were quickly and accurately provided. All questions were also promptly answered.

CURRENT SCHOOL TRANSPORTATION POLICIES

Transportation Walking Policies (from their residence to their assigned school):

Elementary (K-5): .75 mile

High/ Middle School (6--12): 2.0 miles

School Bus Idling

Buses are not allowed to idle while awaiting for passengers

Buses are allowed to idle (time varies) due to outside temperature conditions

Video Cameras

Video cameras are allowed for the purposes of monitoring student behavior as well as school transportation employees

Student Pick Up Times

No student shall be picked up prior to 7:00 a.m.



RECOMMENDATION: In order to maximize student loading and minimize the number of buses required, we recommend that the policy relative to Student Pick Up Time (7:00 a.m.) be revised to student pick up no earlier than 6:45 a.m. This will bring the policy in conformance with currently scheduled students of which there are three routes where students are scheduled to be picked up prior to 7:00 a.m.

Should you choose to enforce the current 7:00 a.m. policy, then those students scheduled with an earlier than 7:00 a.m. pick up time (3 buses & 133 Students) would have to be rescheduled to other buses with later first pick up times, resulting in longer routes and more time required. If those buses can not accommodate these 133 students with a 7:00 a.m. or later pick up time then two (2) additional buses may be required in the a.m. only to accommodate the enforcement of the current 6:45 a.m. policy.

NOTE: Because of the relatively low number of actual riders, as compared to those scheduled, the routes are running faster than scheduled and few if any students are actually being picked up before 7:00 a.m.

TRANSPORTATION COSTS

TRANSPORTATION vs. DISTRICT BUDGETS

	FY'2015	FY'2016	FY'2017	FY'2018
DISTRICT BUDGET	\$ 46,375,464	\$ 47,168,789	\$ 47,966,398	\$ 49,168,846
BUS DRIVERS	\$ 259,788	\$ 273,675	\$ 201,122	\$ 204,750
MONITORS/AIDES	\$ 79,780	\$ 75,686	\$ 71,500	\$ 72,400
GASOLINE	\$ 12,401	\$ 9,553	\$ 29,300	\$ 25,300
VEHICLE MAINTENANCE	\$ 7,416	\$ 11,017	\$ 5,000	\$ 5,000
SUB TOTAL(Self Operated):	\$ 359,386	\$ 369,930	\$ 306,922	\$ 307,450
CONTRACTED TRANSPORTATION	\$ 1,001,439	\$ 1,058,689	\$ 1,097,964	\$ 1,212,731
TOTAL:	\$ 1,360,825	\$ 1,428,619	\$ 1,404,886	\$ 1,520,181
%	2.93%	3.03%	2.93%	3.09%

FINDING: Over the past four years, the total transportation budget has averaged approximately 2.996% of the District budget. Typically, a total transportation cost of less than 5% of the District budget is considered cost effective.

SCHOOL TRANSPORTATION CONTRACT COSTS

The current school transportation contract was the result of a cooperative school transportation bid by the East Bay participating school districts of which Barrington is a member. The cooperative bid provided for a relatively larger economy of scale and presumably attracted greater competition. The result was a competitive price for all of the participating school districts. The current Ocean State



contract is based upon the East Bay (Barrington specific) specifications and their bid documents. In general, the specifications utilized were specific to each participating school district's requirements and were complete and provided the oversight required for contract management.

RECOMMENDATIONS: For future bid specifications (contract) we recommend the following changes:

- Request a cost per bus for a half day, either A.M. or P.M.
- To allow more scheduling flexibility, request costs for additional sizes of buses, in addition to the current 24 and 84 passenger
- Continue to partner with other East Bay school districts for a cooperative bid

Our review of the current contract for school transportation (Ocean State) indicated the following costs:

CONTRACT COSTS		
RNT		
84 PAX	9	\$323.50
SNT		
	1	\$323.50
LATE BUSES		
	2	\$54.02
MONITORS		
	5	\$18.32

FINDING: Based upon our review of school transportation contracts for Districts of similar size and demographics, it is our opinion that the current contractual rate (\$323.50) is cost effective. Current typical costs for new contracts are approximately \$367 per bus per day.

Should the District choose to revise its school bell schedules in a manner which would necessitate the addition of one or more school buses, the resultant cost increase would be approximately as follows:

CONTRACT COST ADDITIONAL BUSES			
RNT		DAILY	ANNUAL
84 PAX	1	\$ 323.50	\$ 58,230.00
SNT	1	\$ 323.50	\$ 58,230.00
MONITORS			
	2	\$ 18.32	\$ 29,678.40



TOTAL:	\$ 146,138.40
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SELF OPERATED vs. CONTRACTED COST COMPARISON

SELF OPERATED (210 DAYS):		
2 MINI BUSES (+Spare Bus)	\$	235,050
MONITORS (2)	\$	72,400
	\$	307,450
CONTRACTED COST (210 DAYS):		
2 MINI BUSES (8 HRS)	\$	226,624
MONITORS (2) (8 HOURS)	\$	61,555
	\$	288,179
DIFFERENCE:	\$	19,271
		6.27%

FINDING: The cost comparison of the two self-operated mini buses to that of contracting for 2 mini buses and bus monitors for a total of 210 days (school year + summer) indicates a slightly higher cost (6.27%). The District accepts the slightly higher cost as it has more control over the mini buses and their utilization.

However, should the next contract be at current market rate of approximately \$ 367.00 per day and adjusted to \$ 583.04 per day for the exclusive use of the bus for 8 hours per day, the resultant cost difference becomes insignificant (\$ 1001.00).

SELF OPERATED (210 DAYS):		
2 MINI BUSES (+Spare Bus)	\$	235,050
MONITORS (2)	\$	72,400
	\$	307,450
CONTRACTED COST (210 DAYS):		
2 MINI BUSES (8 HRS)	\$	244,894
MONITORS (2) (8 HOURS)	\$	61,555
	\$	306,449
DIFFERENCE:	\$	1,001
		0.33%

There were no other significant recommendations relative to the current school transportation contact.

BUS MONITORS

The District currently employs 2 Bus Monitors who are also trained drivers (sub drivers). Monitors are required by DESE regulation for all special education vehicles and for students through grade 5. In the Statewide Special Education Program, in which all Districts are required to participate, the cost of the Bus Monitors is built into the cost per day per bus/vehicle calculation by RIDE and the cost of which is prorated and cost shared amongst those Districts utilizing those services.

The current Bus Monitors, both District or RIDE Contractor employed, do not consistently receive the training necessary to address all of the special requirements of Special Education and/or Students with Disabilities:

- First Aid and CPR
- Student Behavior Management
- Restraint Training
- Epi Pen Administration
- Nut, Tree Nut and Other Allergens
- Seizure Training

RECOMMENDATION: The District may wish to consider providing the above training necessary to safeguard the safety and welfare of those students with/without handicapping conditions. For its employed mini bus drivers and monitors.

Any request for a waiver from the bus monitor requirement must be made in writing to the RIDE Commissioner of Education with a specific justification for the request.

School Bus Monitor Variance requests due June 30 for summer transportation, August 19 for the coming school year. If you are planning to use one of the approved School Bus Monitor Variances for the coming school year (2016-17), it is time to submit your requests through the eRIDE system. Please submit requests by June 30 for any July through August K-5 transportation. Requests for September through June of the 2016-17 school year should be submitted by August 19. If you have any questions regarding access to the variance module through eRIDE or the allowable variances, please contact Cindy Brown, at 222-4257 or Cynthia.Brown@ride.ri.gov.

Because Bus Monitors are generally guaranteed 4 hours of employment per day, it would be difficult to only remove or waive them from the 4-5th grade routes. Without the 4 hour guarantee, it would be difficult to recruit and retain qualified Bus Monitors.

With regard to a waiver, they are typically granted only if:

- The District certifies that there are no students with handicapping conditions, including behavioral issues on the respective bus and that there have been no student safety incidents or issues over the past several years



- The Bus Monitors do not act as crossing guards to assist students crossing the street (a source of student school bus accidents)

A waiver places liability for any student injury on the District, even though the Bus Monitor may be a Contractor employee. Typically, waivers are NOT granted solely for the purpose of saving money.

The following identifies the potential cost savings, should a waiver be granted for the District's contracted transportation employed bus monitors (Ocean State):

MONITOR COST AVOIDANCE					
MONITORS	NO.	HOURS	DAYS	RATE	2018-19 ANNUAL
	4	4.5	180	\$ 18.32	\$ 59,340.60
	1	2.5	180	\$ 18.32	\$ 8,241.75
TOTAL:					\$ 67,582.35

RECOMMENDATION: Current school employed paraprofessionals should be encouraged to act as Bus Monitors before and after school for additional compensation. This has proven to provide better trained personnel and Monitors both know and are knowledgeable of the child's special requirements.

EQUIPMENT

The District routinely utilizes 84 passenger buses for regular transportation. Door to door special education transportation is done utilizing buses no larger than 21 passenger mini buses.

CURRENT VEHICLE UTILIZATION

CATEGORY	BUSES	MINI BUSES
RNT	9	
ID SPE	1	2*
OD SPE/HOMELESS	(RIDE Statewide Varies)	
SUBTOTAL:	10	2
TOTAL:		12

* In addition to contracting, the District owns and operates 2 mini buses, which are scheduled for students who do not easily fit existing routes, workplace transportation, parent transportation, student emergency situations, etc.

TRANSPORTATION VEHICLE CAPACITIES

School bus safety requires all students to be safely seated without legs in the aisle or blocking the bus aisle or rear emergency door. For upper grade students, this standard reduces the seating



capacity to 2 students per seat. Current manufacturer 13" bus seats will not typically accommodate 3 students per seat for older students.

Given current industry standards and required student safety the following represents the safe seating capacity for school buses for the various student age groups:

Industry Standard- Adult (High School Students) School Bus Seating Capacity

"The seating capacity of a school bus is based on three students per 39 inch school bus seat. However, the generally accepted industry standard for adults and high school age students is that only two (2) adults/students will safely fit into a 39 inch school bus seat. Students may not hang over the edge of the seat, as doing so eliminates the compartmentalization safety for those students." (New England Transit Sales, Inc.)

Therefore, based upon the preceding industry standard, the following would be the safe seating capacity for adult and high school age students:

School Bus Capacities

BUS SIZE	TIER	84	77	71	65	47	27	21	16	7
K TO 5	TIER 3	84	77	71	65	47	27	21	16	7
6 TO 8	TIER 2	56	52	47	43	31	18	16	11	5
9 TO 12	TIER 1	56	52	47	43	31	18	15	11	5

* According to Accepted Industry Standards

The District contracts for 84 passenger buses which seat 84 elementary and 56 middle and high school students.

DISTRICT REPORTED ISSUES

In our discussions with management, the only issues presented were:

- Some students are scheduled to be picked up prior to 7:00 a.m. in violation of District policy.
- Some students who reside within the District policy walking limits of .75 mile for K-5 and 2 miles for grades 6-12.

STUDENT PICK UP TIMES

The District policy is that no student is to be picked up earlier than 7:00 a.m. The following routes (scheduled students) are in violation of that policy:

FINDINGS:

On HS/MS **Bus B-3** (See Route Data Page 23):

- 21 HS/MS students were scheduled to be picked up at 6:52 a.m.
- 14 HS/MS students were scheduled to be picked up at 6:54 a.m.
- 28 HS/MS students were scheduled to be picked up at 6:57 a.m.
- 4 HS/MS students were scheduled to be picked up at 6:59 a.m.

On HS/MS **Bus B-5** (See Route Data Page 23):

- 1 HS/MS students were scheduled to be picked up at 6:58 a.m.

On HS/MS **Bus B-11** (See Route Data Page 23):

- 10 HS/MS students were scheduled to be picked up at 6:53 a.m.
- 18 HS/MS students were scheduled to be picked up at 6:54 a.m.
- 6 HS/MS students were scheduled to be picked up at 6:56 a.m.
- 20 HS/MS students were scheduled to be picked up at 6:57 a.m.
- 7 HS/MS students were scheduled to be picked up at 6:58 a.m.
- 4 HS/MS students were scheduled to be picked up at 6:59 a.m.

RECOMMENDATION: The recommendation was to require the Contractor to adjust those routes start time, so that the first student pick up was no earlier than 7:00 a.m. Given the relatively low ridership for those routes, we felt confident that the route end time could be met.

ALTERNATIVE RECOMMENDATION 1: If the routes could not, in fact be adjusted as recommended, the routes would have to be reconfigured and another bus added.

ALTERNATIVE RECOMMENDATION 2: If the routes could not, in fact be adjusted as recommended, the District may wish to consider revising its current policy and allowing students to be picked up no earlier than 6:45 a.m. instead of adding a bus.

STUDENT WALKING LIMITS and BUS STOP ANALYSIS

The following describes the current number of stops per route and stops per mile:

A.M. ROUTES

BUS NO.	RT. NO.	DESCRIPTION	MILES	STOPS	STOPS/ MILE
B-1	BHS-B1A	HS/MS	5.99	11	1.84
B-2	B2A	HS/MS	4.15	8	1.93
B-3	B3A	HS/MS	6.19	10	1.62
B-4	B4A	HS/MS	5.51	9	1.63
B-5	B5A	HS/MS	4.41	17	3.85

BUS NO.	RT. NO.	DESCRIPTION	MILES	STOPS	STOPS/MILE
B-6	B6A	HS/MS	4.76	9	1.89
B-7	B7A	HS/MS	4.06	13	3.20
B-8	B8A	HS/MS	4.53	14	3.09
B-11 (9)	B9A	HS/MS	6.29	13	2.07
B-10	B10A	HS/MS	5.22	9	1.72
B-9	SL/09	St. Luke	20.7	18	0.87
B-7	B7A	SES	3.51	21	5.98
B-8	B8A	SES	4.3	26	6.05
B-1	B1A	NAY	5.43	15	2.76
B-3	B3A	NAY	4.76	18	3.78
B-6	B6A	NAY	5.92	20	3.38
B-10	B10A	NAY	3.82	12	3.14
B-2	B2A	PHES	6.5	17	2.62
B-4	B4A	PHES	4.66	17	3.65
B-5	B5A	PHES	4.7	16	3.40
B-1	B1A	HMS	6.41	16	2.50
B-2	B2A	HMS	4.63	13	2.81
B-3	B3A	HMS	5.96	14	2.35
B-4	B4A	HMS	7.91	19	2.40
B-5	B5A	HMS	5.6	12	2.14
B-6	B6A	HMS	5.48	13	2.37
B-7	B7A	HMS	4.15	19	4.58
B-8	B8A	HMS	6.61	14	2.12
B-9	B9A	HMS	4.66	8	1.72
B-10	B10A	HMS	5.05	9	1.78

AVERAGE STOPS/MILE:	
HS/MS	2.21
ELEM.	3.72
HMS	2.43
OVERALL	2.50

AVERAGE SCHED. STUDENTS/STOP	5.7
AVERAGE NO. STUDENTS per MILE:	14.3

FINDING: Both the walking limits, the resultant number of students per bus stop, the number of stops per mile of bus travel and the number of students per mile of bus travel are well within the limits expected for a relatively densely populated school district.

P.M. ROUTES

BUS NO.	RT. NO.	DESCRIPTION	MILES	STOPS	STOPS/ MILE
B-1	B1P	HS/MS	4.87	11	0.44
B-2	B2P	HS/MS	6.74	12	0.56
B-3	B3P	HS/MS	6	10	0.60
B-4	B4P	HS/MS	5.28	9	0.59
B-5	B5P	HS/MS	3.39	16	0.21
B-6	B6P	HS/MS	4.51	9	0.50
B-7	B7P	HS/MS	4.42	15	0.29
B-8	B8P	HS/MS	7.01	14	0.50
B-9	B9P	HS/MS	5.69	13	0.44
B-10	B10P	HS/MS	5.25	9	0.58
B-9	9P	St. Lukes	19.96	21	0.95
B-1	B1P	NAY	5.48	16	0.34
B-3	B3P	NAY	4.76	20	0.24
B-6	B6P	NAY	5.96	20	0.30
B-10	B10P	NAY	3.57	12	0.30
B-7	B7P	SES	4.04	22	0.18
B-8	B8P	SES	4.05	26	0.16
B-2	B2P	PHES	6.48	17	0.38
B-4	B4P	PHES	4.99	18	0.28
B-5	B5P	PHES	3.56	10	0.36
B-9	B9P	PHES	2:01	6	0.01
B-1	B1P	HMS	6.73	16	0.42
B-2	B2P	HMS	4.72	13	0.36
B-3	B3P	HMS	6.25	14	0.45
B-4	B4P	HMS	8.83	20	0.44
B-5	B5P	HMS	6.11	18	0.34
B-6	B6P	HMS	5.48	12	0.46
B-7	B7P	HMS	4.77	17	0.28
B-8	B8P	HMS	5.54	12	0.46
B-10	B10P	HMS	4.75	9	0.53

AVERAGE STOPS/MILE:	
HS/MS	2.22
ELEM.	3.89
HMS	2.46
OVERALL	2.58

AVERAGE SCHED. STUDENTS/STOP	5.6
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AVERAGE NO. STUDENTS per MILE:	14.6
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FINDING: Both the walking limits, the resultant number of students per bus stop, the number of stops per mile of bus travel and the number of students per mile of bus travel are well within the limits expected for a relatively densely populated school district.

STOPS WITHIN WALKING DISTANCES A.M. ROUTES

District policy for student walking distances is for K-5: .75 miles and for grades 6-12: 2 miles. The following indicates the number of scheduled route stops in violation of this policy. Many of these stops have been approved for various safety reasons, such as a lack of sidewalks:

BUS NO.	RT. NO.	DESCRIPTION	EXCEPT. STOPS	NO. STUDENTS
B-1	BHS-B1A	HS/MS	3	64
B-2	B2A	HS/MS	0	0
B-3	B3A	HS/MS	1	8
B-4	B4A	HS/MS	1	1
B-5	B5A	HS/MS	3	27
B-6	B6A	HS/MS	0	0
B-7	B7A	HS/MS	0	0
B-8	B8A	HS/MS	3	30
B-11 (9)	B9A	HS/MS	1	1
B-10	B10A	HS/MS	0	0
B-9	SL/09	St. Luke	4	6
B-7	B7A	SES	4	10
B-8	B8A	SES	2	5
B-1	B1A	NAY	0	0

BUS NO.	RT. NO.	DESCRIPTION	EXCEPT. STOPS	NO. STUDENTS
B-3	B3A	NAY	0	0
B-6	B6A	NAY	0	0
B-10	B10A	NAY	1	3
B-2	B2A	PHES	0	0
B-4	B4A	PHES	0	0
B-5	B5A	PHES	0	0
B-1	B1A	HMS	0	0
B-2	B2A	HMS	0	0
B-3	B3A	HMS	0	0
B-4	B4A	HMS	1	1
B-5	B5A	HMS	0	0
B-6	B6A	HMS	1	1
B-7	B7A	HMS	1	1
B-8	B8A	HMS	0	0
B-9	B9A	HMS	0	0
B-10	B10A	HMS	0	0

**STOPS WITHIN WALKING DISTANCES
P.M. ROUTES**

BUS NO.	RT. NO.	DESCRIPTION	EXCEPT. STOPS	NO. STUDENTS
B-1	BHS-B1A	HS/MS	0	0
B-2	B2A	HS/MS	0	0
B-3	B3A	HS/MS	0	0
B-4	B4A	HS/MS	0	0
B-5	B5A	HS/MS	1	1
B-6	B6A	HS/MS	0	0
B-7	B7A	HS/MS	0	0
B-8	B8A	HS/MS	1	10
B-11 (9)	B9A	HS/MS	1	1
B-10	B10A	HS/MS	0	0
B-9	SL/09	St. Luke	0	0
B-7	B7A	SES	3	8
B-8	B8A	SES	2	5

BUS NO.	RT. NO.	DESCRIPTION	EXCEPT. STOPS	NO. STUDENTS
B-1	B1A	NAY	0	0
B-3	B3A	NAY	0	0
B-6	B6A	NAY	0	0
B-10	B10A	NAY	1	3
B-2	B2A	PHES	1	4
B-4	B4A	PHES	0	0
B-5	B5A	PHES	1	1
B-1	B1A	HMS	0	0
B-2	B2A	HMS	0	0
B-3	B3A	HMS	0	0
B-4	B4A	HMS	1	1
B-5	B5A	HMS	0	0
B-6	B6A	HMS	1	1
B-7	B7A	HMS	1	1
B-8	B8A	HMS	0	0
B-9	B9A	HMS	0	0
B-10	B10A	HMS	0	0

FINDING: Other than HS/MS Buses B-5 and B-7 and SES Bus B-7, all other buses have minimal if any bus stops located with the District walking zones of .75 mile for K-5 and 2 miles for grades 6-12. Those stops were reportedly due to safety concerns as there are no sidewalks and have presumably been designated as exceptions to the policy.

The elimination of those stops within the walking limit policy, while not recommended, would only serve to shorten the respective routes by a maximum of 4-5 minutes, an insignificant time savings and having no financial savings.

OPERATIONS

The following route information was extrapolated from various reports provided by both transportation management and by the Contractor.

ROUTE TIME vs. STUDENT TIME

The following describes the differences between the stated route times and the actual student time on vehicle.



A.M. ROUTES

BUS NO.	RT. NO.	TIER	DESCRIPTION	ROUTE	STUD.	DIFFERENCE	DEAD	LOAD	AVAIL.
		TIME		TIME	TIME		HEAD	UNLOAD	TIME
B-1	BHS-B1A	40	HS/MS	27	26	1	0	6	8
B-2	B2A	40	HS/MS	24	24	0	0	6	10
B-3	B3A	40	HS/MS	36	36	0	0	6	-2
B-4	B4A	40	HS/MS	22	22	0	0	6	12
B-5	B5A	40	HS/MS	28	27	1	0	6	7
B-6	B6A	40	HS/MS	25	23	2	0	6	11
B-7	B7A	40	HS/MS	23	23	0	0	6	11
B-8	B8A	40	HS/MS	21	21	0	0	6	13
B-11 (9)	B9A	40	HS/MS	30	30	0	0	6	4
B-10	B10A	40	HS/MS	27	26	1	0	6	8
B-9	SL/09	60	St. Luke	58	58	0			2
B-7	B7A	25	SES	18	18	0	0	6	1
B-8	B8A	25	SES	25	25	0	6	6	-12
B-1	B1A	25	NAY	26	25	1	7	6	-13
B-3	B3A	25	NAY	22	22	0	5	6	-8
B-6	B6A	25	NAY	28	28	0	3	6	-12
B-10	B10A	25	NAY	21	20	1	15	6	-16
B-2	B2A	25	PHES	26	26	0	13	6	-20
B-4	B4A	25	PHES	24	24	0	2	6	-7
B-5	B5A	25	PHES	24	24	0	5	6	-10
B-1	B1A	35	HMS	27	27	0	3	6	-1
B-2	B2A	35	HMS	19	18	1	8	6	3
B-3	B3A	35	HMS	24	23	1	13	6	-7
B-4	B4A	35	HMS	33	33	0	12	6	-16
B-5	B5A	35	HMS	21	20	1	23	6	-14
B-6	B6A	35	HMS	21	21	0	17	6	-9
B-7	B7A	35	HMS	16	15	1	26	6	-12
B-8	B8A	35	HMS	23	23	0	16	6	-10
B-9	B9A	35	HMS	13	13	0	0	6	16
B-10	B10A	35	HMS	17	17	0	12	6	0



P.M. ROUTES

BUS NO.	RT. NO.	TIER	DESCRIPTION	ROUTE	STUD.	DIFFERENCE	DEAD	LOAD	AVAIL.
		TIME		TIME	TIME		HEAD	UNLOAD	TIME
B-1	B1P	29	HS/MS	21	21	0	0	6	2
B-2	B2P	29	HS/MS	32	32	0	0	6	-9
B-3	B3P	29	HS/MS	30	30	0	0	6	-7
B-4	B4P	29	HS/MS	20	20	0	0	6	3
B-5	B5P	29	HS/MS	18	18	0	0	6	5
B-6	B6P	29	HS/MS	22	22	0	0	6	1
B-7	B7P	29	HS/MS	19	19	0	0	6	4
B-8	B8P	29	HS/MS	26	26	0	0	6	-3
B-9	B9P	29	HS/MS	22	22	0	0	6	1
B-10	B10P	29	HS/MS	23	23	0	0	6	0
B-9	9P	60	St. Lukes	60	60	0		6	0
B-1	B1P	40	NAY	25	25	0	14	6	-5
B-3	B3P	40	NAY	22	22	0	3	6	9
B-6	B6P	40	NAY	28	28	0	6	6	0
B-10	B10P	40	NAY	20	20	0	14	6	0
B-7	B7P	40	SES	19	19	0	18	6	-3
B-8	B8P	40	SES	22	22	0	13	6	-1
B-2	B2P	40	PHES	26	26	0	17	6	-9
B-4	B4P	40	PHES	25	25	0	9	6	0
B-5	B5P	40	PHES	16	16	0	13	6	5
B-9	B9P	40	PHES	9	9	0	13	6	12
B-1	B1P	60	HMS	28	27	1	25	6	1
B-2	B2P	60	HMS	19	17	2	33	6	2
B-3	B3P	60	HMS	24	19	5	22	6	8
B-4	B4P	60	HMS	36	35	1	30	6	-12
B-5	B5P	60	HMS	27	25	2	31	6	-4
B-6	B6P	60	HMS	20	19	1	27	6	7
B-7	B7P	60	HMS	16	16	0	24	6	14
B-8	B8P	60	HMS	19	17	2	25	6	10
B-10	B10P	60	HMS	15	11	4	38	6	1



FINDING: Most of the District routes start at or near the first student pick up address. Therefore, there is very little time difference between the scheduled route time and the scheduled student time on vehicle.

FINDING: As can be seen from the previous route schedule data, when dead head time and school drop off times (4-6 minutes) are factored into the route schedule, many buses are scheduled to arrive late. Because the actual student load is significantly less than the numbers of students scheduled, the buses are actually arriving and unloading within the available tier time.

However, should school bell schedules be revised which would shorten the current transportation tier times and/or increase actual ridership, these schedules may no longer work, without adding school buses.



**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
ALL TIERS
A.M. ROUTES**

BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD*	CAPACITY
BHS-											
B-1	B1A	HS/MS	1	7:03	7:30	0:27	40	5.99	153	17	56
B-2	B2A	HS/MS	1	7:00	7:24	0:24	40	4.15	107	36	56
B-3	B3A	HS/MS	1	6:52	7:28	0:36	40	6.19	172	21	56
B-4	B4A	HS/MS	1	7:02	7:24	0:22	40	5.51	72	27	56
B-5	B5A	HS/MS	1	6:58	7:26	0:28	40	4.41	170	55	56
B-6	B6A	HS/MS	1	6:59	7:24	0:25	40	4.76	110	32	56
B-7	B7A	HS/MS	1	7:00	7:23	0:23	40	4.06	153	55	56
B-8	B8A	HS/MS	1	7:04	7:25	0:21	40	4.53	105	43	56
B-11 (9)	B9A	HS/MS	1	6:53	7:23	0:30	40	6.29	128	55	56
B-10	B10A	HS/MS	1	7:03	7:30	0:27	40	5.22	103	30	56
B-9	SL/09	St. Luke	1	7:15	8:13	0:58	60	20.7	32	12	26
B-7	B7A	SES	2	7:29	7:47	0:18	25	3.51	86	38	84
B-8	B8A	SES	2	7:31	7:56	0:25	25	4.3	99	41	84
B-1	B1A	NAY	2	7:35	8:01	0:26	25	5.43	56	43	84
B-3	B3A	NAY	2	7:33	7:55	0:22	25	4.76	66	26	84
B-6	B6A	NAY	2	7:29	7:57	0:28	25	5.92	69	41	84
B-10	B10A	NAY	2	7:39	8:00	0:21	25	3.82	62	41	84
B-2	B2A	PHES	2	7:36	8:02	0:26	25	6.5	59	33	84
B-4	B4A	PHES	2	7:27	7:51	0:24	25	4.66	102	48	84
B-5	B5A	PHES	2	7:28	7:52	0:24	25	4.7	88	39	84



BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD*	CAPACITY
B-1	B1A	HMS	3	8:04	8:31	0:27	35	6.41	61	38	84
B-2	B2A	HMS	3	8:10	8:29	0:19	35	4.63	43	25	84
B-3	B3A	HMS	3	8:09	8:33	0:24	35	5.96	44	24	84
B-4	B4A	HMS	3	8:03	8:36	0:33	35	7.91	53	24	84
B-5	B5A	HMS	3	8:15	8:36	0:21	35	5.6	58	21	84
B-6	B6A	HMS	3	8:14	8:35	0:21	35	5.48	34	14	84
B-7	B7A	HMS	3	8:13	8:29	0:16	35	4.15	58	15	84
B-8	B8A	HMS	3	8:12	8:35	0:23	35	6.61	56	22	84
B-9	B9A	HMS	3	8:21	8:34	0:13	35	4.66	23	12	84
B-10	B10A	HMS	3	8:12	8:29	0:17	35	5.05	43	22	84

*Highest of 5 Days

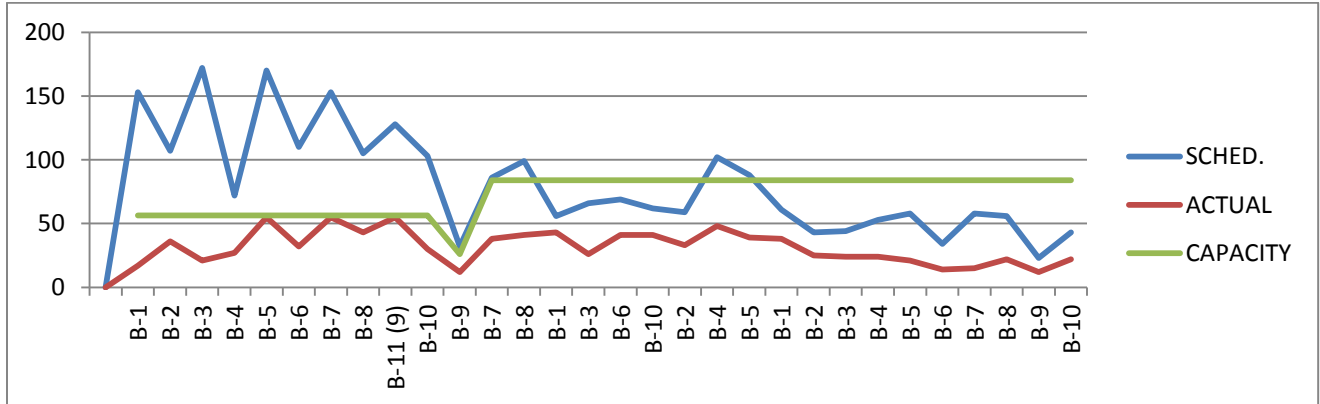
Student pick up prior to 7:00 a.m.

METRICS A.M. ROUTES

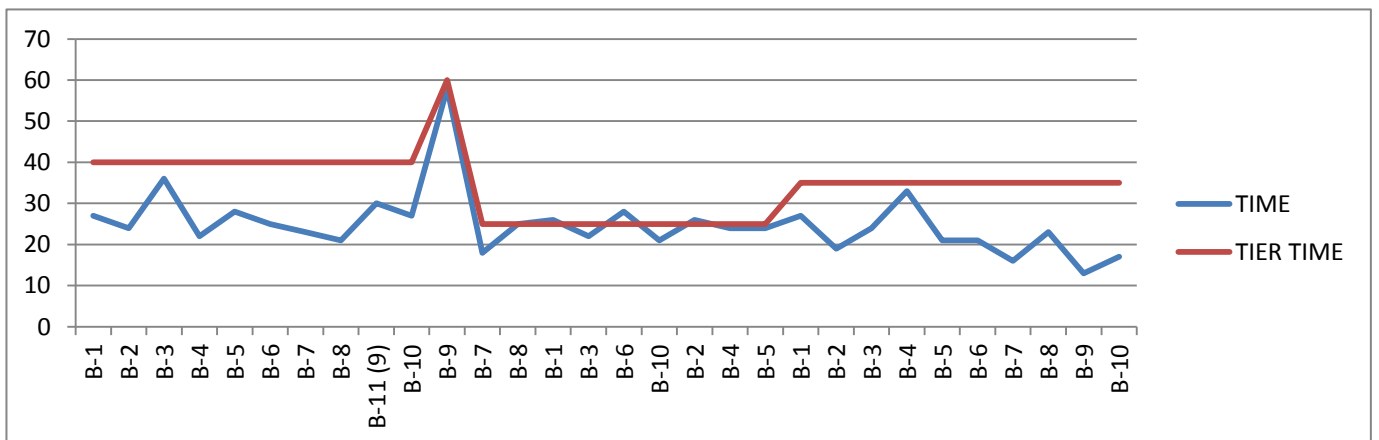
No. Buses	11
No. Routes	30
Ave. Rts/Bus	2.7
Ave. Time/Rt	0:24
Ave. Miles/Rt	5.7
Ave. Sched. Load/Rt	82.2
Ave. Actual Load/Rt	31.7
Sched. Load/Capacity Ratio	113%
Actual Load/Capacity Ratio	43.5%

NON BUS	1515
RIDERS	61%

LOAD CAPACITY ANALYSIS A.M. ROUTES



ROUTE TIER TIME ANALYSIS A.M. ROUTES



FINDINGS:

- The average route time is approximately 24 minutes, with most routes scheduled to operate within those tier time limits.
- The average route distance is approximately 5.7 miles
- The average scheduled student load is approximately 82 students which represents an average of 113% of the bus capacity.
- The average actual student load is approximately 32 students which represents an average of 43.5% of the bus capacity.
- While 2465 students are eligible to ride, only 950 actually do so. Approximately 1515 (61% of eligible riders) do not ride the bus.



Should the District wish to investigate the reasons for this level of parent transportation, they may wish to conduct an online survey of parents (*See Sample -Appendix A*).

COMMENDATION: Recognizing the large number of eligible students who do not ride the bus, transportation management routinely over schedules those buses in order to maximize route efficiencies.

The following represents our analysis of the individual route tiers. This analysis was conducted in order to ascertain whether there were any additional efficiencies to be gained by restructuring the transportation tier times (bell schedules) or by reconfiguring to a two-tier system.

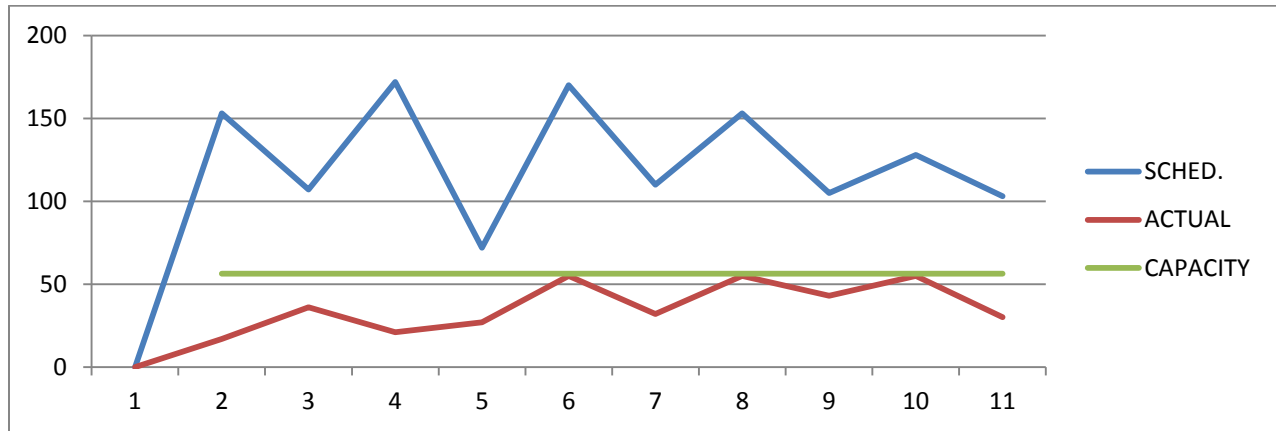
**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
TIER 1
A.M. ROUTES**

BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD*	CAPACITY
B-1	BHS-B1A	HS/MS	1	7:03	7:30	0:27	40	5.99	153	17	56
B-2	B2A	HS/MS	1	7:00	7:24	0:24	40	4.15	107	36	56
B-3	B3A	HS/MS	1	6:52	7:28	0:36	40	6.19	172	21	56
B-4	B4A	HS/MS	1	7:02	7:24	0:22	40	5.51	72	27	56
B-5	B5A	HS/MS	1	6:58	7:26	0:28	40	4.41	170	55	56
B-6	B6A	HS/MS	1	6:59	7:24	0:25	40	4.76	110	32	56
B-7	B7A	HS/MS	1	7:00	7:23	0:23	40	4.06	153	55	56
B-8	B8A	HS/MS	1	7:04	7:25	0:21	40	4.53	105	43	56
B-11 (9)	B9A	HS/MS	1	6:53	7:23	0:30	40	6.29	128	55	56
B-10	B10A	HS/MS	1	7:03	7:30	0:27	40	5.22	103	30	56

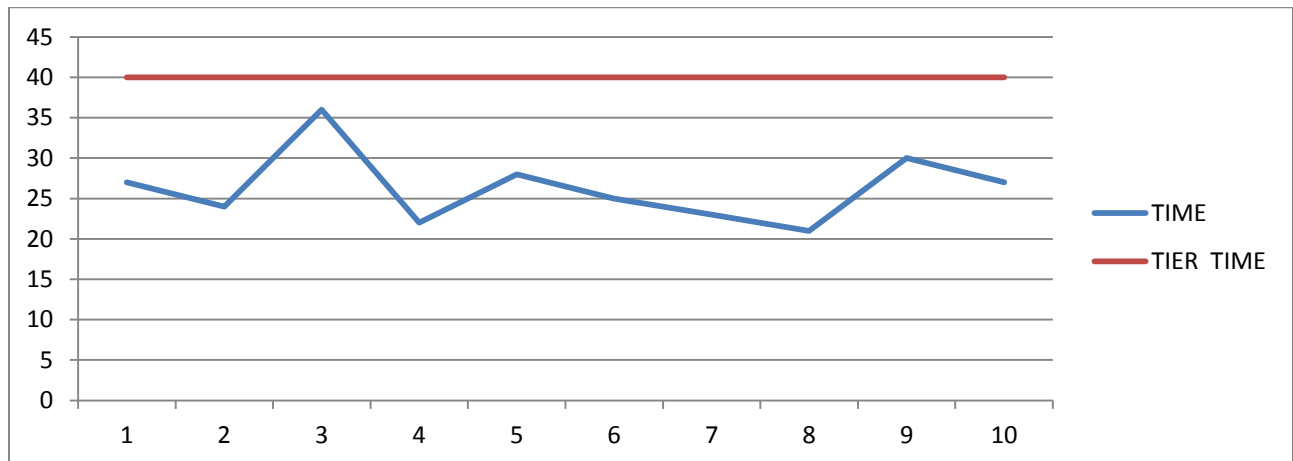
CURRENT METRICS		ELIMINATE B-4 METRICS	
No. Buses	10	No. Buses	9
No. Routes	10	No. Routes	9
Ave. Rts/Bus	1.0	Ave. Rts/Bus	1.0
Ave. Time/Rt	0:26	Ave. Time/Rt	0:29
Ave. Miles/Rt	5.1	Ave. Miles/Rt	5.7
Ave. Sched. Load/Rt	127.3	Ave. Sched. Load/Rt	141.4
Ave. Actual Load/Rt	37.1	Ave. Actual Load/Rt	41.2
Sched. Load/Capacity Ratio	226%	Sched. Load/Capacity Ratio	251%
Actual Load/Capacity Ratio	65.9%	Actual Load/Capacity Ratio	73.2%

NON BUS	902
RIDERS	71%

LOAD-CAPACITY ANALYSIS



ROUTE-TIER TIME ANALYSIS



FINDINGS:

- The average route time is approximately 26 minutes, with all routes scheduled to operate well within those tier time limits (40 minutes).
- The average route distance is approximately 5.1 miles
- The average scheduled student load is approximately 127 students which represents an average of 226% of the bus capacity.
- The average actual student load is approximately 37 students which represents an average of 65.9% of the bus capacity.
- While 1273 students are eligible to ride, only 371 actually do so. Approximately 902 (71% of eligible riders) do not ride the bus.

- With a reconfiguration of the current routes, it is possible to eliminate 1 bus in the A.M. Tier 1 (RT. B-4A). This would increase the actual load/capacity ratio to approximately 73.2%.

**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
TIER 2
A.M. ROUTES**

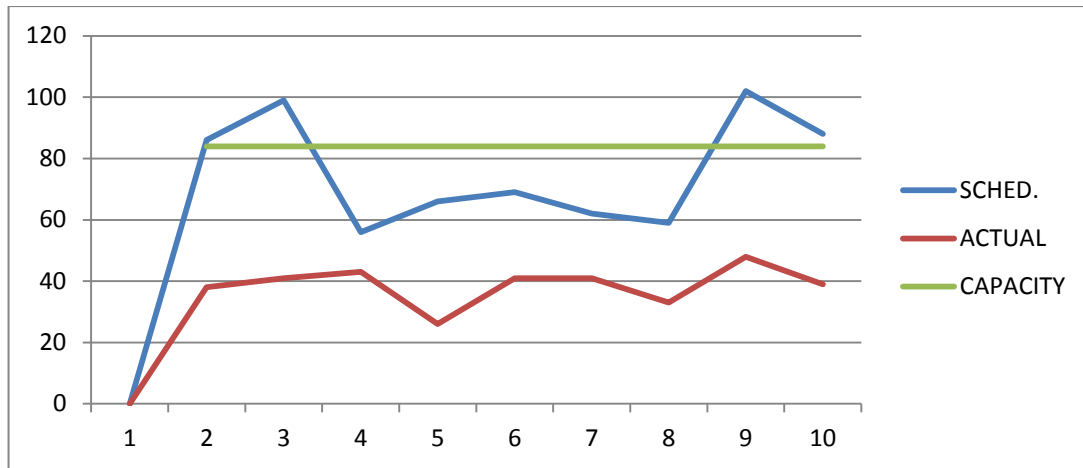
BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD	CAPACITY
B-7	B7A	SES	2	7:29	7:47	0:18	25	3.51	86	38	84
B-8	B8A	SES	2	7:31	7:56	0:25	25	4.3	99	41	84
B-1	B1A	NAY	2	7:35	8:01	0:26	25	5.43	56	43	84
B-3	B3A	NAY	2	7:33	7:55	0:22	25	4.76	66	26	84
B-6	B6A	NAY	2	7:29	7:57	0:28	25	5.92	69	41	84
B-10	B10A	NAY	2	7:39	8:00	0:21	25	3.82	62	41	84
B-2	B2A	PHES	2	7:36	8:02	0:26	25	6.5	59	33	84
B-4	B4A	PHES	2	7:27	7:51	0:24	25	4.66	102	48	84
B-5	B5A	PHES	2	7:28	7:52	0:24	25	4.7	88	39	84

Less than ideal

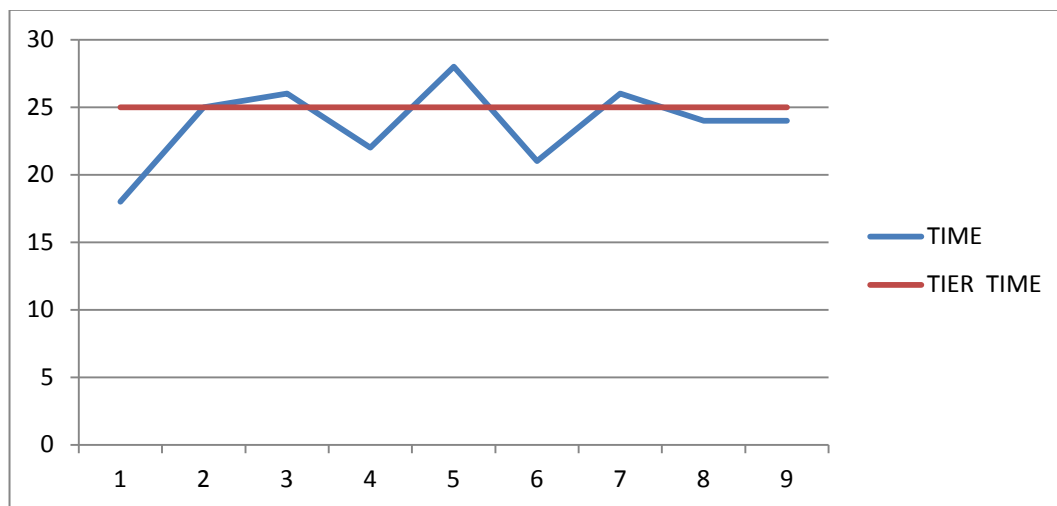
CURRENT METRICS		ELIMINATE B-3 METRICS	
No. Buses	9	No. Buses	8
No. Routes	9	No. Routes	8
Ave. Rts/Bus	1.0	Ave. Rts/Bus	1.0
Ave. Time/Rt	0:23	Ave. Time/Rt	0:26
Ave. Miles/Rt	4.8	Ave. Miles/Rt	5.5
Ave. Sched. Load/Rt	76.3	Ave. Sched. Load/Rt	85.9
Ave. Actual Load/Rt	38.9	Ave. Actual Load/Rt	43.8
Sched. Load/Capacity Ratio	91%	Sched. Load/Capacity Ratio	102%
Actual Load/Capacity Ratio	46.3%	Actual Load/Capacity Ratio	52.1%

NON BUS	337
RIDERS	49%

LOAD-CAPACITY ANALYSIS



ROUTE-TIER TIME ANALYSIS



FINDINGS:

- Tier 2 has a relatively short transportation tier time available for transportation (25 minutes).
- The average route time is approximately 23 minutes, with most routes scheduled to operate very near to those tier time limits (25 minutes).
- The average route distance is approximately 4.8 miles
- The average scheduled student load is approximately 76.3 students which represents an average of 91% of the bus capacity.
- The average actual student load is approximately 39 students which represents an average of 46.3% of the bus capacity.
- While 687 students are eligible to ride, only 350 actually do so. Approximately 337 (49% of eligible riders) do not ride the bus.

- With a reconfiguration of the current routes, it is possible to eliminate 1 bus in the A.M. Tier 2 (RT. B-3A). This would increase the actual load/capacity ratio to approximately 52.1%.

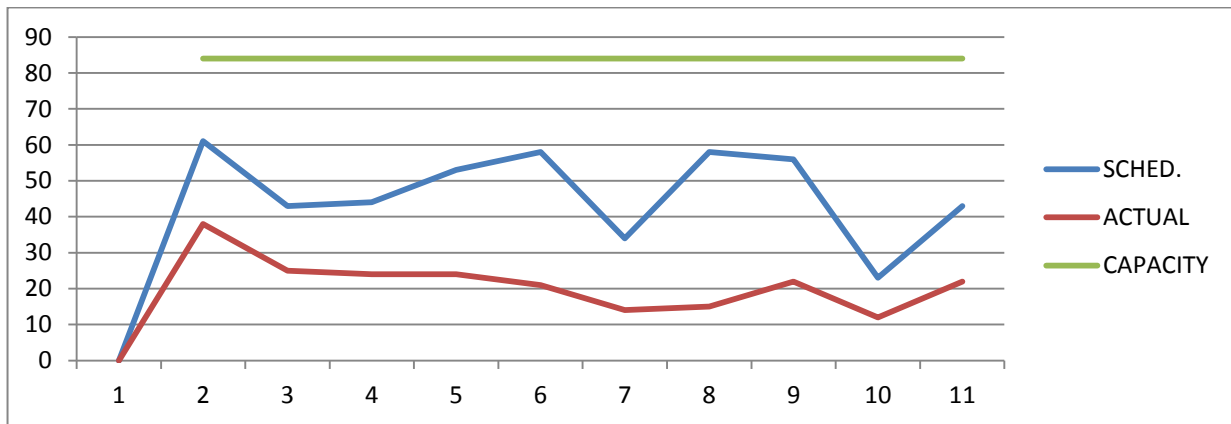
**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
TIER 3
A.M. ROUTES**

BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD	CAPACITY
B-1	B1A	HMS	3	8:04	8:31	0:27	35	6.41	61	38	84
B-2	B2A	HMS	3	8:10	8:29	0:19	35	4.63	43	25	84
B-3	B3A	HMS	3	8:09	8:33	0:24	35	5.96	44	24	84
B-4	B4A	HMS	3	8:03	8:36	0:33	35	7.91	53	24	84
B-5	B5A	HMS	3	8:15	8:36	0:21	35	5.6	58	21	84
B-6	B6A	HMS	3	8:14	8:35	0:21	35	5.48	34	14	84
B-7	B7A	HMS	3	8:13	8:29	0:16	35	4.15	58	15	84
B-8	B8A	HMS	3	8:12	8:35	0:23	35	6.61	56	22	84
B-9	B9A	HMS	3	8:21	8:34	0:13	35	4.66	23	12	84
B-10	B10A	HMS	3	8:12	8:29	0:17	35	5.05	43	22	84

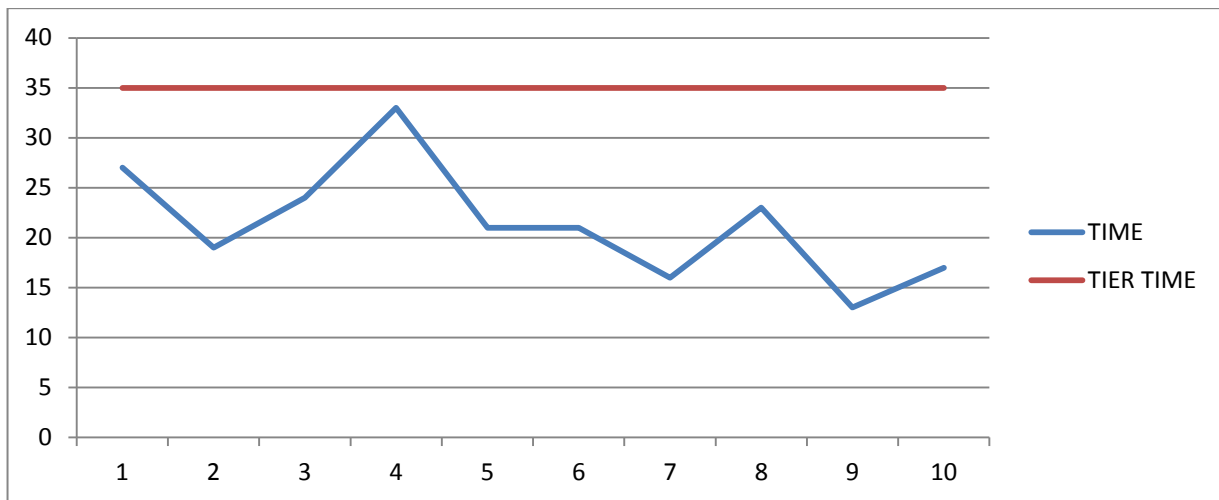
CURRENT METRICS		ELIMINATE B-7 METRICS	
No. Buses	10	No. Buses	9
No. Routes	10	No. Routes	9
Ave. Rts/Bus	1.0	Ave. Rts/Bus	1.0
Ave. Time/Rt	0:21	Ave. Time/Rt	0:23
Ave. Miles/Rt	5.6	Ave. Miles/Rt	6.3
Ave. Sched. Load/Rt	47.3	Ave. Sched. Load/Rt	52.6
Ave. Actual Load/Rt	21.7	Ave. Actual Load/Rt	24.1
Sched. Load/Capacity Ratio	56%	Sched. Load/Capacity Ratio	63%
Actual Load/Capacity Ratio	25.8%	Actual Load/Capacity Ratio	28.7%

NON BUS	256
RIDERS	54%

LOAD-CAPACITY ANALYSIS



ROUTE-TIER TIME ANALYSIS



FINDINGS:

- Tier 2 has a relatively short transportation tier time available for transportation (35 minutes).
- The average route time is approximately 21 minutes, with most routes scheduled to operate well within those tier time limits (35 minutes).
- The average route distance is approximately 5.6 miles
- The average scheduled student load is approximately 76.3 students which represents an average of 91% of the bus capacity.
- The average actual student load is approximately 47 students which represents an average of 26% of the bus capacity.
- While 473 students are eligible to ride, only 217 actually do so. Approximately 256 (54% of eligible riders) do not ride the bus.
- With a reconfiguration of the current routes, it is possible to eliminate 1 bus in the A.M. Tier 3 (RT. B-7A). This would increase the actual load/capacity ratio to approximately 28.7%.



In addition to those school buses contracted, the District owns and operates several Mini Buses. These mini buses are assigned to transport in district students with disabilities, students who may require transportation on other than large buses and students who cannot be accommodated on the regular routes due to time or schedule limitations.

**MINI BUS 1
A.M. ROUTES**

2017 - 2018 (4797)				4/5/2018
Time	Address	Student		Grade
6:40	ADDRESSES REDACTED	NAMES REDACTED		PH KF
6:45				HS12
7:05				HS12
7:04				HS11
7:10				BMS6
7:15				BMS6
6:52				BMS6
7:20				BMS 7
7:25	BHS 7:40 - 2:11			
7:30	BMS 7:50 - 2:05			
7:35				PHPK
7:38				PHPK
7:43				PHPK
7:49				PH 3



2017 - 2018 (4797)			
Time	Address	Student	4/5/2018 Grade
7:55			PH 1
8:08			PH 3
			PH 3
8:14	PRIMROSE 8:15 - 2:40		
8:17			HM5
8:23			HM 5
8:30			HM 5
			HM 4
	HM 8:50 - 3:20		
STUDENTS		21	

**MINI BUS 2
A.M. ROUTES**

2017 - 2018 (7115)			
Time	Address	Student	4/5/2018 Grade
6:40	ADDRESSES REDACTED	NAMES REDACTED	HS 9
6:40			HS 11
6:45			HS 9
6:48			HS 12+
6:58			HS 11
7:03			BMS 6

2017 - 2018 (7115)			4/5/2018
Time	Address	Student	Grade
7:13			HS 12+
7:15			ONLY IF HS 12 PARENT CALLS
7:20			BMS 6
7:25	BHS 7:40 - 2:11		
7:35	BMS 7:50 - 2:05		
7:51			SO 2
7:58			SO 2
8:06			NA 2
8:09			SO KF
8:13	SOWAMS 8:15 - 2:40		
8:20	NAYATT 8:15 - 2:40		
STUDENTS		14	

FINDINGS:

- Mini Bus 1 routinely transports approximately 21 students in the A.M. routes.
- Mini Bus 2 routinely transports approximately 14 students in the A.M. routes.
- In addition, Mini Bus 2 provides mid-day transportation for assigned Math students.
- In addition, Mini Bus 1 provides mid-day transportation to PreK students.
- Typically, in district special education routes of approximately 14 students are considered efficient by current industry standards



**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
ALL TIERS
P.M. ROUTES**

BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD	CAPACITY
B-1	B1P	HS/MS	1	2:10	2:31	0:21	29	4.87	153	48	56
B-2	B2P	HS/MS	1	2:10	2:42	0:32	29	6.74	107	46	56
B-3	B3P	HS/MS	1	2:10	2:40	0:30	29	6	170	43	56
B-4	B4P	HS/MS	1	2:10	2:30	0:20	29	5.28	72	44	56
B-5	B5P	HS/MS	1	2:10	2:28	0:18	29	3.39	171	81	56
B-6	B6P	HS/MS	1	2:10	2:32	0:22	29	4.51	112	43	56
B-7	B7P	HS/MS	1	2:10	2:29	0:19	29	4.42	183	55	56
B-8	B8P	HS/MS	1	2:10	2:36	0:26	29	7.01	75	46	56
B-9	B9P	HS/MS	1	2:10	2:32	0:22	29	5.69	129	69	56
B-10	B10P	HS/MS	1	2:10	2:33	0:23	29	5.25	103	36	56
B-9	9P	St. Lukes	3	3:10	4:10	1:00	60	19.96	33	11	26
B-1	B1P	NAY	2	2:45	3:10	0:25	40	5.48	58	50	84
B-3	B3P	NAY	2	2:45	3:07	0:22	40	4.76	66	24	84
B-6	B6P	NAY	2	2:45	3:13	0:28	40	5.96	70	44	84
B-10	B10P	NAY	2	2:45	3:05	0:20	40	3.57	61	51	84
B-7	B7P	SES	2	2:45	3:04	0:19	40	4.04	86	45	84
B-8	B8P	SES	2	2:45	3:07	0:22	40	4.05	99	58	84
B-2	B2P	PHES	2	2:45	3:11	0:26	40	6.48	59	38	84
B-4	B4P	PHES	2	2:45	3:10	0:25	40	4.99	104	61	84
B-5	B5P	PHES	2	2:45	3:01	0:16	40	3.56	49	30	84
B-9	B9P	PHES	2	2:45	2:54	0:09	40	2:01	37	17	84



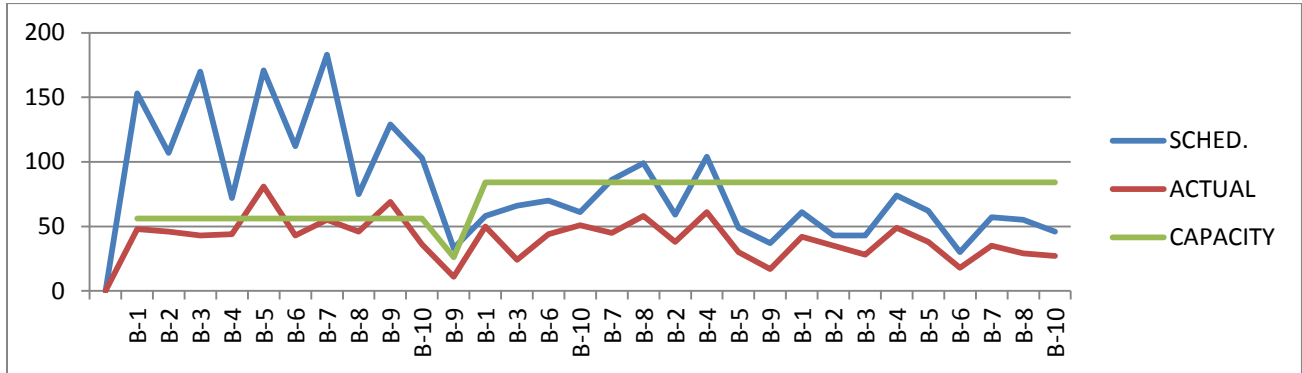
BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD	CAPACITY
B-1	B1P	HMS	3	3:35	4:03	0:28	60	6.73	61	42	84
B-2	B2P	HMS	3	3:35	3:54	0:19	60	4.72	43	35	84
B-3	B3P	HMS	3	3:35	3:59	0:24	60	6.25	43	28	84
B-4	B4P	HMS	3	3:35	4:11	0:36	60	8.83	74	49	84
B-5	B5P	HMS	3	3:35	4:02	0:27	60	6.11	62	38	84
B-6	B6P	HMS	3	3:35	3:55	0:20	60	5.48	30	18	84
B-7	B7P	HMS	3	3:35	3:51	0:16	60	4.77	57	35	84
B-8	B8P	HMS	3	3:35	3:54	0:19	60	5.54	55	29	84
B-10	B10P	HMS	3	3:35	3:50	0:15	60	4.75	46	27	84

METRICS P.M. ROUTES

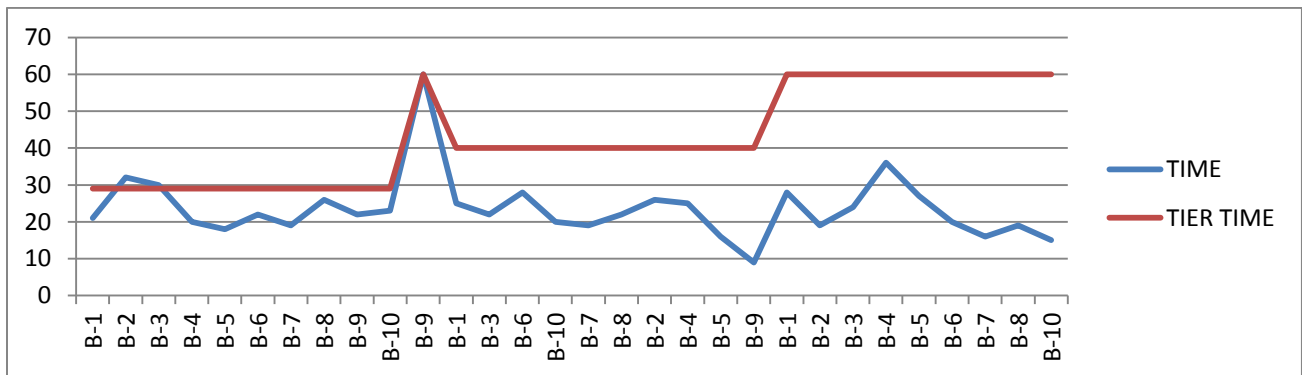
No. Buses	11
No. Routes	30
Ave. Rts/Bus	2.7
Ave. Time/Rt	0:23
Ave. Miles/Rt	5.6
Ave. Sched. Load/Rt	82.3
Ave. Actual Load/Rt	41.4
Sched. Load/Capacity Ratio	113%
Actual Load/Capacity Ratio	56.9%

NON BUS	1227
RIDERS	50%

LOAD CAPACITY ANALYSIS P.M. ROUTES



ROUTE TIER TIME ANALYSIS P.M. ROUTES



FINDINGS:

- The average route time is approximately 23 minutes, with most routes scheduled to operate within those tier time limits.
- The average route distance is approximately 5.6 miles
- The average scheduled student load is approximately 82.3 students which represents an average of 113% of the bus capacity.
- The average actual student load is approximately 41.4 students which represents an average of 56.9% of the bus capacity.
- While 2468 students are eligible to ride, only 1241 actually do so. Approximately 1241 (50% of eligible riders) do not ride the bus.
- **Note:** Approximately 291 more students (13.4%) ride in the afternoon than do in the morning.

Should the District wish to investigate the reasons for this level of parent transportation, they may wish to conduct an online survey of parents (*See Sample -Appendix A*).

COMMENDATION: Recognizing the large number of eligible students who do not ride the bus, transportation management routinely over schedules those buses in order to maximize route efficiencies.

The following represents our analysis of the individual route tiers. This analysis was conducted in order to ascertain whether there were any additional efficiencies to be gained by restructuring the transportation tier times (bell schedules) or by reconfiguring to a two-tier system.

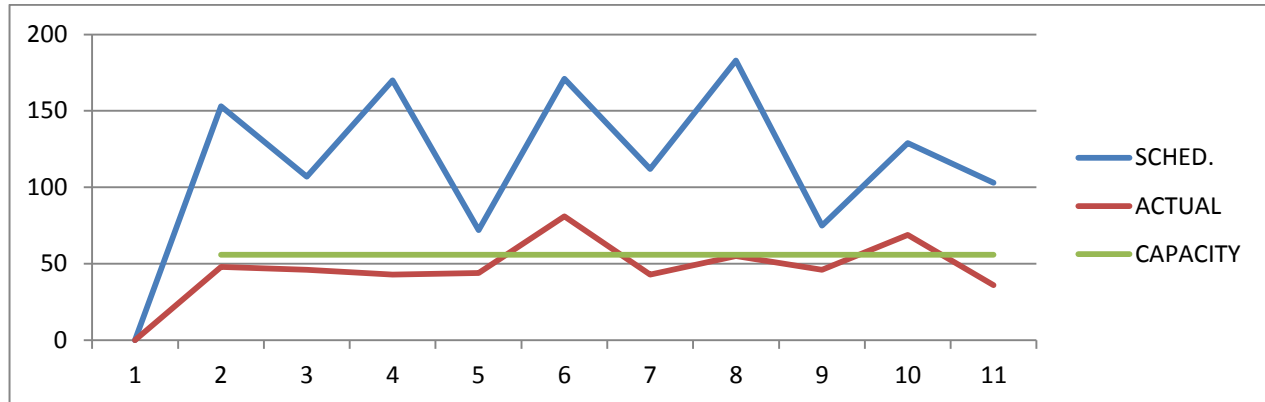
**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
TIER 1
P.M. ROUTES**

BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD	CAPACITY
B-1	B1P	HS/MS	1	2:10	2:31	0:21	29	4.87	153	48	56
B-2	B2P	HS/MS	1	2:10	2:42	0:32	29	6.74	107	46	56
B-3	B3P	HS/MS	1	2:10	2:40	0:30	29	6	170	43	56
B-4	B4P	HS/MS	1	2:10	2:30	0:20	29	5.28	72	44	56
B-5	B5P	HS/MS	1	2:10	2:28	0:18	29	3.39	171	81	56
B-6	B6P	HS/MS	1	2:10	2:32	0:22	29	4.51	112	43	56
B-7	B7P	HS/MS	1	2:10	2:29	0:19	29	4.42	183	55	56
B-8	B8P	HS/MS	1	2:10	2:36	0:26	29	7.01	75	46	56
B-9	B9P	HS/MS	1	2:10	2:32	0:22	29	5.69	129	69	56
B-10	B10P	HS/MS	1	2:10	2:33	0:23	29	5.25	103	36	56

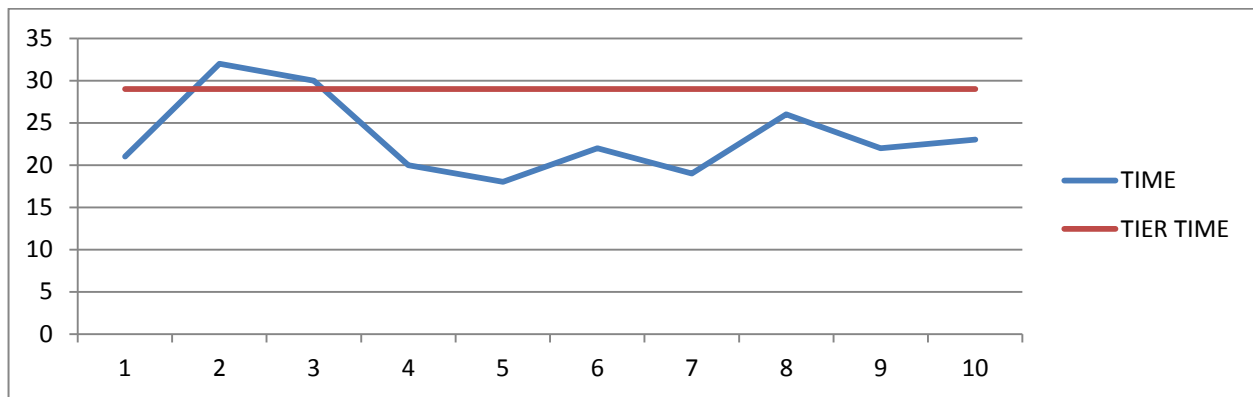
CURRENT METRICS		ELIMINATE B-10 METRICS	
No. Buses	10	No. Buses	9
No. Routes	10	No. Routes	9
Ave. Rts/Bus	1.0	Ave. Rts/Bus	1.0
Ave. Time/Rt	0:23	Ave. Time/Rt	0:25
Ave. Miles/Rt	5.3	Ave. Miles/Rt	5.9
Ave. Sched. Load/Rt	127.5	Ave. Sched. Load/Rt	141.7
Ave. Actual Load/Rt	51.1	Ave. Actual Load/Rt	56.8
Sched. Load/Capacity Ratio	228%	Sched. Load/Capacity Ratio	253%
Actual Load/Capacity Ratio	91.3%	Actual Load/Capacity Ratio	101.4%

NON BUS RIDERS	764
	60%

LOAD-CAPACITY ANALYSIS



ROUTE-TIER TIME ANALYSIS



FINDINGS:

- The average route time is approximately 23 minutes, with all routes scheduled to operate well within those tier time limits (29 minutes).
- The average route distance is approximately 5.3 miles
- The average scheduled student load is approximately 127.5 students which represents an average of 228% of the bus capacity.
- The average actual student load is approximately 51 students which represents an average of 91.3% of the bus capacity.
- While 1275 students are eligible to ride, only 511 actually do so. Approximately 764 (60% of eligible riders) do not ride the bus.
- With a reconfiguration of the current routes, it is **NOT** possible to eliminate a bus in the P.M. Tier 1. This would increase the actual load/capacity ratio to approximately 101.4% of the total bus capacity and would result in overcrowding, increased student discipline issues, students standing or sitting in aisles; all of which constitute unsafe student transportation.



**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
TIER 2
P.M. ROUTES**

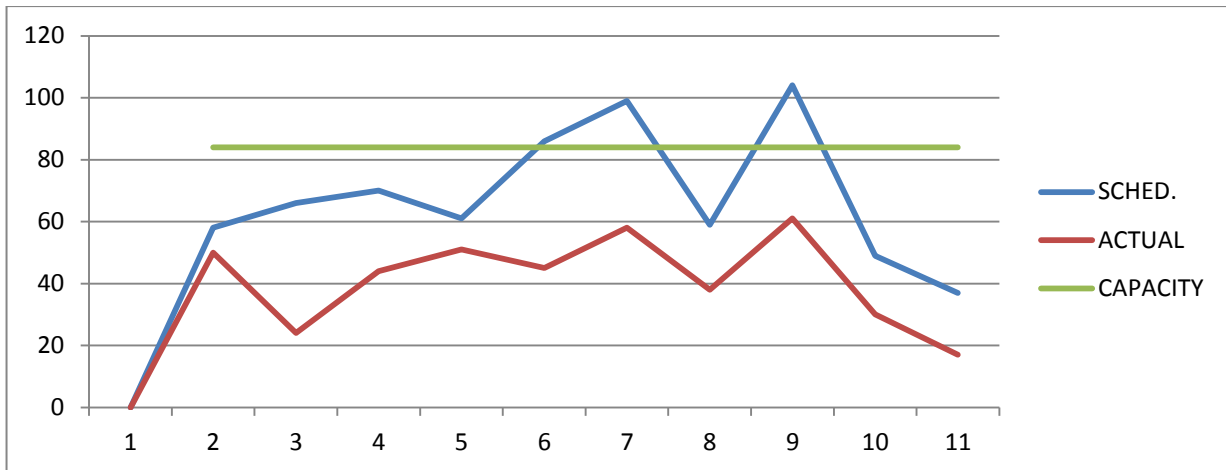
BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD	CAPACITY
B-1	B1P	NAY	2	2:45	3:10	0:25	40	5.48	58	50	84
B-3	B3P	NAY	2	2:45	3:07	0:22	40	4.76	66	24	84
B-6	B6P	NAY	2	2:45	3:13	0:28	40	5.96	70	44	84
B-10	B10P	NAY	2	2:45	3:05	0:20	40	3.57	61	51	84
B-7	B7P	SES	2	2:45	3:04	0:19	40	4.04	86	45	84
B-8	B8P	SES	2	2:45	3:07	0:22	40	4.05	99	58	84
B-2	B2P	PHES	2	2:45	3:11	0:26	40	6.48	59	38	84
B-4	B4P	PHES	2	2:45	3:10	0:25	40	4.99	104	61	84
B-5	B5P	PHES	2	2:45	3:01	0:16	40	3.56	49	30	84
B-9	B9P	PHES	2	2:45	2:54	0:09	40	2:01	37	17	84

CURRENT	
METRICS	
No. Buses	10
No. Routes	10
Ave. Rts/Bus	1.0
Ave. Time/Rt	0:21
Ave. Miles/Rt	4.3
Ave. Sched. Load/Rt	68.9
Ave. Actual Load/Rt	41.8
Sched. Load/Capacity Ratio	82%
Actual Load/Capacity Ratio	49.8%

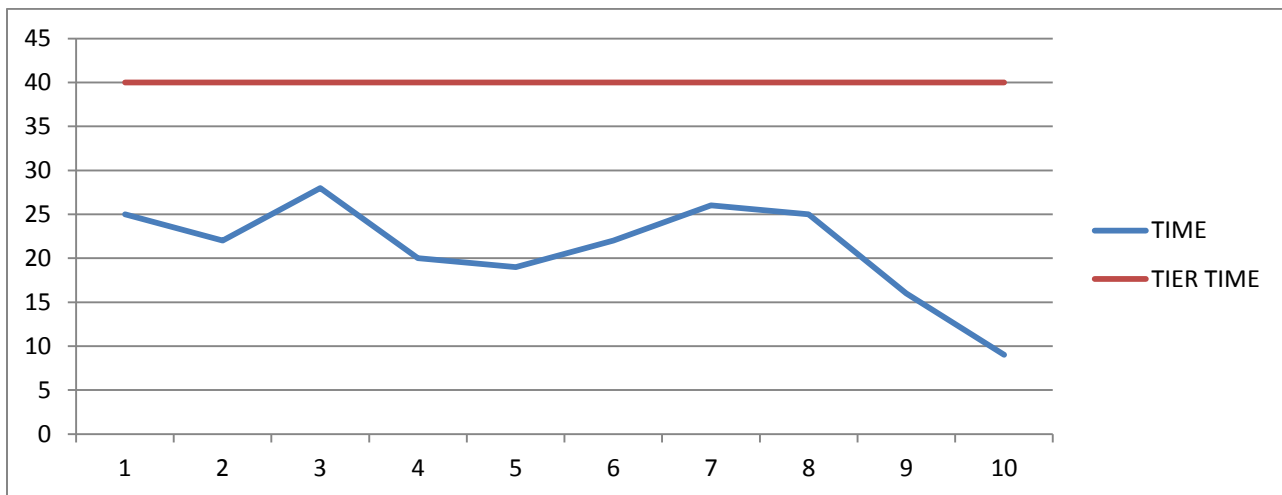
ELIMINATE B-9	
METRICS	
No. Buses	9
No. Routes	9
Ave. Rts/Bus	1.0
Ave. Time/Rt	0:23
Ave. Miles/Rt	4.8
Ave. Sched. Load/Rt	76.6
Ave. Actual Load/Rt	46.4
Sched. Load/Capacity Ratio	91%
Actual Load/Capacity Ratio	55.3%

NON BUS	271
RIDERS	39%

LOAD-CAPACITY ANALYSIS



ROUTE-TIER TIME ANALYSIS



FINDINGS:

- The average route time is approximately 21 minutes, with most routes scheduled to operate well under those tier time limits (40 minutes).
- The average route distance is approximately 4.3 miles
- The average scheduled student load is approximately 68.9 students which represents an average of 82% of the bus capacity.
- The average actual student load is approximately 41.8 students which represents an average of 49.8% of the bus capacity.
- While 689 students are eligible to ride, only 418 actually do so. Approximately 271 (39% of eligible riders) do not ride the bus.
- With a reconfiguration of the current routes, it is possible to eliminate 1 bus in the P.M. Tier 2 (RT. B-9P). This would increase the actual load/capacity ratio to approximately 55.3%.



**REGULAR TRANSPORTATION
REGULAR TRANSPORTATION ROUTE DATA
TIER 3
P.M. ROUTES**

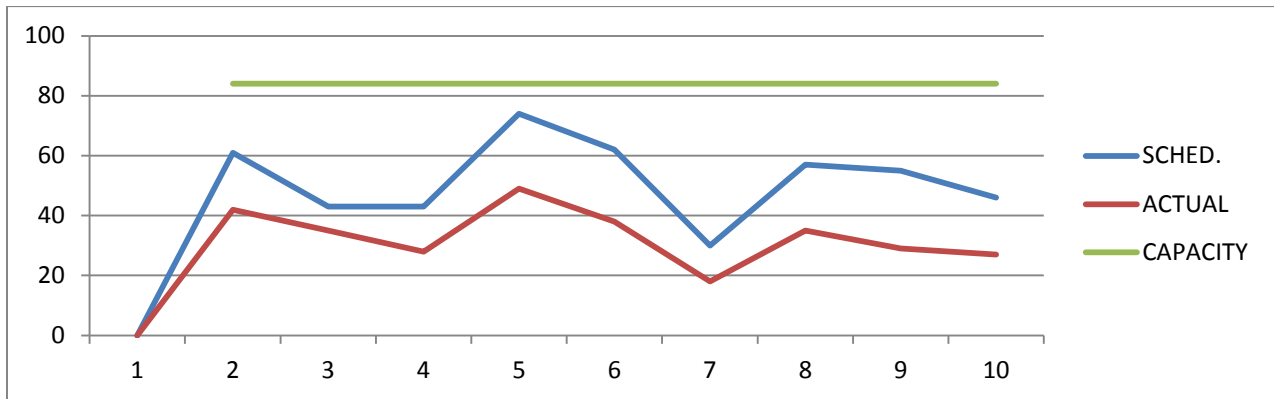
BUS NO.	RT. NO.	DESCRIPTION	TIER	START	END	TIME	TIER TIME	MILES	SCHED. LOAD	ACTUAL LOAD	CAPACITY
B-1	B1P	HMS	3	3:35	4:03	0:28	60	6.73	61	42	84
B-2	B2P	HMS	3	3:35	3:54	0:19	60	4.72	43	35	84
B-3	B3P	HMS	3	3:35	3:59	0:24	60	6.25	43	28	84
B-4	B4P	HMS	3	3:35	4:11	0:36	60	8.83	74	49	84
B-5	B5P	HMS	3	3:35	4:02	0:27	60	6.11	62	38	84
B-6	B6P	HMS	3	3:35	3:55	0:20	60	5.48	30	18	84
B-7	B7P	HMS	3	3:35	3:51	0:16	60	4.77	57	35	84
B-8	B8P	HMS	3	3:35	3:54	0:19	60	5.54	55	29	84
B-10	B10P	HMS	3	3:35	3:50	0:15	60	4.75	46	27	84

CURRENT METRICS	
No. Buses	9
No. Routes	9
Ave. Rts/Bus	1.0
Ave. Time/Rt	0:22
Ave. Miles/Rt	5.9
Ave. Sched. Load/Rt	52.3
Ave. Actual Load/Rt	33.4
Sched. Load/Capacity Ratio	62%
Actual Load/Capacity Ratio	39.8%

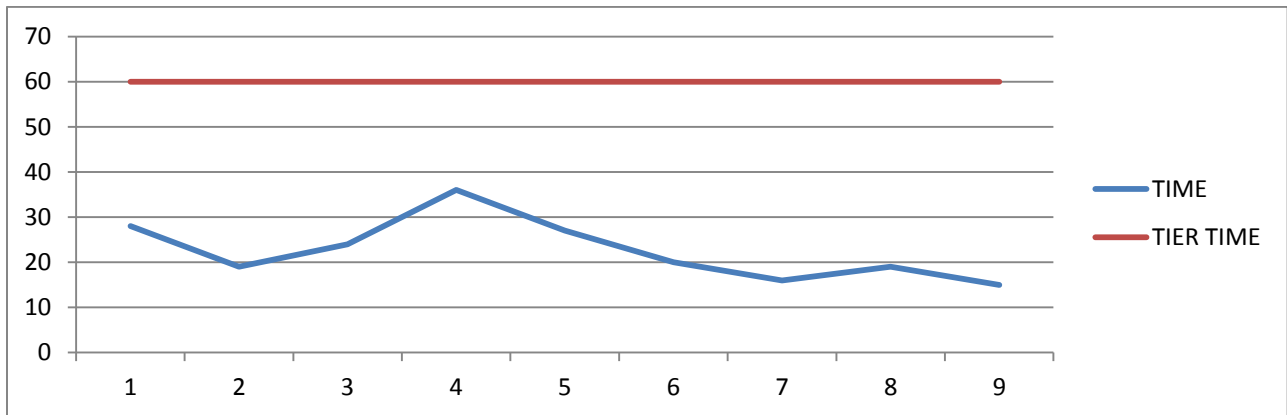
ELIMINATE B-10 METRICS	
No. Buses	8
No. Routes	8
Ave. Rts/Bus	1.0
Ave. Time/Rt	0:25
Ave. Miles/Rt	6.6
Ave. Sched. Load/Rt	58.9
Ave. Actual Load/Rt	37.6
Sched. Load/Capacity Ratio	70%
Actual Load/Capacity Ratio	44.8%

NON BUS	170
RIDERS	36%

LOAD-CAPACITY ANALYSIS



ROUTE-TIER TIME ANALYSIS



FINDINGS:

- The average route time is approximately 22 minutes, with most routes scheduled to operate well under those tier time limits (60 minutes).
- The average route distance is approximately 5.9 miles
- The average scheduled student load is approximately 52.3 students which represents an average of 62% of the bus capacity.
- The average actual student load is approximately 33.4 students which represents an average of 39.8% of the bus capacity.
- While 471 students are eligible to ride, only 301 actually do so. Approximately 170 (36% of eligible riders) do not ride the bus.
- With a reconfiguration of the current routes, it is possible to eliminate 1 bus in the P.M. Tier 2 (RT. B-6P). This would increase the actual load/capacity ratio to approximately 44.8%.



**MINI BUS 1
P.M. ROUTES**

2017 - 2018 (4797)			4/5/2018
Time	Address	Student	
	ADDRESSES REDACTED		
2:05	BHS 7:40 - 2:11	NAMES REDACTED	
2:10			HS11
2:18	BMS 7:50 - 2:05		
2:26			BMS 6
2:31			BMS 6
2:34			BMS 6
2:35			HS 12
2:40			HS12
2:40			HS 12
2:40			HS 11
2:44	PRIMROSE 8:15 - 2:40		
2:54	NAYATT 8:15 - 2:40		
3:01	BMS		
3:09			MS 7
3:11			PM KF
3:21			PH 2
3:24			PH 3

	PH 3
	PH 1
2:28	PH 3
3:31	BMS 6
3:41	BMS 7
3:46	NA 2
3:51	PHPK
3:55	NA 3
4:10	BMS 6
	PHPK
STUDENTS	25

**MINI BUS 2
P.M. ROUTES**

2017 - 2018 (7115)		4/5/2018
Time	Address	Student
	ADDRESSES REDACTED	
2:05	BHS 7:40 - 2:11	NAMES REDACTED
2:10	BMS 7:50 - 2:05	
2:20		BMS 6
2:27		HS 12+
2:30		BMS 6
2:32		HS 11

2:42	SOWAMS	8:15 - 2:40	
2:47			HS 9
2:47			HS 9
2:50			HS 11
2:52			HS 12+
			BHS11
2:58			SO KF
3:05			SO 2
3:20			SO 2
3:22			
3:30			HS
3:40	HM	8:50 - 3:20	
3:52			HM 4
3:57			HM 5
4:05			HM 5
4:15			HM5
STUDENTS		17	



MINI BUS 1 MID DAY ROUTES

2017 - 2018 (4797)			
Midday PK			
	ADDRESSES REDACTED		
10:55		NAMES REDACTED	PHPK
10:59			PHPK
11:05			PHPK
11:12			PHPK
11:30			PHPK
11:45			PHPK
11:55	PRIMROSE		
12:05			
12:20	BHS		
Pat Beauchemin's Schedule 2017-2018			
Monday	Hampden Meadows	All day, no transportation needed	
Tuesday	Primrose Hill	Transport to Nayatt @ 10:45 AM	
Wednesday	Sowams School	Transport needed to Office @ noon (thereabouts)	
Thursday	Office	Transport to Nayatt @ 11:00 AM	
Friday	Primrose Hill	Transport needed to Office @ Noon	
	STUDENTS	9	

**MINI BUS 2
MID DAY ROUTES**

2017 - 2018 (7115)		4/5/2018
Math Students		
12:00	BMS Days 2 & 4	Pick up Math Students
	BHS	Drop off Math Students
1:10	BHS Days 2 & 4	Pick up Math Students
1:15	BMS Days 2 & 4	Drop off Math Students
1:00	BMS Days 1,3,5 & 6	Pick up Math Students
1:05	BHS	Drop off Math Students
2:05	BHS 7:40 - 2:11	Will Take reg. bus OR be dropped back off at Middle School

FINDINGS:

- Mini Bus 1 routinely transports approximately 25 students in the P.M. routes.
- Mini Bus 2 routinely transports approximately 17 students in the P.M. routes.
- In addition, Mini Bus 2 provides mid-day transportation for assigned Math students.
- In addition, Mini Bus 1 provides mid-day transportation to PreK students.
- Typically, in district special education routes of approximately 14 students are considered efficient by current industry standards.

ALTERNATIVE 1

Retain Three Tier and Revise High/Middle School Start Time to 8:00 a.m.

In addition to the review of the current transportation operations, we reviewed the potential impact of revising the current High School and Middle School times to 8:00 a.m. The following represents the resultant school bell schedules and transportation tier times to revise the HS/MS start and end times, while retaining a three-tier transportation system:

**CHANGE HIGH SCHOOL START TO 8:00
THREE TIER**

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Barrington High School 220 Lincoln Ave, Barrington, RI 02806	9-12	8:00	2:41	60	34
Barrington Middle School 261 Middle Hwy, Barrington, RI 02806	6-8	8:10	2:31	60	34
Sowams School 364 Sowams Rd, Barrington, RI 02806	K-3	8:45	3:15	35	40
Nayatt School 400 Nayatt Rd, Barrington, RI 02806	K-3	8:45	3:15	35	40
Primrose Hill 60 Middle Hwy, Barrington, RI 02806	PK - 3	8:45 - 3:10 AM PreK 8:45-11:15 PM PreK 12:30-3:10	3:15	35	40
Hampden Meadows 297 New Meadow Rd, Barrington, RI 02806	4-5	9:20	3:50	35	60

FINDINGS:

- The change in the high and middle school start time to 8:00 a.m. had no appreciable difference in the number of or configuration of routes necessary.
- However, in order to accommodate the three-tier system with a later tier 1 start time resulted in a relatively late start and end time for Hampden Meadows School.



ALTERNATIVE 1A

Revise to Two Tier and Revise High/Middle School Start Time to 8:00 a.m.

In addition to the review of the current transportation operations, we reviewed the potential impact of revising the current High School and Middle School times to 8:00 a.m. and investigating the potential for a two-tier transportation system. The following represents the resultant school bell schedules and transportation tier times to revise the HS/MS start and end times and implementing a two-tier transportation system:

HIGH/MIDDLE SCHOOL START - 8:00 TWO TIER SYSTEM

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Barrington High School 220 Lincoln Ave, Barrington, RI 02806	9-12	8:00	2:41	60	50
Barrington Middle School 261 Middle Hwy, Barrington, RI 02806	6-8	8:10	2:31	60	50
Sowams School 364 Sowams Rd, Barrington, RI 02806	K-3	9:00	3:30	50	60
Nayatt School 400 Nayatt Rd, Barrington, RI 02806	K-3	9:00	3:30	50	60
Primrose Hill 60 Middle Hwy, Barrington, RI 02806	PK - 3	9:00 - 3:15 AM PreK 9:00--11:30 PM PreK 12:30-3:15	3:15	50	60
Hampden Meadows 297 New Meadow Rd, Barrington, RI 02806	4-5	9:00	3:15	50	60

SECOND TIER				
A.M.	2 TIER		P.M.	2 TIER
SCHED	687		SCHED	689
ACTUAL	350		ACTUAL	418
CAPACITY	756		CAPACITY	756
SCHED	473		SCHED	471
ACTUAL	217		ACTUAL	301
TOTAL	567		TOTAL	719
CAPACITY	756		CAPACITY	672
RATIO	75%		RATIO	107%

A two-tier system with the High/Middle schools starting at 8:00 a.m. would result in a start time of approximately 9:00 a.m. for all of the elementary schools. However Tier 2 would be overcrowded in the P.M. only.

FINDINGS:

- While maintaining the High and Middle School on Tier 1 and all of the Elementary Schools on Tier 2, it would be possible to eliminate 1 bus for the A.M. routes ONLY.
- However, due to the increased ridership in the afternoon, it is NOT possible to eliminate a bus for the P.M. routes. The second tier in the afternoon would already be overscheduled at 107% of ridership capacity (719 Actual riders for 672 seats); thereby requiring an additional large bus and another mini bus, plus one monitor.
- The resultant combination, without additional buses (2) would be overloaded buses in the afternoon ONLY, increased student discipline issues, students sitting in the aisles or standing; all of which constitute unsafe school transportation.

ALTERNATIVE 2

Retain Three Tier and Revise High/Middle School Start Time to 8:30 a.m.

In addition to the review of the current transportation operations, we reviewed the potential impact of revising the current High School and Middle School times to 8:30 a.m. and earlier start times for the Elementary Schools, and a later start time for Hampden Meadows. The following represents the resultant school bell schedules and transportation tier times to revise the HS/MS start and end times, while retaining a three tier transportation system:



THREE TIER
CHANGE HIGH SCHOOL START TO 8:30

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Sowams School 364 Sowams Rd, Barrington, RI 02806	K-3	7:45	2:15	45	45
Nayatt School 400 Nayatt Rd, Barrington, RI 02806	K-3	7:45	2:15	45	45
Primrose Hill 60 Middle Hwy, Barrington, RI 02806	PK - 3	7:45 - 2:15 AM PreK 7:45-10:15 PM PreK 11:30-2:15	2:15	45	45
Barrington High School 220 Lincoln Ave, Barrington, RI 02806	9-12	8:30	3:00	45	40
Barrington Middle School 261 Middle Hwy, Barrington, RI 02806	6-8	8:40	2:54	35	40
Hampden Meadows 297 New Meadow Rd, Barrington, RI 02806	4-5	9:20	3:50	40	60

SECOND TIER			
A.M.	2 TIER	P.M.	2 TIER
SCHED	687	SCHED	689
ACTUAL	350	ACTUAL	418
CAPACITY	756	CAPACITY	756
SCHED	473	SCHED	471
ACTUAL	217	ACTUAL	301
TOTAL	567	TOTAL	719
CAPACITY	756	CAPACITY	672
RATIO	75%	RATIO	107%



A three tier system with the Elementary schools starting at 7:45, the High/Middle schools starting at 8:30 a.m. would result in a relatively late start time of approximately 9:20 for Hampden Meadows and Tier 2 in the P.M. would be overcrowded.

FINDINGS:

- The change in the high and middle school start time to 8:30 a.m. had no appreciable difference in the number of or configuration of routes necessary.
- Actual riders = 950 in the a.m. and 1241 in the p.m. for 2182 seats
- However, in order to accommodate the three-tier system with a later tier 1 start time resulted in a relatively late start and end time for Hampden Meadows School.

ALTERNATIVE 3

Revise to Two Tier and Revise High/Middle School Start Time to 8:30 a.m.

HIGH/MIDDLE SCHOOL START - 8:30 TWO TIER SYSTEM

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Sowams School 364 Sowams Rd, Barrington, RI 02806	K-3	7:45	2:15	45	45
Nayatt School 400 Nayatt Rd, Barrington, RI 02806	K-3	7:45		2:15	45 45
Primrose Hill 60 Middle Hwy, Barrington, RI 02806	PK - 3	7:45 - 2:15 AM PreK 7:45--10:15 PM PreK 11:45-2:15	2:15	45	45
Hampden Meadows 297 New Meadow Rd, Barrington, RI 02806	4-5	7:45	2:15	45	45
Barrington High School 220 Lincoln Ave, Barrington, RI 02806	9-12	8:30	3:00	45	60
Barrington Middle School 261 Middle Hwy, Barrington, RI 02806	6-8	8:40	2:54	45	60

SECOND TIER				
A.M.	2 TIER		P.M.	2 TIER
SCHED	687		SCHED	689
ACTUAL	350		ACTUAL	418
CAPACITY	756		CAPACITY	756
SCHED	473		SCHED	471
ACTUAL	217		ACTUAL	301
TOTAL	567		TOTAL	719
CAPACITY	756		CAPACITY	672
RATIO	75%		RATIO	107%

A two tier system with the High/Middle schools starting at 8:30 a.m. would result in a start time of approximately 7:45 a.m. for all of the elementary schools. However, Tier 2 in the P.M. would be overcrowded.

FINDINGS:

- While maintaining the Elementary Schools on Tier 1 and all of the High and Middle School on Tier 2, it would be possible to eliminate 1 bus for the A.M. routes ONLY.
- However, due to the increased ridership in the afternoon, it is NOT possible to eliminate a bus for the P.M. routes. The second tier in the afternoon would already be overscheduled at 107% of ridership capacity (719 Actual riders for 672 seats); thereby requiring an additional large bus and another mini bus, plus one monitor..
- The resultant combination, without additional buses (2) would be overloaded buses in the afternoon ONLY, increased student discipline issues, students sitting in the aisles or standing; all of which constitute unsafe school transportation.

ISSUE: A later start time for the High School and Middle School (8:00 or 8:30 a.m.) would result in a later end time for both. This would create issues with the current Athletic schedules unless the surrounding schools also chose to adopt a similar schedule.

The alternative would be to back up the start time of the Tier 1 schools by approximately 15 minutes. This would necessitate a revision of the current policy and allow students to be picked up no earlier than 6:45am rather than 7:00am. Without the additional time, it may require up to 4 additional buses in the a.m.

CAVEAT: However, should the School Board and administration choose to revise the High and Middle School bell schedules for educational purposes, the result would be to add 1 large bus and 1 mini bus, plus monitors for both the morning and the afternoon routes. Under the current contract, the District pays for the full cost of a bus regardless of the number of transportation tiers scheduled. At the current contract costs, the resultant increase in cost for the 2 buses plus monitors would be approximately \$ 146,138.

CONTRACT COST ADDITIONAL BUSES			
RNT		DAILY	ANNUAL
84 PAX	1	\$ 323.50	\$ 58,230.00
SNT	1	\$ 323.50	\$ 58,230.00
MONITORS			
	2	\$ 18.32	\$ 29,678.40
TOTAL:			\$ 146,138.40

REDISTRICTING

During our initial meeting (prior to submitting the proposal) District management indicated that:

- There were no plans to either close an existing or open an additional school
- There were no plans to consolidate the three elementary schools.
- There were no plans to reconfigure the 4-5 grades and relocate them to an elementary school.
- The current new Middle School will not accommodate either the 4th or 5th grade.
- There were no plans at present to redistrict the elementary schools in order to balance school enrollments or for other educational purposes.
- There is discussion however as to revising the overall master schools starting and ending times.

The following describes the current conditions of the District schools as they relate to possible redistricting:

SCHOOL	GRADES	DATE CONSTRUCTED	ORIGINAL CAPACITY	RIDE MODEL CAPACITY	CURRENT ENROLLMENT	% CAPACITY
Barrington High School	9-12	1950	1200	888	1028	86%
Barrington Middle School*	6-8	1954	950	783	841	89%



New Middle School	6--8	2019	900	900	841	93.%
Sowams Elementary School	K-3	1962	350	182	249	71%
Nayatt Elementary School	K-3	1954	475	189	342	72%
Primrose Hill Elementary School	PK – 3	1954	475	200	334	70%
Hampden Meadows Elementary School	4-5	1956		560	274	527 94%

SCHOOL	NUMBER OF CLASSROOMS	AVE. CLASS SIZE	CONDITION INDEX	AVAILABLE CLASSROOMS	CLASSROOMS NEEDED
Barrington High School	48	18	8.64%	0	0
Barrington Middle School*	45	24	54.55%	0	0
Sowams Elementary School	13	20.7	26.25%	0	0
Nayatt Elementary School	17	20.6	72.71%	0	0
Primrose Hill Elementary School	17	23.4	46.15%	0	0
Hampden Meadows Elementary School	22	23.7	29.18%	0	0

*A new Barrington Middle School is under construction and is scheduled to open for September 2019

FINDING: Based on the preceding data, it does not appear that there is an immediate need for redistricting of the District schools.

Given that there is no apparent need for or plan for redistricting the District schools, there is no subsequent effect on school transportation services.

REDISTRICTING ALTERNATIVES
(Reviewed but NOT recommended)

ALTERNATIVE 5
REDISTRICTING GRADES 4 AND 5- CLOSING HAMPDEN MEADOWS SCHOOL

Comparing the current HMS enrollment (522), to the original construction maximum enrollment of the elementary schools indicates the possibility of increasing the current enrollment at the following schools:

SCHOOL	ORIGINAL CAPACITY	CURRENT ENROLLMENT	POSSIBLE ADD'TL ENROLL.
Barrington High School	1200	1028	172
Barrington Middle School (New)	900	841	59
Sowams Elementary School	350	249	101
Nayatt Elementary School	475	342	133
Primrose Hill Elementary School	475	334	141
Hampden Meadows Elementary School	560	522	38

The current Hampden Meadows 4th-5th grade distribution is approximately:

	HMS	%
4th	251	0.48
5th	271	0.52
TOTAL	522	

Alternatives which would not require additional transportation were reviewed but found to NOT be educationally feasible. Among these alternatives were:

1. Redistricting the 4th and 5th grades and closing the Hampden Meadows School.
 - The 4th grade (251) would be distributed among the 3 elementary schools
 - The 5th grade (271) would be transferred to the Middle School
 - Since the Middle School could only accommodate 59 additional students, this would result in overcrowding at the Middle School by approximately 212 students and increased class sizes throughout the current grade structure.
 - Collectively, the three elementary schools could accommodate an additional 375 students. However, this would result in significantly increased class sizes throughout the current grade structure.

- Revise transportation to a 2 Tier system with Tier 1 all of the elementary schools and Tier 2 the High/Middle Schools.

The resulting impact on transportation would be minimal for all schools.

CURRENT HMS ACTUAL TRANSPORTATION

	4TH GR.	5TH GR.
A.M.	217	104
P.M.	301	145

Of the 217 a.m. HMS students actually riding, 104 are 4th grade and 113 are 5th graders. Of the 301 p.m. HMS actual riders, 145 are 4th grade and 156 are 5th graders.

A.M. REVISED ELEMENTARY ROUTES

	ELEM.	HMS	TOTAL
ELEM. SCHED.	687	473	1160
ELEM. ACTUAL	350	104	454
CAPACITY			840
SCHED.LOAD/CAPACITY RATIO			138%
ACTUAL LOAD/CAPACITY RATIO			54.0%
ADDITIONAL ROUTE TIME		14-16 Min.	37 Min.



P.M. ELEMENTARY ROUTES

REVISED TIER 1 P.M.

	ELEM.	HMS	TOTAL
ELEM. SCHED.	689	471	1160
ELEM. ACTUAL	418	145	563
CAPACITY			756
SCHED.LOAD/CAPACITY RATIO			153%
ACTUAL LOAD/CAPACITY RATIO			74.5%
ADDITIONAL ROUTE TIME		18-20 Min.	41 Min.

Redistricting the 4th and 5th grades to the elementary schools and closing Hampden Meadows could be done without increasing the number of buses required. However the added scheduled and actual students across the elementary routes would increase route times to approximately 41 minutes when dead head time and student unloading is factored in. Any significant change in the number of actual riders in the future could result in additional buses being required.

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Sowams School	K-4	7:30	2:00	45	45
Nayatt School	K-4	7:30	2:00	45	45

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Primrose Hill	PK - 4	7:30 - 2:00 AM PreK	2:00	45	45
		7:30- 10:00 PM PreK			
Barrington High School	9-12	11:15- 2:00 8:30	3:00	60	60
Barrington Middle School	5-8	8:40	3:10	60	60

- The 3 elementary schools A.M. transportation would increase by 104 students and by 145 students in the P.M. There is currently sufficient capacity to accommodate this increase.
- The elementary school start times would be at 7: 30 a.m. and the High/Middle School at 8:30 a.m. without the need for any additional school buses.
- The elementary school end times would be 2:00 p.m. and the High/Middle Schools at 3:00 p.m.
- The current policy with regard to no student being transported before 7:00 a.m. would have to be revised to allow elementary students to be picked up no earlier than 6:45 a.m.
- However, the Middle School with only 59 possible additional seats could NOT accommodate the 5th grade (268) without a building addition to accommodate the 212 additional students.

CAUTION: While based upon current actual riders, transportation can currently accommodate the added 4th grade to the elementary schools; any significant increase in actual elementary ridership will result in the overcrowding of buses and could require additional buses in the future.

Therefore, while feasible for transportation purposes, this alternative does not appear to be either educationally or financially feasible.

ALTERNATIVE 6 OPERATING HAMPDEN MEADOWS ON A SPLIT SCHEDULE

1. Transport the HMS 4th grade on the Tier 1 schedule with all other elementary school students.
2. Transport the HMS 5th grade on the Tier 2 schedule with all other High/Middle School students.



CURRENT HMS ACTUAL TRANSPORTATION

		4TH GR.	5TH GR.
A.M.	217	104	113
P.M.	301	145	156

Of the 217 a.m. HMS students actually riding, 104 are 4th grade and 113 are 5th graders. Of the 301 p.m. HMS actual riders, 145 are 4th grade and 156 are 5th graders.

TWO TIER CHANGE HIGH SCHOOL START TO 8:30 SPLIT HMS 4/5TH GRADE SCHEDULES

SCHOOL	GRADES	START	END	A.M. TIER TIME	P.M. TIER TIME
Sowams School	K-3	7:30	2:00	45	45
Nayatt School	K-3	7:30	2:00	45	45
Primrose Hill	PK - 3	7:30 - 2:00 AM PreK 10:00 PM PreK 11:15-2:00	2:00	45	45
Barrington High School	9-12	8:30	3:00	45	60
Barrington Middle School	6-8	8:40	3:10	45	60
Hampden Meadows	4	7:40	2:10	45	45
	5	8:45	3:15	45	60



A.M. ELEMENTARY ROUTES

REVISED TIER 1

A.M.

Adding 4th grade to Tier 1 Elementary schedule.

	ELEM.	HMS 4TH GR.	TOTAL
ELEM. SCHED.	687	227	914
ELEM. ACTUAL	350	104	454
CAPACITY			840
SCHED.LOAD/CAPACITY RATIO			109%
ACTUAL LOAD/CAPACITY RATIO			54.0%
ADDITIONAL ROUTE TIME		14-16 Min.	37 Min.

P.M. ELEMENTARY ROUTES

REVISED

TIER 1

P.M.

	ELEM.	HMS	TOTAL
ELEM. SCHED.	689	157	846
ELEM. ACTUAL	418	145	563
CAPACITY			756
SCHED.LOAD/CAPACITY RATIO			112%
ACTUAL LOAD/CAPACITY RATIO			74.5%
ADDITIONAL ROUTE TIME		18-20 Min.	41 Min.

The current A.M. HS/MS Tier 1 routes have sufficient capacity to accommodate the added number (104) of HMS 4th graders in the A.M. and the added number (145) of 4th graders in the P.M. However the added scheduled and actual students across the elementary routes would increase route times to approximately 41 minutes when dead head time and student unloading is factored in. Any significant change in the number of actual riders in the future could result in additional buses being required.

CAUTION: While based upon current actual riders, transportation Tier 1 elementary routes can currently accommodate the added 4th grade for Hampden Meadows; any significant increase in actual elementary or Hampden Meadows ridership will result in the overcrowding of buses and could require additional buses in the future.

**TIER 2
A.M. ROUTES
CURRENT HS/MS ACTUAL TRANSPORTATION
Adding 5th grade to Tier 2**

	HS/MS	HMS 5TH	TOTAL	CAPACITY
A.M.	484	113	597	563
P.M.	511	156	667	560

Adding the 5th grade to Tier 2 along with the current actual High/Middle school riders would result in overcrowding in the A.M. routes.

**REVISED TIER 2
A.M. ROUTE METRICS**

	ELEM.	HMS 5TH GR.	TOTAL
HS/MS SCHED.	1273	227	1500
HS/MS. ACTUAL	484	113	597
CAPACITY			560
SCHED.LOAD/CAPACITY RATIO			268%
ACTUAL LOAD/CAPACITY RATIO			106.6%
ADDITIONAL ROUTE TIME		14-16 Min.	37 Min.

**REVISED TIER 2
P.M. ROUTES**

	ELEM.	HMS 5TH GR.	TOTAL
HS/MS SCHED.	1275	246	1521
HS/MS. ACTUAL	511	156	667
CAPACITY			560
SCHED.LOAD/CAPACITY RATIO			272%
ACTUAL LOAD/CAPACITY RATIO			119.1%
ADDITIONAL ROUTE TIME		14-16 Min.	37 Min.

- The current P.M. HS/MS operates at approximately 91.3% of seating capacity.
- The current A.M. HS/MS Tier 2 routes do NOT have sufficient capacity to accommodate the added 113 HMS 5th graders, the P.M. routes do NOT have sufficient capacity to accommodate the added number (156) of HMS 4th graders in the P.M.
- The difference is an overload of approximately 107 students, which would represent the need for an additional 2 buses in the P.M. Tier 2 only.

CAUTION: While based upon current actual riders, transportation the A.M. Tier 1 elementary routes can currently accommodate the added 4th grade for Hampden Meadows; any significant increase in actual elementary or Hampden Meadows ridership will result in the overcrowding of buses and could require additional buses in the future.

Therefore, while feasible for transportation purposes in the A.M. only, this alternative is NOT feasible for the P.M. routes without adding two additional buses. In addition splitting the 4th and 5th grade schedules at Hampden Meadows would not be educationally practical and would result in a number of unforeseen consequences, i.e. collective bargaining issues, school lunch issues, master schedule efficiency, and therefore does not appear to be either educationally or financially feasible.

INSURANCE

FINDING: It does not appear that the District requires specific automobile liability coverage for Under Insured and/or Uninsured motorists.

This is important as over the past decade there are more drivers who are either minimally insured or are uninsured. In the event of a school bus accident, it is incumbent upon management to protect the financial interests of both the District and their municipality.

RECOMMENDATION: District management may wish to review the Contractors automobile liability insurance policy and should immediately request that the Contractor add insurance coverage for Under Insured and Uninsured Motorists and that the Excess Liability coverage extends to both of those lines in the event of excess damages. In addition, District management should require that both the District and the municipality be added as additional insureds under their general and vehicle liability insurance policy. This would provide protection to both the District and the municipality in the event of an accident and resulting financial damages.

SUMMARY

FINDING: Based upon our review of school transportation contracts for Districts of similar size and demographics, it is our opinion that the current contractual rate (\$323.50) is cost effective. Current typical costs for new contracts are approximately \$367 per bus per day.

In addition to contracting, the District owns and operates 2 mini buses, which are scheduled for students who do not easily fit existing routes, workplace transportation, parent transportation, student emergency situations, etc. Self-operation for relatively small numbers of students is considered more cost effective than contracting.

Generally, the morning routes determine both the number and configuration of vehicles required. Typically, a significant number of students routinely remain after school for athletics and/or other school activities.

However, contrary to typical school transportation operations, Barrington has significantly more students (291) who ride their assigned school buses in the afternoon than in the morning. In addition, there appears to be an extraordinarily high number of eligible riders who do not ride their assigned school buses either in the morning (61%) or the afternoon (50%). Therefore, it is the P.M. routes which will determine the overall number and configuration of buses and transportation efficiency.

School transportation efficiency is generally determined by the following factors:

- Manual vs. computerized routing and scheduling
- The person who does the routing and scheduling determines the number of buses required.
- Student Riders: Scheduled vs. Actual Riders (Student Loading)
- Time available between school starting and ending times (Tiers)
- Population density, i.e. number of students per mile of bus travel
- Highway / road infrastructure and traffic patterns

- A.M. routes generally drive the number of buses required, as more students ride in the morning than in the afternoon due to after school activities.

CAUTION: Transportation management can sometimes “over consolidate” routes in order to eliminate a bus, only to have to reinstate it during the year or the following year due to required changes or routes which are too long. As a result an efficient transportation system requires some “excess” capacity in order to manage the route and schedule changes from year to year in order to not have to add a bus and driver during the year and after the budget has been set. This is especially true for specialized transportation, which changes almost daily based upon the transportation requirements of the students.

FINDING: The Elementary Schools (A.M.) and the Middle and High Schools (P.M.) have a relatively short tier time available for school transportation. Ideally, a minimum of 50-60 minutes provides the amount of time necessary to maximize transportation efficiencies. Furthermore, the District past practice has been that routes should be no longer than 60 minutes and that no student is picked up prior to 7:00 a.m. When traffic issues and distance are included in the routes, the actual tier time available may be significantly less than the school bell schedules would indicate. This policy impacts the available tier time for any Tier 1 routes, but especially that of the current high/middle school routes.

Given the relatively short tier time available for school transportation, combined with typical drive time traffic congestion, transportation efficiency is determined by other than student loading. The high number of students transported by other than school buses also exacerbates the school traffic congestion problems associated with typical school drive times.

CAVEAT: However, we do not recommend changing school bell schedules for school transportation purposes. School schedules should be set by the District in accordance with their educational requirements.

FINDING: Approximately 44 %-50 % of those students eligible to ride are NOT being transported by school bus. There appears to be a relatively large number of students who are being dropped off by parents, driving, car pooled with other students, etc.

In the A.M., while 2465 students are eligible to ride, only 950 actually do so. Approximately 1515 (61% of eligible riders) do not ride the bus.

In the P.M., while 2468 students are eligible to ride, only 1241 actually do so. Approximately 1241 (50% of eligible riders) do not ride the bus.

Should the District wish to investigate the reasons for this level of parent transportation, they may wish to conduct an online survey of parents (*See Sample -Appendix A*).



Most of the in district routes are scheduled and operate within the tier time available. The average route time is approximately 23-24 minutes. This would indicate that many of the routes have time to pick up/drop off more students than are currently scheduled. In addition, most routes operate at significantly less than vehicle capacity.

In the A.M., with a reconfiguration of the current routes, it is possible to eliminate 1 bus in the A.M. This would increase the actual load/capacity ratio to approximately 28.7%.

However, in the A.M., with a reconfiguration of the current routes, it is **NOT** possible to eliminate a bus in the P.M. Tier 1. This would increase the actual load/capacity ratio to approximately 101.4% of the total bus capacity and would result in overcrowding, increased student discipline issues, students standing or sitting in aisles; all of which constitute unsafe student transportation.

Revising the High/Middle School starting times to 8:00 a.m. or 8:30 a.m. had no appreciable effect on either the configuration or number of buses required in a three tier system. However, the later the tier 1 school start times, the later the third tier school would start; a time which may not be educationally acceptable.

Revising the High/Middle School starting times to 8:00 a.m. or 8:30 a.m. had no appreciable effect on either the configuration or number of buses required in a two tier system in the morning. But given the larger number of riders in the P.M., a two tier system would require 1 additional large bus and 1 additional mini bus with 2 monitors at an anticipated increased cost of approximately \$146,138. In addition, the current policy of no earlier than 7:00am pickup would have to be revised to allow pickups no earlier than 6:45am.

An alternative would be to “negotiate” a half day cost per bus rate with the incumbent Contractor. Such a rate could possibly reduce the increase by \$12,000- \$15,000 per bus.

Without the additional Tier 1 a.m. Tier time up to 4 more buses would be required. However, should the School Board and administration choose to revise the High and Middle School bell schedules for educational purposes, the result would be to add 1 large bus and 1 mini bus plus monitors for the afternoon routes. Under the current contract, the District pays for the full cost of a bus regardless of the number of transportation tiers scheduled. At the current contract costs, the resultant increase in cost would be approximately \$146,138.:

CONTRACT COST			
ADDITIONAL BUSES			
RNT		DAILY	ANNUAL
84 PAX	1	\$ 323.50	\$ 58,230.00
SNT	1	\$ 323.50	\$ 58,230.00
MONITORS			
	2	\$ 18.32	\$ 29,678.40
TOTAL:			\$ 146,138.40

In addition, we reviewed several redistricting options, including:

- Closing Hampden Meadows and redistributing those students among the three elementary schools
- Operating Hampden Meadows on a split schedule with the 4th grade scheduled on tier 1 and the 5th grade on tier 2.

However, these options were based on the original construction enrollments and not on the current utilization of the available classrooms in each school. The resultant increase in class sizes, loss of curriculum, designated special subject spaces, i.e. special education, etc. would not make these options educationally feasible.

The new Middle School with a maximum enrollment of 900 students is not able to accommodate the transfer of either or both of the current 4th and 5th grades.

FINDING: Our review of the Anticipated School Start and End times indicated a planned reduction in Tier time available for transportation. Factoring increased pick up and drop off times due to school traffic, any decrease in transportation time would not be feasible for a 3 tier system with the same number of buses. Typically, shorter routes (time) would require more buses.

COMMENDATION: School transportation management should be commended for recognizing the relatively small number of actual riders, compared to those eligible and routinely overscheduling almost all of the transportation routes in order to achieve higher efficiencies.

COMMENDATION: Transportation management should be commended for routinely scheduling multi school pick up and drop off where tier time bell schedules allow.

COMMENDATION: The transportation staff, including the special education staff should be commended for trying to maintain students in their neighborhood schools whenever educationally possible.



With regard to Bus Monitors, the following identifies the potential cost savings, should a waiver be granted for the District's contracted transportation employed bus monitors (Ocean State):

MONITORS	NO.	HOURS	DAYS	RATE	2018-19 ANNUAL
	4	4.5	180	\$18.32	\$59,340.60
	1	2.5	180	\$18.32	\$8,241.75
TOTAL:					\$67,582.35

RECOMMENDATION: Current school employed paraprofessionals should be encouraged to act as Bus Monitors before and after school for additional compensation. This has proven to provide better trained personnel and Monitors both know and are knowledgeable of the child's special requirements.

RECOMMENDATION

Should the District elect to revise the High/Middle School bell schedules to an 8:30 start time, we would the following as the most educationally feasible alternative:

1. Reconfigure the transportation to a two (2) Tier system with the HS/MS on Tier 2 and ALL of the elementary schools on Tier 1.
2. High School Start Time at 8:30 and the Middle School Start Time at 8:40
3. High School End Time at 3:00 and the Middle School End Time at 3:10
4. The elementary schools start time at 7:30 and end time at 2:00

This schedule would allow for adequate transportation time for each tier and for an anticipated increase in ridership in the morning. The afternoon would require a minimum of two (2) additional buses.

In addition, a policy revision, revising the earliest student pick up at 6:45 a.m. would be required.

However, given the relatively high number of students who do NOT currently take the buses on a daily basis, it would be prudent and is therefore highly recommended that District management contact those parents and determine whether a change in school start/end times would result in more students taking the bus. The result of this inquiry could result in significantly more students taking the bus than are currently and therefore additional buses could be necessary.



NOTE: It is easier to add/delete buses at the start of the school year, as compared to adjusting school bell schedules.

Therefore, we would recommend developing the requisite routes in August for the start of the school year, based upon the numbers of scheduled riders and after the first several school days, adjust those routes (add or delete) the number and configuration of buses required.

Given the higher ridership in the morning than in the afternoon, we recommend that, if the recommended bell schedules are adopted, that two (2) additional buses be contracted for the afternoon only, until such time as the potential ridership increase is determined.

APPENDICES



**BARRINGTON PUBLIC SCHOOLS
PARENT SURVEY
SCHOOL TRANSPORTATION**

Student School of Attendance:

High School

Middle School

Sowams Elementary

Nayatt Elementary

Primrose Hill Elementary

Hampden Meadows Elementary

Student Grade:

9—12

6—8

4—5

PreK--3

How does your child get to school in the morning?

School Bus

Student Drives

Parent Drives

Walks

How does your child get home in the afternoon?

School Bus

Student Drives

Parent Drives

Walks

If your child does NOT take the bus in the morning, please indicate why.

School start time too early

Parent convenience

Problems on the bus

Other (Please Describe): _____

If your child does NOT take the bus in the afternoon, please indicate why.

School start time too early

Parent convenience

Problems on the bus

After school activities

Other (Please Describe): _____

QUESTIONS RECEIVED

1. ***Was grade/school reconfiguration included in the study?*** Yes, in our revised report we considered several school reconfiguration alternatives and their impact on school transportation costs and efficiencies:
 - a. Closing the Hampden Meadows School and relocating the 4th grade to the elementary schools and the 5th grade to the Middle School.
 - b. Revising the Hampden Meadows schedule to a split school start/end times for the 4th grade and the 5th grade. The 4th grade would start earlier and be transported on Tier 1 along with the other elementary students and the 5th grade on Tier 2 along with the High/Middle School students.
2. ***Did we consider changes in school policies, i.e. school pick up times, school walking distances?*** Yes, there were several scenarios where a change in the pickup time to “no earlier than 6:45 a.m. would have helped in efficient scheduling. Re: Walking distances, it appeared that if you lengthened the walking distances you would probably increase parental transportation and exacerbate the current traffic congestion problems. Shortening the walking distances may increase the number of riders but could also increase the tier time necessary and require a change in bells schedules to accommodate or even additional buses for the HS/MS p.m. routes.
3. ***What was taken into account in “reconfiguration of routes”?*** Among the things considered were: the number of bus stops, the number of scheduled students per stop and per mile of bus travel, the number of stops within the district walking limits, the walking distances to bus stops, and the overall time for the routes, the number and sizes of buses required, longer routes (but still running for ALL scheduled riders).
4. ***Actual student rider count days?*** December 4-8, 2017. We utilized the highest number of riders within that period of time.
5. ***Are any paraprofessionals currently acting as Bus Monitors?*** No, not currently.
6. ***Did you consider having kids opt in/opt out?*** No, drivers are required to run the route based on the scheduled students and can only “skip” the stops where students are habitually not riding. Our experience has been that if asked, parents will not opt their child out of a free service, just in case. But given the number of non-bus riders, a parent survey may be warranted with that question.
7. ***Given the 2 per seat limitation for HS/MS routes, was there any consideration of rerouting to spread out any overcrowding?*** The a.m. routes are at only 65.9% of ridership capacity and 91.3% in the p.m. That is at 2 per seat. Only 1 p.m. route is crowded but it has not been problematic this year.

8. ***Even with a 2 tier system I do not see the need to add buses?*** The 2 tier system results in overcrowded buses in the p.m. only (107% of capacity): 719 actual riders for 672 seats. Those extra 47 students would require 1 big and 1 mini bus.
9. ***If we had a more developmentally appropriate starting time for K-5 of 8:00 a.m. what would the HS/MS start time be without requiring additional buses?*** On a 3 Tier system, the HS/MS start time would have to be 45 minutes prior to the 8:00 a.m. or 7:15 a.m. This would also require earlier than 7: 00 a.m. pick-ups. On a 2 Tier system, the HS/MS could be either 45 minutes before (7:15 a.m.) or 45 minutes after (8:45a.m.). However, transporting all of the K-5 in a single tier, regardless of time, would require additional buses in the p.m. Without changing the pick-up policy and having a Tier 1 start time of 7:45 a.m. or earlier would also require a change in the 7:00 a.m. pick up policy.