WESTPORT BOARD OF EDUCATION

AGENDA*

(Agenda Subject to Modification in Accordance with Law)

PUBLIC CALL TO ORDER
6:00 p.m., Staples High School, Room 1025c

EXECUTIVE SESSION: Matters Pertaining to Security

RESUME PUBLIC SESSION/PLEDGE OF ALLEGIANCE
7:00 p.m., Staples High School, Cafeteria B (Room 301)

ANNOUNCEMENTS FROM BOARD AND ADMINISTRATION

PUBLIC QUESTIONS/COMMENTS ON NON-AGENDA ITEMS (15 MINUTES)

MINUTES: January 14 and 18, 2022, *pages 2-3*

DISCUSSION

1.	Health Report		Ms. Suzanne Levasseur
2.	FY 2023 Proposed Budget of the Superintendent of Schools, Including "Other Budgets"		Mr. Thomas Scarice Mr. Elio Longo
3.	Stepping Stones Preschool Facility Options FY 23*, pages 4-8*	(Encl.)	Mr. Michael Rizzo
4.	Transportation Study, *pages 9-55*	(Encl.)	Mr. Elio Longo

ADJOURNMENT

*A 2/3 vote is required to go to executive session, to add a topic to the agenda of a regular meeting, or to start a new topic after 10:30 p.m.
The meeting can also be viewed on Cablevision on channel 78; Frontier channel 6021 and by video stream @www.westportps.org

PUBLIC PARTICIPATION WELCOME USING THE FOLLOWING GUIDELINES:

- Comment on non-agenda topics will occur during the first 15 minutes *except* when staff or guest presentations are scheduled.
- Board will not engage in dialogue on non-agenda items.
- Public may speak as agenda topics come up for discussion or information.
- Speakers on non-agenda items are limited to 2 minutes each, except by prior arrangement with chair.
- Speakers on agenda items are limited to 3 minutes each, except by prior arrangement with chair.
- Speakers must give name and address, and use microphone.
- Per Board policy, speakers must be town residents or employees
- Responses to questions may be deferred if answers not immediately available.
- Public comment is normally not invited for topics listed for action after having been publicly discussed at one or more meetings.

WESTPORT PUBLIC SCHOOLS

THOMAS SCARICE
Superintendent of Schools

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Westport, Connecticut 06880
Telephone: (203) 341-1025
Fax: (203) 341-1029
tscarice@westportps.org

To: Westport Board of Education Members
From: Thomas Scarice, Superintendent of Schools
Re: January 24, 2022 Board of Education Meeting
Date January 21, 2022

Provided below for Board consideration is an overview of the meeting agenda items for January 24, 2022. The meeting will be held in-person.

Discussion

1. **Health Update**
   Supervisor of Health Services, Sue Levasseur, will continue to provide health updates to the Board as we continue to endure this recent severe Covid-19 wave of infections. Updates on testing, infection rates, mitigating measures, and other Covid-19 related matters will be provided to the Board. The requirement of masks at recess was removed on January 18, and before and after school programming returned on January 18. We are now working to welcome visitors back to our schools, possibly the week of January 31, and spectators to our athletic events. Additionally, we are reviewing attendance data and intend to return to normal classroom instruction without live streaming in our middle schools and high school if absences due to isolation or quarantine continue to decrease.

2. **FY 2023 Proposed Budget of the Superintendent of Schools, Including "Other Budgets"**
   The Board will continue the discussion of the 2022-2023 recommended operating budget. Following the executive summary, the thematic presentations, and a thorough question and answer session, the Board is invited to discuss the budget by series in the budget book. Finally, Chief Financial Office, Elio Longo will review the "other budgets" in the budget book, such as the private school budget, the revenue offset budget, the adult and continuing education budget, and rentals and reimbursements. It is expected that the Board will not take action on approving the budget at this meeting, but at a subsequent meeting.

3. **Stepping Stones Preschool Facility Options FY 23**
   Assistant Superintendent, Mike Rizzo, will provide information and context on the short term and long term planning for space needs at Stepping Stones Preschool (SSP) and Coleytown Elementary School (CES). Following a presentation at the last Board meeting, Mike will share the history of SSP on the campus of CES and the space challenges that have grown over time. The recommendation for a two classroom modular building remains part of the capital request to relieve space constraints at CES. Mike has analyzed the financial impact of additional options, such as splitting the program into two separate school locations. As a result of recently learning of significant delays in securing a modular unit, Mike has worked with the SSP and CES teams, along with the facilities department, to present an interim solution which is outlined in the attached memo included in this packet. This is a discussion item only as the Board is not expected to take action on these recommendations Monday evening.

4. **Transportation Study**
   As a follow up to a Board request, a transportation study has been added as a discussion item for the agenda. This is an initial discussion item and it would be most helpful to spend time in the discussion on identifying the focus area(s) for a transportation study. As a point of reference, included in your meeting packet are previous studies on transportation completed by the district, including "Bell Times and Transportation Analysis" conducted by School Bus Consultants in 2018, and a review of the "Transportation Program Structure", performed by Transportation Advisory Services, in 2003.

WESTPORT BOARD OF EDUCATION
Work Session

Board Members Present:		**Administrators Present:**	
Lee Goldstein	Chair	Thomas Scarice	Superintendent of Schools
Liz Heyer	Vice Chair	Anthony Buono	Asst. Superintendent, Teaching and Learning
Neil Phillips	Secretary	Michael Rizzo	Asst. Superintendent, Pupil Personnel Services
Kevin Christie		Elio Longo	Chief Financial Officer
Christina Torres		John Bayers	Asst. Superintendent,Human Resources and General Admin.
Dorrie Hordon			

Absent:
Robert Harrington

CALL TO ORDER/PLEDGE OF ALLEGIANCE: 8:47 a.m., Saugatuck Congregational Church, Hoskins Hall.

DISCUSSION

FY 2023 Proposed Budget of the Superintendent of Schools

ADJOURNMENT: Liz Heyer moved to adjourn at 3:23 p.m.; seconded by Dorie Hordon and passed unanimously.

Respectfully submitted,

Neil Phillips, Secretary, Board of Education
(minutes written by Lisa Marriott)

WESTPORT BOARD OF EDUCATION

Board Members Present:		**Administrators Present:**	
Lee Goldstein	Chair	Thomas Scarice	Superintendent of Schools
Liz Heyer	Vice Chair	Anthony Buono	Asst. Superintendent, Teaching and Learning
Neil Phillips	Secretary	Michael Rizzo	Asst. Superintendent, Pupil Personnel Services
Christina Torres		Elio Longo	Chief Financial Officer
Dorrie Hordon		John Bayers	Asst. Superintendent,Human Resources and General Admin.
Robert Harrington			
Kevin Christie			

PUBLIC CALL TO ORDER/PLEDGE OF ALLEGIANCE: 7:11 p.m., Staples High School, Cafeteria B (Room 301)

ANNOUNCEMENTS FROM BOARD AND ADMINISTRATION

PUBLIC QUESTIONS/COMMENTS ON NON-AGENDA ITEMS

MINUTES: Neil Phillips moved to approve the minutes of January 10, 2022; seconded by Kevin Christie and passed unanimously.

DISCUSSION

Health Report

FY 2023 Proposed Budget of the Superintendent of Schools

Board of Education 5-Year Capital Budget Forecast Including Long Lots Elementary School and Stepping Stones Preschool

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At 11:26 p.m., Neil Phillips moved to continue the meeting with the remaining agenda item as it was past 11:00 p.m.; seconded by Liz Heyer and passed 6-1 (Lee Goldstein opposed).

***

Proposed Modifications to the 2021-2022 School Calendar as a Result of January 3 PD Day

ADJOURNMENT: Christina Torres moved to adjourn at 11:36 p.m.; seconded by Lee Goldstein and passed unanimously.

Respectfully submitted,

Neil Phillips, Secretary
(Minutes written by Lisa Marriott)

WESTPORT PUBLIC SCHOOLS

MICHAEL RIZZO
Assistant Superintendent for Pupil Personnel Services

110 Myrtle Avenue
Westport, Connecticut 06880
Telephone: (203)341-1250
Fax: (203) 341-1295
mrizzo@westportps.org

To: Thomas Scarice
From: Mike Rizzo
Date: January 24, 2022
Re: Coleytown Elementary School and Stepping Stones Preschool

The purpose of this memo is to provide information and context on the short term and long term planning for space needs at Stepping Stones Preschool (SSP) and Coleytown Elementary School (CES). These two schools on the campus of CES have existed for 25 years together, each providing exceptional educational services to their respective students and creating outstanding school communities that are both shared and distinct from each other. Ultimately, all measures described in this memo, those that are excluded from and those that are included in recommendations, were considered and made with the goal of continued excellence and growth of our entire school community. It is the professional excellence, continued collaboration, and deep commitment to our students and families in these school communities that will lead us toward the best outcome.

The challenge of classroom space at CES and SSP has been an area of focus for quite some time. In the 2016-17 school year, a presentation to the Board of Education regarding SSP noted increasing enrollment and the capacity of our facilities to address the enrollment as areas of attention moving forward. Since that time, as enrollment at CES and SSP has continued to increase, it has been the creativity and collaboration of Ms. Sirowich and our administrative team, including most recently Ms. Clarke, our current Director of SSP, which has mitigated the effects of the enrollment while continuing to provide excellent programming. Most recently, an increased enrollment at CES (an increase of 20% in the past five years with an additional 7% increase projected for the next 5 years) due to migration and other factors, the need for a short and long term solution has become increasingly apparent. The compression of space may be best illustrated through the projection that the number of combined classroom sections of CES and SSP is 31 for the 2022-23 school year, the highest in the past 8 years.

The creativity and collaboration between CES and SSP to address the challenge of increasing enrollment has included the repurposing of multiple classroom, office, and other spaces to address staff and student needs, combining teachers and specialists with smaller classes into single classrooms, having specials areas teachers travel among classrooms to students, dividing larger single spaces into two smaller spaces, and the use of existing spaces for dual purposes. The options for continued creativity of this kind are few without creating an impact on the programmatic offerings of CES and SSP, and the CES enrollment continues to increase.

In the 2020-21 school year, with an increasing understanding of the enrollment on space at CES and SSP, options to "split" the SSP were considered by the administration as part of the 2021-22 budgeting process. These considerations included conducting small group meetings with a sub-committee of the SSP staff, whole group meetings with Superintendent Scarice, myself, and the entire SSP certified and non-certified staff, meetings with multiple principals across the district to determine the feasibility of housing a part of the SSP program in their respective buildings, and discussions of transportation and staffing with various individuals. These discussions and requests were met by our administrators with a "we can make it work" attitude and, when even remotely feasible and when clearly not ideal, all involved displayed a willingness to relocate, repurpose, renovate, and do whatever necessary to accommodate the SSP program. Each of these discussions presented additional challenges and required modifications to programs and facilities. However, what was most compelling in the meetings with SSP staff, those most intimately aware and knowledgeable of the work, was the desire and necessity to keep the SSP program together. This was expressed in a student and family centered manner with compelling concern for the outcomes of our students, the support provided to families, and the synergy of a program that can be proactive and responsive by the minute to the complex needs of students. As a result, for educational reasons and benefit, we have prioritized keeping the SSP program together.

We have continued to work on this challenge within the 2021-22 school year. On the CMS/SSP site, Ms. Sirowich and Ms. Clarke have continued their creative and productive collaboration to deliver quality programming to their students. We have engaged with Colliers International for assistance in the development of educational specifications for SSP to determine the space required to implement the program we believe to be appropriate for Westport. This has included site visits and interviews with a significant number of SSP staff to gather input on their programmatic needs. Reviewing the projected enrollment for the 2022-23 school year at CES and SSP, and with an understanding of all the work to date, there was an immediate need for an additional classroom section for 2022-23 and to address this challenge in the 2022-23 budgeting process.

The priorities, in no specific order, as we address this challenge are:

- Maintaining SSP as a program in a single location
- Providing SSP and CES space to continue their programs
- Building a bridge to a longer term space solution as part of an overall district facilities plan

The educational benefit of maintaining SSP as a program in a single location has been expressed by staff and families on multiple occasions. Nevertheless, it is responsible and appropriate as a district to understand the financial implications of such priorities as part of developing a budget. While the educational benefit is not quantifiable, we have gone through the exercise of modeling the financial implications of running the Stepping Stones Preschool Program in two locations.

A modeling of the additional staffing required to operate SSP in two locations are as follows:

Category	FTE	Salary
Total Certified Staff	2.8	$268,537.00
Total Non-Certified Staff	5.2	$225,994.00
Total FTE/SALARY	8.0	$494,531.00

The overall increase of FTE is due to requiring additional personnel to replicate programmatic and structural elements of SSP in a second location (i.e. a special education teacher to provide small group instruction, a school psychologist, a part-time nurse and secretary) as well additions of partial FTEs to compensate for efficiencies achieved now by grouping and sharing students with single staff members (SLPs, OTs, PTs, Paraprofessionals). This modeling does not account for: 1) administrative oversight of the program; 2) potential transportation costs; 3) facilities adjustments, and 4) individual/programmatic supplies/equipment that would be needed in a second setting.

SHORT-TERM SOLUTIONS

Plan A: Install two modular units at CES to be used by CES to create additional space. Funding in the amount of approximately $750,000 will be secured through the capital budget as part of the 2022-23 budget process. This is a one-time cost to the Board/Town of Westport, plus any typical maintenance associated with cleaning these facilities. It is important to note that the delivery of modular units may take up to 24 weeks; this is approximately 12 weeks longer than anticipated and from our prior experiences of securing modular units. This necessitates the development of Plan B.

Plan B: Ms. Sirowich and Ms. Clarke will develop an interim plan to address any period of time in which the modular units are not available. This plan will be developed with input from staff and will repurpose current space while we wait for the modular units to be installed. There will be an impact on program delivery at CES and any such implications will be shared once they are fully known. This plan will be designed for a January 1, 2023 modular occupancy with the intention to occupy as soon as the funding and delivery process permits.

Plan C: Create a second setting for Stepping Stones Preschool and divide the current program into these two settings. The positive aspects of this proposal would be to increase our capacity across the district to serve our preschool students and families. There are, however, very significant negative aspects of this plan including educational, financial, and facility impacts.

LONG-TERM SOLUTION

The needs of SSP and CES should be viewed and considered holistically within the overall district facilities plan, including any opportunities that may exist with the current planning for Long Lots Elementary School.

RECOMMENDATIONS

As a short-term solution, it is recommended that we proceed with Plan A including the development of Plan B and, to the extent necessary, the implementation of Plan B. Any reasonable steps to expedite the delivery and installation of the portables should be considered as a result of current market conditions. Additionally, the district should proceed with the long-term solution provided above.

MODELING OF SPLIT PRE-K PROGRAM	Current Staff (FTE)	FTE required to operate 2 locations	Differential	Salary
Certified Staff				
Special Ed Classroom Teachers	6	6	0	$0.00
Intensive Resource Teachers	2	2	0	$0.00
Special Ed Teacher-Resource Room	1	2	1	$66,881.00
Benefits				$27,000.00
Speech/Language Clinician	3.5	4	0.5	$42,531.00
School Psychologist	1	2	1	$85,061.00
benefits				$27,000.00
Art - Special area teacher			0.1	$6,688.00
Music - Special area teacher			0.1	$6,688.00
PE - Special Area Teacher			0.1	$6,688.00
Total Certified Staff			**2.8**	**$268,537.00**
Non-Certfied Staff				
Classroom Paraprofessionals	6	6	0	$0.00
IR paraprofessionals	6	6	0	$0.00
One to One Paraprofessionals	4	6	2	$63,818.00
benefits			2	$54,000.00
Secretary	1	1.5	0.5	$26,912.00
benefits				$27,000.00
Nurse	0.7	1.2	0.3	$20,064.00
Occupational Therapist	2	2.2	0.2	$17,100.00
Physical Therapist	0.7	0.9	0.2	$17,100.00
Total Non-Certified Staff			**5.2**	**$225,994.00**
Total Staff FTE/Cost			**8**	**$494,531.00**

SCHOOL BUS CONSULTANTS

Bell Times and Transportation Analysis

Westport Public Schools
June 1, 2018

SCHOOL BUS CONSULTANTS

June 1, 2018

Elio Longo, Jr.
Director of School Business Operations
Westport Public Schools
110 Myrtle Avenue
Westport, CT 06880

Dear Mr. Longo:

School Bus Consultants (SBC) is pleased to submit this report which summarizes our work with Westport Public Schools (WPS) staff and the Board of Education. Included are summaries of our transportation review, bell time analysis, and several recommendations for review and incorporation into the implementation of new bell times.

We would like to take the opportunity to thank you and your administration, the committee members, and members of the Board for engaging with SBC and being forthcoming with a wealth of data and information. The results of our analysis and study are the result of accuracy, honesty, and openness found during our time working with WPS stakeholders. In particular we would like to thank you and Sandra Evangelista for directly assisting us through the process.

SBC looks forward to your review of this document and also looks forward to providing continued assistance as you further consider the recommendations for ongoing transportation improvement. Please do not hesitate to contact us with questions, comments or concerns.

Sincerely,

Mike Archer
Project Manager

SCHOOL BUS CONSULTANTS

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SCHOOL BUS CONSULTANTS

Executive Summary

School Bus Consultants (SBC) has been engaged with Westport Public Schools (WPS) for the past several months conducting meetings, collecting information, and observing the operation of transportation. The following summarizes observations, findings, and recommendations that result from the primary areas of the study. Additional detail, summary of the methodology, and further discussion can be found within the report document. The summary is divided into discussions regarding the current operation, as well as the bell time discussion.

Current Operations

According to many performance indicators, the operation transports a significant number of students in three tiers, an efficient use of its contracted fleet.

Across the transportation system, buses are planned for an effective use of available seating on the fleet. Additionally, the contracted "per bus" cost is similar to other nearby school districts. Where we observe buses to appear under-utilized, in many cases it is a result of the area geography. In addition, the window of time between tiers as mentioned in the first finding. An example is Saugatuck School which has an average of 58 students assigned to their buses. Compare this to Coleytown School with 31 students assigned per bus. The difference is geographical in that Saugatuck has a higher density of population and can pick up more students in less time. The opposite is true for Coleytown, with larger lot sizes and lower density within its respective catchment.

Transportation occurs in three distinct waves or tiers with 30 minutes in between each tier. This window of time restricts possible efficiencies as buses can only be scheduled for 30 minutes of total travel time.

Several activities both planned and unplanned occur within the window of time between tiers. Many bus routes are scheduled for more than ten individual bus stops which can take more than a minute each; students must be boarded or unloaded at school driveways; drivers must check the buses for sleeping students and cleanliness; and some time is added in case of unforeseen traffic delay. Shrinking the window will likely lead to increased busing costs, while widening the window of time can potentially realize savings in the bus operation.

Bell Time Planning Discussion

The fact that Staples starts its day first is advantageous to transportation operations, and must be a consideration in future models where start times are moved around.

A few key factors make high school transportation advantageous in the earlier time slot. Overall, the arrival and dismissal processes are faster at the high school than at other schools, there are fewer bus stops to be made for high schoolers, and parents aren't required to greet older students at the stop which causes delays in some elementary routes. Additionally, the high school demands a significant volume of traffic, which must be considered in moving the school to a later time. The ease at which the high school dismisses its buses is advantageous in a three tiered system, because buses often have two subsequent trips to perform. If other schools were to move into the earliest tier of transportation, a dismissal process optimized for timeliness will reduce delays in transportation later in the day.

The most important consideration from a perspective of transportation logistics, is time and space. There must be enough time in between tiers in order to allow buses to perform a complete trip, and if time allows for buses to fill their available space (seats), this will be conducive to an efficient operation.

As it stands, there are 30 minutes between bell tiers. In some cases, buses cannot fill their seats because there is not enough time to make the required stops. This is more problematic in regions of the town with larger lot sizes and a lower density of students. The goal is to fill the bus and re-deploy it as many times as safely possible throughout a shift, and today that means three times. However, aligning bell times with fewer than 30 minutes in between tiers will likely lead to an increase in fleet and thus cost.

Introduction

In January 2018, the Westport Board of Education approved the project scope presented by School Bus Consultants. This scope called for the review of transportation operations with a focus on the existing bus routes, their design and schedule, and the impacts that may result from moving secondary school bell times to later in the morning. The impetus for this analysis stems from the growing body of medical research supporting a later school start time for adolescents. This report summarizes the review performed by School Bus Consultants.

Baseline Review of Transportation

As School Bus Consultants (SBC) began its engagement with Westport Public Schools staff, a site visitation was performed. The purpose of this was to perform observations at WPS schools, and to begin the work of acquiring data related to the day to day operations of the transportation department. An initial analysis of the data, combined with observational information from the visit, provides a foundation for our review of current operations. Included in this review is an analysis of budget and finances, a review of performance indicators popular within the pupil transportation industry, and a review of policy and procedure that could influence the process of shifting bell times.

Financial Review

The bus operation at WPS is procured through a contract, and as such the bulk of the district transportation budget is allocated to this contract. Within the budget, the costs are separated into line items for special education transportation, private school transportation, and regular education. Additional budgeted items include allocations for software support, supplies, and staff overhead.

In total, WPS budgeted expenditures for the 2017-18 school year are $5.57 million for transportation. This represents approximately 4.9 percent of the entire WPS operating budget. SBC typically sees the transportation costs constitute between four and six percent of the total operating budget for a district, and so WPS is within that range.

The bus contract includes a pricing schedule which measures the daily cost of the operation of a school bus by total time and fleet size. Full size buses requiring a four hour and 15 minute day are charged at $477.66 while the same length of day for a smaller special education bus is listed at $430.31. These costs for the daily to-from school transportation total approximately $4.8 million for all to-from transportation. This total includes type 1 regular education, type 2 (smaller buses) regular and special education. The remaining $770,000 is divided up with $483,000 allocated to out-of-district special education transportation, $239,000 allocated to fuel, and the remaining $48,000 to office supplies, software support, and other miscellaneous items. Going back to the $4.8 million that supports the to-from school daily transportation, if add an allocation of the fuel costs as well as an allocation of the supplies costs to this total, we approximate a total annual bus cost of $90,000

The contract itself is very typical of contracts for pupil transportation in the area. It provides established guidance for the contractor’s responsibilities. One area of the contract which could see possible savings in future years, is the age requirement. Presently the contract requires a maximum fleet age of 8 years (small buses) and 10 years (large buses), with average ages at 4.5 and 5.5 years respectively. If this

requirement were to come up in age, a savings may be seen. The national average age of a fleet is 9.5 years, and as such WPS's current fleet is far below this average. This is a possible consideration for mitigating the costs associated with additional fleet for bell time alignments.

Performance Measurement

There are several key metrics that SBC uses to measure operational performance. In this section, we review these metrics and discuss them as they related to the existing financial picture, as well as the potential future of finances relevant to bell time schedules.

Below, a table summarizes several key performance indicators. These are widely used throughout the industry, and provide a significant level of insight to the operation. Each row includes a metric, as well as a best practice and some notes regarding what can be taken away from the metric value.

Table 1: Summary of Operations Performance Metrics

Summary Data	Value	National Average	Notes
Total Buses	57	N/A	
Total Trips	276 (am & pm)	N/A	
Average Trips Per Bus	4.84	N/A	In a three tier system such as WPS, an average of 6 trips means every bus is performing every tier.
Average Riders Per Full Size Bus - Systemwide	51	44 (not an average, industry best practice)	A bus can seat 48 students when sitting two per seat. Elementary students can sometimes sit three per seat, and while High School buses can only sit two per seat, many don't ride and as such, the bus can be planned for more students than actually fit.
Average Trip Total Time - Systemwide	25 minutes	N/A	Because there are 30 minutes between each tier's start and end time, the average trip must be less than 30 minutes long, as many buses perform other trips.
Buses per 100 students	1.01	1.10 to 1.34	This is a popular industry method to understand the utilization of buses by how many students are assigned, as well as how many times throughout a day they are deployed. The lower the number, the better.
Annual Cost Per Bus	$90,000	$57,000 to $70,000	The WPS measured value is far higher than the national average, but is comparable to neighboring districts. Cost of operating is higher in Connecticut than in many other locales.
Annual Cost Per Student	$957	$1,000 to $1,100	As a positive following to the above metric, despite the overall high cost per bus, the buses are utilized effectively and on a per student basis, the costs are lower in aggregate.

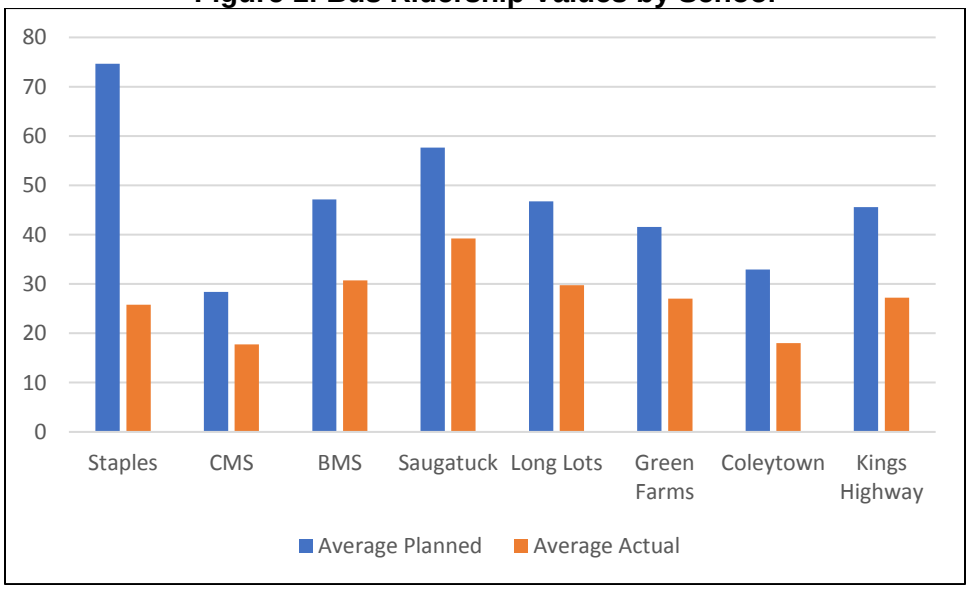
Above in Table 2, there is a lot of information to take in. The assessment attempts to draw conclusions from the upper lines, and then analyze the bottom cost related metrics as they relate to the operation. Starting at the top, WPS operates 57 vehicles which will perform 287 trips throughout the day. This includes the morning, the middle of the day, and the afternoon. This total means that an average bus is performing 5.04 trips per day. Below, the table shows the groups of buses as they are able to perform sums of trips.

Table 2: Trips Per Bus Summary

Count of Trips	Buses
<4	5
4	29
5	1
6	22
Total	**57**

The average number of students on each bus across the district is 51. This number represents the total number of students who are actually *assigned and eligible* to ride a bus. In addition to this value, WPS also tracks average ridership on a daily basis. This *actual rider* value is 27 for the full size buses across the WPS operation. Clearly this number is far lower. The chart below illustrates how this ridership trend differs between the WPS schools.

Figure 1: Bus Ridership Values by School



Above, we see that the high school has the largest discrepancy between assigned ridership, and actual ridership. Many high school students do not ride the bus, and as such the buses are “overloaded” in the assignment process. This is a common practice in the industry, and so long as regular counts are

taken to ensure that buses are not overcrowded, it ensures that buses are not empty as a result of under-loading in the plans.

This practice does raise concerns in the discussion of bell times, however. Many other school systems that have switched bell times, have seen an unpredictable change in bus ridership. Ridership can increase or decrease, depending on the community and daily routines of the students. Erring on the side of caution, and assigning a number of students close to the capacity of the bus is recommended in the event of a bell time change.

To close this section of discussion, the cost values listed at the bottom of Table 2 represent an average cost for this area, but higher than average cost for the nation. The fact is that the area has a higher cost of living, and must pay a drivers' union dictated wage. Wages make up the majority of operational costs for buses, and as such, the cost is high on a per bus basis relative to the rest of the country. However, the cost per student average is within range. This is indicative of the high assignment of students to fill buses, and the ability to deploy buses three times in the morning and in the afternoon.

Policy and Procedure Review

The policy supporting the transportation department is very minimal. With regard to eligibility for students whom wish to use the bus, nearly all students are transported if they wish to use the bus. Because no definition is given in Board policy we default to the state guidelines for transportation eligibility, listed below:

- High School – All students beyond 2 miles from the school must be bused.
- Grades 4 – 8 – All students beyond 1.5 miles from the school must be bused.
- Grades K – 3 – All students beyond 1 mile from the school must be bused.
- All students with Individualized Education Plans must be accommodated with transportation in accordance with the plan.
- Transportation must be provided to students residing within the district and attending a private school located within the district.

Because of the nature of Westport's geography, road network, and location of existing school facilities, few walkers would theoretically be walking if a policy change were to be instituted. An example of a group of "walkers" whom do not utilize the bus exists adjacent to the Staples High School facility just across North Avenue. From this neighborhood, there are approximately 10 students who do not receive bus service. Other than this neighborhood, and several adjacent home properties, many Staples potential walkers would encounter difficult conditions for pedestrians, as North Avenue has very little shoulder or sidewalk.

In addition to policy, there are a number of procedures and guidelines used to support the management of the transportation operation. A few are listed below.

Early Pickups – Several years ago, it was established that no pick-ups for high school students would occur before 6:40 AM. As the bell time for the high school is set for 7:30 AM, and with bus arrivals occurring between 7:05 AM and 7:15 AM, this guideline effectively limits the window of time for bus scheduling. Buses must complete all pickups at bus stops between 15 and 25 minutes. In some cases, where buses are serving students in areas far from the high school, travel time reduces the amount of time that buses have to pick students up. This ultimately affects the ability to fill a bus with students, due to the limited time available.

Bus Stop Site Review – The locations of bus stops are important for a variety of reasons. First and foremost, the location must be safe. A variety of factors contribute to safe bus stop locations. Sidewalk or shoulder availability on busy roads are necessary for students to have a safe space to congregate, as well as a safe passage from their driveway to the stop if the stop is further away. In addition, bus stops must be in open areas with good sight distance. Because buses make complete stops, other vehicles must be able to see the bus if coming around a blind curve. Lastly, stops must be placed close to where the students reside. Areas where there is fast moving traffic, little to no shoulder, and poor lighting are examples of where bus stops must be placed with strategy and first hand observation.

Regularly, requests come into the transportation office to add, move, or remove bus stops. WPS has an established procedure to review each and every bus stop when requested to do so. The review process typically begins with a call to an administrator, at which point they will manually observe the site at peak traffic periods, as well as consult the police department.

Bus Route Detail Analysis

The WPS buses are deployed in three waves, as mentioned elsewhere in the report. Beginning at 6:40 AM the Staples buses are performing their first stops. On the second tier, Saugatuck and the middle school trips are performed. Lastly, the elementary trips are performed on the third wave. Below, the graphics depict the tiered deployment. The model used to create these graphics takes a count of buses on the road at given times throughout the morning and afternoon. If a bus is scheduled to be occupied and traveling with students, it is counted in the Y axis bars. Time is tracked along the X axis.

Figure 2: Morning Tier Model

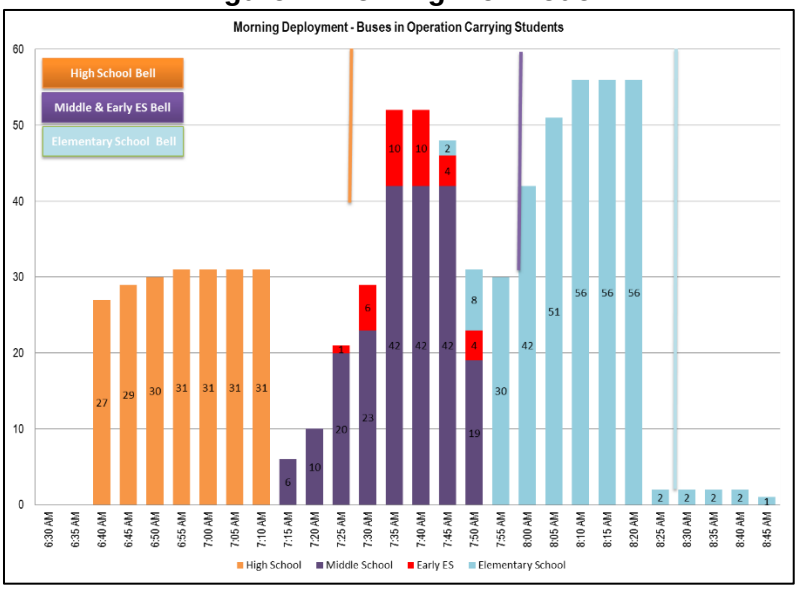
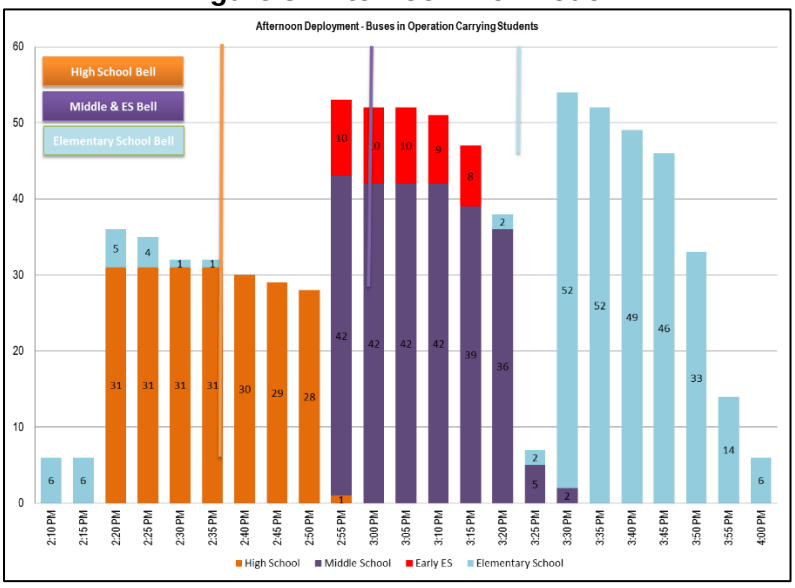


Figure 3: Afternoon Tier Model



As shown, we can see three distinct tiers of transportation service. The highest bars in the graphic are found in the third tier, as these schools require the highest number of buses to serve the student population. In the first tier, 31 buses are deployed to serve Staples High School. Second, 42 buses serve the middle schools as well as 10 buses dedicated to Saugatuck for 52 total. Third, 52 buses provide transportation at the elementary level.

When analyzing the bus routes individually, or at individual school locations, SBC reviews the ridership and the total amount of time required to complete a trip. As shown earlier in the report in Figure 1, ridership averages vary from school to school. Below, every route is categorized based on its total ridership and its total time on the road.

Figure 4: Routes Fitting Time Criteria

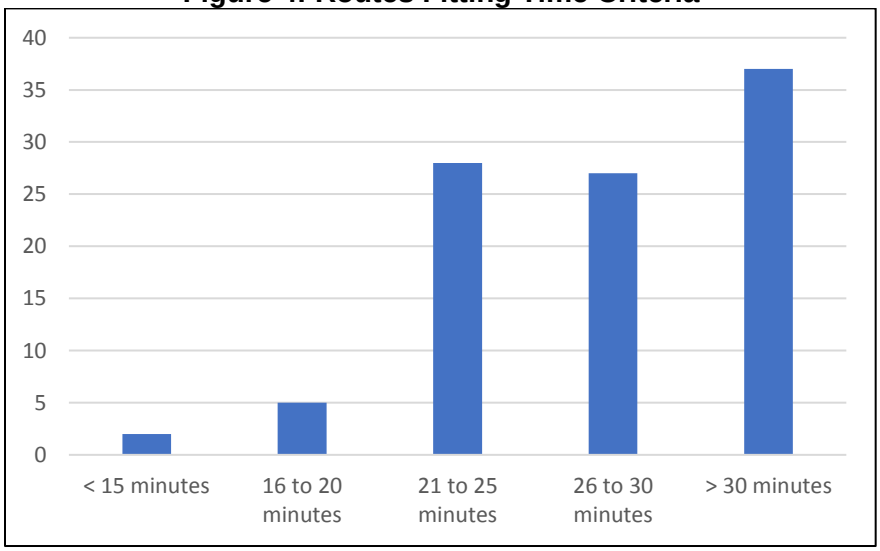
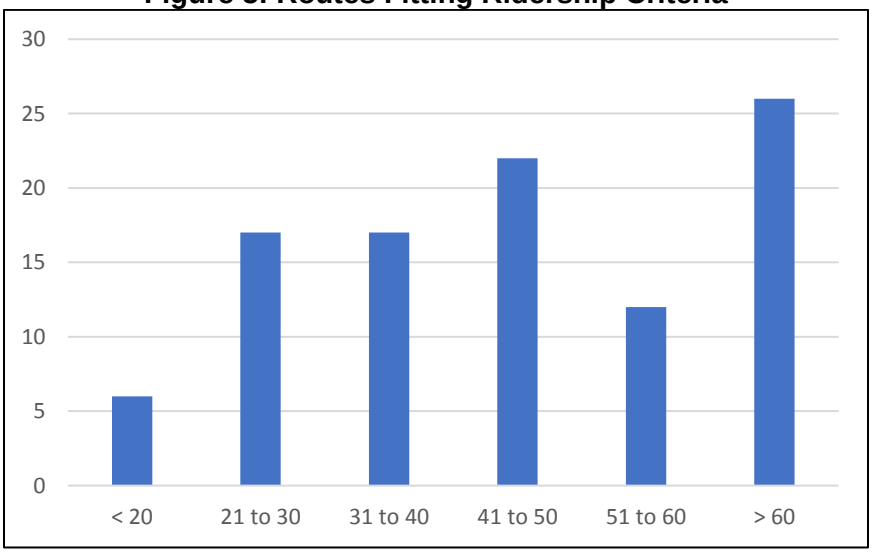


Figure 5: Routes Fitting Ridership Criteria



Above, we see that few buses meet the criteria on the lower end, or the left end of the figures. Only six bus routes transport less than 20 students, and only seven routes are less than 20 minutes long. These routes would constitute the possibilities for consolidation or revision in the future, in order to bring overall ridership numbers higher. Keeping in mind the routes are not mutually exclusive, as in the six under capacity routes are not the same seven routes that are short in total time. This makes the task more detailed and difficult, yet still possible and recommended as an annual task in planning for the upcoming school year. This analysis was performed as a separate task during the project engagement, and is summarized for the 18-19 school year planning process in appendix 1.

Options Discussion

As part of the scope of work, SBC has presented a number of different options for school bell times. These options were primarily designed out of an underlying analysis related to the existing bus fleet, the route designs, and schedules. From the analysis of this information we could approximate the possible impact that moving bell times could have on transportation.

As part of the process, discussions related to the scenarios occurred at several meetings of the School Start Time Committee. Some iterations of options were dismissed by the committee as well as some options being chosen for further review. Below, from the group of options that were presented, I list the few that were chosen for further analysis and consideration.

Table 3: Bell Time Options as Presented by SBC

Scenario	Tier 1 Schools	Tier 1 Times	Tier 1 Schools	Tier 2 Times	Tier 3 Schools	Tier 3 Times	Fleet +/-
2A	BMS & CMS	7:45 AM to 2:30 PM	SHS & SS	8:15 AM to 3:00 PM	CS & KHS – GFS & LLS*	8:40 AM to 3:25 PM - 8:55 AM to 3:40 PM*	+2 to 4
3A	BMS & CMS	7:30 AM to 2:15 PM	SHS & SS	8:10 AM to 2:55 PM	GFS, KHS, LLS, CS	8:50 AM to 3:35 PM	(-1 to 3)
4A CHANGE	BMS & CMS	7:45 AM to 2:30 PM	SHS & SS	8:15 AM to 3:00 PM	GFS, KHS, LLS, CS	8:45 AM to 3:30 PM	+4 to 6
New	GFS, KHS, LLS, CS	7:45 AM to 2:30 PM	SHS & SS	8:20 AM to 3:05 PM	CMS & BMS	8:55 AM to 3:40 PM	+2 to 4
No Change	SHS	7:30 AM to 2:15 PM	CMS, BMS, SS	8:00 AM to 2:45 PM	GFS, KHS, LLS, CS	8:30 AM to 3:15 PM	0

Above as shown, the options selected by the committee retain a three tier structure. This structure is ideal for the efficiency of busing operations however the more important factor is time between each tier. As shown, the smaller the window of time between each tier, the more buses would be required.

Another important factor is the amount of buses required for each tier. Below, the current tier structure is outlined with the total number of buses per school and tier.

Table 4: Tier Bus Requirement

Count of Trips	Buses
Tier One – SHS	31
Tier One Total	**31**
Tier Two CMS	20
Tier Two BMS	22
Tier Two SS	10
Tier Two Total	**52**
Tier Three LLS	12
Tier Three GFS	13
Tier Three KHS	12
Tier Three CS	17
Tier Three Total	**54**

Above, we see that the third tier requires 54 buses to operate as it is aligned today. Alternately only 31 buses are required to perform the first high school tier. This is an important point of discussion in the alignment of bell times. All of the scenarios presented align Staples with Saugatuck. This is strategic because it creates a tier of 41 vehicles. The imbalance still remains however, so long as the four elementary schools are on the same tier with the same quantity of fleet required.

An important discussion related to the scenario labeled *"new"* is the placement of the elementary schools first. Many WPS elementary schools currently operate without the necessary arrival and dismissal procedures for bused students. Today, buses arriving to the elementary schools cannot do so in excess of 15 minutes before the opening bell while at Staples they can. Likewise, the afternoon is a slow dismissal with buses arriving as they complete their preceding trip, with some level of variability from day to day. With the first tier alignment, elementary school staff will need to stage buses and students in order to efficiently board and deploy the buses in a timely manner.

The most important takeaway in the discussion of bell times is the amount of time placed between the tiers. The more time that can be given, the better the outcome in regard to cost and overall efficiency. As it stands, there is some trouble in completing trips in the 30 minute window. Certainly, narrowing that window would create some disruption even in the current bell time alignment. While fleet may need to be added in the first year, regardless of time allotted between tiers, more time creates more flexibility and allows for traffic patterns, driver behavior, ridership patterns, and other routines to settle with less strain on the logistics of the bus system.

Conclusion

The process of establishing brand new bell schedules is a significant undertaking. There are a number of challenges in the logistics of providing education, of which transportation is just one. Throughout this report, SBC provides analysis to ensure that decisions regarding the bell schedules can be made with accurate and organized information. We aim to present this in a way that can contribute to the necessary discussions and debates as the decision moves through its process. Below, we list some closing takeaways in order to provide transportation implications in the bell time discussion.

The more space that can exist between each tier start time, the more advantageous to transportation. As mentioned throughout the report, time is the most important factor. Time allows buses to fill up with eligible bus riders by making more stops and traveling more distance. Additionally, time allows for some breathing room on days where there are operational challenges such as traffic, driver absences, or special events. Any scenario in which the tiers are closer than 30 minutes would require significant re-design of the transportation system and likely increase the total number of buses required.

Ridership patterns will likely change due to the new routines. Today, many high schoolers opt not to ride the bus. It is possible, as we have seen in other districts, that bus ridership will increase or decrease depending on how routines are affected. Upon implementation, a careful watch must be given to the ridership levels, in order to ensure quality and safe service. In addition, service may change in that students may opt to ride a different bus to daycare or another location. The ability to make adjustments in the opening weeks of the school year is helpful.

The three tier set-up provides a significant opportunity for efficiency. While some two tier systems were presented and eliminated by the committee, they drastically widened the gap of time between each tier. They also required an addition of fleet. The three tier system is one of the most efficient ways to provide pupil transportation. If the alignment of three distinct tiers can be preserved, even if buses are added, it is conducive to efficient transportation within the constraints of the bell times.

While possible to align elementary schools on the first tier, arrival and dismissal procedures will require changes. The high school dismisses students faster than elementary schools do. This is for a variety of reasons, but in the event that elementary schools dismiss first, the buses will be staged at each individual school, ready to onboard students as soon as the bell rings. If the window of time between the elementary tier and the subsequent tier is not sufficient, there will be service delays. While the high school buses can roll in just a few minutes, under current conditions the elementary students can take over 15 minutes. This must be accounted for in the busing schedule.

Transportation routing logistics are only one part of the puzzle. While this report focused on the routes and possibly re-deployment of a new fleet to accommodate bell times, other impacts are important as well. Athletics is the most prominent, as buses that are currently available to do sports trips may not be available in certain bell scenarios. Field trips, clubs, IEP programs, and before-after school programs will sometimes rely on transportation. If not today, then possibly with a move to new bell times. Transportation is but one part of the discussion.

SCHOOL BUS CONSULTANTS

Appendix 1

The purpose of this memo is to summarize a preliminary review of Westport's bus routes with a focus on efficiency. As industry best practice recommends, a careful review of bus routes should be conducted on an annual basis. As part of the scope of work outlined for School Bus Consultants (SBC), a more detailed report will follow this memo to provide a more comprehensive summary. However, due to meeting schedules related to budgeting and planning, a preliminary report was requested of SBC by WPS administration.

Process

Year over year, one constant is that bus routes inevitably change. Bus stops are removed or added; students stop riding or new students move into the Town; and traffic patterns, construction, or other roadway obstacles can affect the route. The regular review of routes and resulting updates or changes generally occurs in the spring and summer preceding the school year when changes are to take place.

When reviewing routes for the purpose of identifying potential modifications based on efficiency, a preliminary review of any particular school's deployment of buses is necessary. Following this review, a further analysis of each bus route can be performed to identify which buses are good candidates to revise for the upcoming year. Key factors to look for are buses with a low number of student riders, and buses with scheduled travel time that is shorter than the amount of time allotted for buses to perform a trip. In the case of WPS schools, each bus can perform a 30 minute trip due to the spacing of tiers.

Summary

Below, each school is listed with its total number of registered Type 1 bus riders, as well as the total number of buses serving each school.

Table 1: School and Transportation Summary

Bus Number	Type 1 Riders	Type 1 Buses	Average Ridership
Staples	1642	22	75
BMS	770	17	45
CMS	369	14	***26***
Saugatuck	461	8	58
Green Farms	374	9	42
Coleytown	329	10	***33***
Kings Highway	410	9	46
Long Lots	464	11	42

As shown above, of the middle schools, Coleytown has the lowest average number of students on each bus. Of the elementary schools, Coleytown has the lowest average ridership as well. The next layer of analysis is to review each route to determine what buses transport a low number of students using a

small amount of time. Generally these are good candidate bus routes to review and possibly change in the upcoming year. Below a table summarizes bus routes that meet either of the following measures:

1- Have fewer than 35 students listed as eligible riders for the bus route
2- Are scheduled for 25 or fewer minutes of total travel time

Table 2: Summary of Routes for Further Review

Bus Number	Student Count	Scheduled Time
BMS #10	20	25 minutes
CMS #11	37	20 minutes
CMS #2	28	20 minutes
CMS #29	28	26 minutes
SS #16	33	22 minutes
SS #16	33	22 minutes
GFS #5	33	20 minutes
GFS #9	30	23 minutes
CS #15	34	25 minutes
CS #26	23	29 minutes
CS #12	13	15 minutes

As shown in the table above, several bus routes meet the criteria. From the data above, a further review will be necessary of the geography, turn by turn directions, safety, and timetables of the routes in order to determine of consolidations, modifications, and improvements can be made to the efficiency.

TAS
TRANSPORTATION ADVISORY SERVICES

WESTPORT PUBLIC SCHOOLS

REVIEW OF TRANSPORTATION PROGRAM STRUCTURE

FINAL REPORT

Prepared by:

Transportation Advisory Services
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TRANSPORTATION DEPT.

August, 2003

EXECUTIVE SUMMARY

Transportation Advisory Services (**TAS**) was engaged to review the structure of the Westport Public School's transportation program for efficiency and cost effectiveness. Where possible, suggestions were to be made for any possible changes that would provide alternatives for greater efficiency and effectiveness.

The transportation program that is presently designed provides as much efficiency as possible given the requirements that exist for the program's design. Some of these requirements are historically based, others exist for safety purposes, and some limit the time a student may be required to be transported on a school bus. The issues that affect the operation of the transportation program include the following:

1. The maximum of 30-minute time between tiers impacts the ability of the buses to be routed for longer distances to pick-up more students, thereby increasing the number of buses used while reducing the number of students assigned to each bus.

   This maximum route time requirement is the single most important factor affecting the number of buses being used.

2. The number of buses scheduled is based upon full ridership while the reality is that it appears that less than the numbers of students assigned to a route consistently ride the bus to school. This is why the buses are underutilized.

3. The geography of the District coupled with very heavy traffic in the morning impacts the structure and the timeliness of the routes.

Any changes in the transportation program to reduce the number of buses and provide for greater operational and cost efficiency would require two things. The time between the tiers would have to be increased, and the transportation program would have to be built upon a percentage of less than full ridership. A suggestion is to allow 45 minutes between the tiers, which could be accomplished by having the first tier schools start a little earlier and/or the second and third tier schools start a little latter. Any extension of the time between the tiers will result in the students in the third tier schools being transported home later than that which presently exists. As far as using a percentage of ridership as the basis for the number of routes needed, within the body of the report a factor of 90% of ridership is used as an illustration.

The reader is encouraged to read the report in its entirety since it explains in greater detail the existing program, changes that are possible, and the need to examine seriously the guidelines that have been imposed upon the structure of the transportation program. Any serious changes must have these guidelines modified.

INTRODUCTION

Transportation Advisory Services (**TAS**) was engaged to perform a review for the Westport School District (hereafter referred to as "Westport" or "District") in Westport, Connecticut. The purpose of the study was to review the existing structure of the transportation program, and where possible and appropriate, to suggest alternatives to improve efficiency and reduce the number of vehicles.

Reviews were to include school start/end times, routing tiers, fleet utilization, possible modification of the routes themselves, and related issues. This engagement was to provide the District with a third-party perspective of the options that are available.

The District's liaison for the project was Mr. Peter Isabelle, Transportation Coordinator. Mark A. Walsh, **TAS** Partner, was the Project Leader with Louis J. Boffardi of **TAS** serving as the Project Consultant.

The Westport Public Schools currently contracts for its transportation services with DATTCO Bus Company. For this service, DATTCO operates from a location in Westport and in Bridgeport. Including spare vehicles, the operating fleet consists of 61 vehicles. There are 16 65-passenger buses, 28 71-passenger buses, and 17 vans distributed as eight 19/20-passengers vans, seven 16-passenger vans, and two 2-wheelchair/9-student capacity vans.

44 Type I
17 Type II
+ 2 w/c

Everyone involved was extremely cooperative and provided us with everything we requested. Thanks are extended to all of the individuals who provided assistance in this study process.

METHODOLOGY

TAS' *modus operandi* is straightforward and analytical. We collect facts bearing on the existing program and compare this information to established criteria. We test the feasibility of options available to the District, based upon the facts and comparisons with other districts, and make recommendations accordingly. We conduct interviews with numerous parties in order to gain perspectives about the transportation program. We evaluate contracts, policies and procedures based upon the experience that we have gained, and the methods that we have developed, over the course of working with over 400 districts, agencies, and associations in 15 states.

Initial discussions for the study began in the late spring of 2003. **TAS** submitted a detailed proposal to the District on June 3, 2003, which described the scope and nature of the proposed study. Upon the acceptance of the proposal, the following activities were undertaken as part of our analysis:

1. Information was requested and received from the District that was utilized as part of the analysis to provide a review of those parts of the current

transportation program required for this study. This information included the following:

a. Enrollment information of schools and grades as of October 1. 2002.

b. Enrollment projections of schools and grades for October 1, 2003.

c. Fleet listing of buses used by DATTCO for Westport Public Schools.

d. School assignment of transportation service vehicles for the 2002-2003 school year

e. Transportation program structure for the 2002-2003 school year.

f. Westport Public Schools information from the school system's website.

2. Initial visits were made to the District on Wednesday and Friday, July 9th and 11th, by the **TAS** Project Consultant to conduct a number of meetings to gather information and perspectives about the transportation program. Meetings were held with the following individuals during the visits:

   a. Nancy Harris, Assistant Superintendent for Business.

   b. Margaret "Midge" Hicks, Transportation Department Secretary

   c. Jack Hughes, DATTCO Terminal Manager, Westport contract

   d. Peter Isabelle, Transportation Coordinator

   e. Dr. Elliott Landon, Superintendent of Schools

   A tour was also made of the District.

3. A second set of visits was made from Wednesday to Friday, July 23rd to 25th, by the **TAS** Consultant to work with Peter Isabelle and Margaret "Midge" Hicks to review further the transportation program, the structure of the routes, and to discuss alternate program and route structures. A second tour was made of the District. An exit interview was held with Nancy Harris.

4. Throughout the review process numerous items were discussed with District officials or provided by them through the use of telephone conversations, letters, fax communications, or E-mail.

5. This document constitutes the official report to the District. It is intended to serve as an advisory document and resource to the District, and, as such, it

should be reviewed and evaluated by the District for its applicability to the circumstances at the time of the review.

*A number of sources were used by **TAS** to obtain the information used in this study. While every effort was made to assure that such information is the most current and complete information available for the purpose of this study, **TAS** does not certify the accuracy of such information.*

***TAS** uses available information and its experience to estimate the potential efficiencies and/or improvements of particular transportation service arrangements described in this study. Although **TAS** believes that past experience is the best guide for future action, **TAS** does not warrant that the changes recommended by **TAS** will lead to substantial savings or efficiencies if implemented.*

BACKGROUND and the PRESENT PROGRAM

During the 2002-2003 school year, Westport is utilizing 40 buses and 13 vans on regularly scheduled home-to-school routes. The transportation program utilizes a three-tier system with the operation illustrated in the chart below.

More specific information on the structure of the transportation program (including the number of students assigned to each bus) is found in Appendix A of this report. Specific information on the DATTCO fleet servicing the Westport Public Schools is in Appendix B of this report.

The District's Contractor is DATTCO, and payment for student transportation services is on the basis of 21 5½-hour buses, 19 four-hour buses and 13 four-hour vans. The vans are used primarily for special education, to provide transportation services in areas not accessible to a bus, and for the special education portion of the pre-kindergarten program.

The school hours, and the number of buses and vans by school and by tier, are as follows:

Tier	School	Grades	Hours	Buses	Vans
1	Staples High School	9-12	7:30 a.m. to 2:15 p.m.	21	8
2	Bedford Middle School	6-8	8:00 a.m. to 2:45 p.m.	17	5
	Coleytown Middle School	6-8		14	5
	Saugatuck Elementary School	K-5	Kindergarten is from 8:00 a.m. to 12:45 pm	8	0
	Total Vehicles			39	10
3	Coleytown Elementary School	K-5	8:30 a.m. to 3:15 p.m.	11	6
	Green's Farms Elementary School	K-5		10	2
	Kings Highway Elementary School	K-5	Kindergarten is from 8:30 a.m. to 1:15 p.m.	8	3
	Long Lots Elementary School	K-5		11	2
	Total Vehicles			40	13
	Stepping Stones Pre-School at Coleytown Elementary School	Pre-K	8:30 a.m. to 11:30 a.m. 8:30 a.m. to 1:15 p.m. 8:30 a.m. to 3:15 p.m.		

In the afternoon, and two hours prior to the regular Elementary School dismissal, four buses are used in each of four elementary schools to transport home kindergarten students. The schools are Coleytown Elementary School, Kings Highway Elementary School, Long Lots Elementary School, and Saugatuck Elementary School. Five buses are used for Green's Farm Elementary School. The total is 21 buses, which are for 5½ daily hours each.

Guidelines used for the development of the 2002-2003 transportation program and which must be used for any future changes, include the following:

1. The maximum amount of time a student may be on a bus (or van) is 30-minutes.

2. The earliest time a student may be picked-up is 6:45 a.m.

3. The earliest drop-off time at the High School is 7:15 a.m. At the Middle Schools, the earliest drop-off time is 7:45 a.m. For the Elementary Schools, the earliest drop-off time is 8:20 a.m.

4. In the afternoon, the time the buses can leave at the High School is 2:25 p.m. for a 2:15 p.m. dismissal. The buses are not allowed to leave earlier than 2:55 p.m. at the Middle Schools for a 2:45 p.m. dismissal. There is no proscribed leave time for the Elementary Schools.

5. The latest time an Elementary School student may arrive at home is 4:00 p.m.

6. The practice of the District and the structure of the present transportation program does not provide for the commingling of students in two or more schools that can be on the same tier (ex., Coleytown Elementary School and Coleytown Middle School).

7. With the exception of High School students who live in a limited area on North Avenue between Cross Highway on the north and Long Lots Road on the south all students are eligible for transportation.

In addition to the above, there are a number of safety issues that the District considers in the development of its bus routes. These include the following:

1. There are many areas in the District that have no sidewalks. Because of this, the routes are designed for many door-to-door pick-ups/drop-offs in order to avoid having students walk on the side of the road.

2. Many bus routes are also designed for right hand pick-ups/drop-offs in order to have students avoid crossing the road. This means that on some roads the bus travels on the road both ways.

3. The very heavy traffic in the morning affects the timeliness and how the routes are designed. Reasons for the heavy traffic include the following:

    a. People travel to and from Interstate 95 and the Merit Parkway which transverse the District.

    b. The two train station in the District increase traffic as commuters travel to and from these locations.

4. Many of the roadways in the District have limited sight distances, which impacts the traffic approaching the school buses and bus stops. One of the safety standards in the industry is that the sight distance at a school bus stop should be at least 1,000 feet. The curves, hillcrests, and blind spots on many District roads are factors that reduce the sight distance.

5. On many Elementary School bus routes there are monitors on the bus who assist students with embarkation and disembarkation and stop oncoming traffic.

The above guidelines preclude the more common and frequently successful means to reduce the number of buses to transport students to/from school. These are:

1. Establish an additional tier

2. Increase the time between tiers in order to reduce the number of buses by increasing ridership.

3. Increase the maximum live time from 30 minutes to 35 or 40 minutes.

4. Establish consolidated bus stops to reduce the number of stops on a route and thereby reduce live time.

To provide a transportation system under the guidelines stipulated, the design of the operation of the 2002-2003 program is very tight and looks like the following outline:

Tier 1	Staples H. S.
21 Buses	21 buses

Tier 2	Bedford M. S.	Coleytown M. S.	Saugatuck E. S.
39 Buses	15 buses from the H. S. 2 buses start new in Tier 2	5 buses from the H. S. 9 buses start new in Tier 2	8 buses start new in Tier 2

Tier 3	Coleytown E. S.	Green's Farms E. S.	King's Highway E. S.	Long Lots E. S.
40 Buses	9 buses from Coleytown M. S. 1 bus from Saugatuck E. S. 1 bus starts from Staples H. S. in Tier 1	9 buses from Bedford M. S. 1 bus from Coleytown M. S.	7 buses from Saugatuck E.S. 1 bus from Coleytown M. S.	8 buses from Bedford M. S. 3 buses from Coleytown M. S.

Because of the tight schedule, in the afternoon, two additional buses are added to the High School routes raising the total number of buses to 23. Because the High School buses cannot leave prior to 2:25 p.m., they have only 20 minutes to complete their route and travel to their Tier 2-school in time for student dismissal.

OBSERVATIONS

In the course of the review and the gathering of information, several observations were made about the transportation program, and some of these appeared to impact the operation of the program itself.

1. The most significant factor impacting the operation of the transportation program is the 30 minutes between the tiers and the 30-minute maximum time (live time) a student can be on a bus. These time limitations play an important role in determining the number of buses used. The heavy morning traffic coupled with the time limitation lessens the number of students that can be transported per bus and increases the number of buses required.

   You cannot decrease the number of buses without increasing the length of the ride and the time needed between the tiers. A critical component in the development of a transportation program is the area to be covered as much as the number of students to be transported.

2. A second factor is that it appears that many students do not use the transportation system to and from school. However, the number of buses, the design of the transportation program, and the design of the routes provides for 100% ridership with the exception of those High School students on North Avenue. The stated rationale for this is that the District's Transportation Department doesn't know who plans to ride or not ride the bus at any given time. Functionally, very many of the buses are under utilized even though the assigned number of students per route show them to be at appropriate capacity.

   Appendix C shows the route structure of each school with the number of assigned students, live time of each route, and the number of bus stops.

   There appears to be a number of reasons for the District's transportation program not being used fully.

   a. Many of the High School students drive themselves and others to school. With over 300 spaces allocated for student parking, it can be

estimated that at least 400 students (approximately 30% of the High School enrollment) don't ride the bus. The number is slightly larger in the afternoon with some additional students who ordinarily ride the bus staying after school for club activities and the sports program.

b. The instrumental music program that starts before school at the two Middle Schools has the participating students transported by parents.

c. At the Elementary Schools parents provide transportation to and from school for many students.

In addition to the above, of the 40 route buses, 28 (70%) are 71-passenger and 12 (30%) are 65-passenger. What this means is that the few students who are riding a bus are riding a larger bus, which compounds the perception of the buses being under utilized.

3. The third observation is that information was not readily available as to the number of students who ride the buses throughout the school year. A record was provided of a count of student ridership for four days spread over the last week in May and the first two weeks in June. This ridership count was very low as compared to the number of assigned students per bus. However, it is not known as to whether these low counts are representative of the school year as a whole. A student count was made in the fall of 2002, but this information was not available.

   Since low ridership is a criticism of the transportation program, and the feeling by some people is that the number of buses should reflect the ridership as opposed to the number of assigned students, the District should conduct these ridership counts periodically throughout the school year. This will provide a better perspective of the number of students who ride the bus, how extensively the transportation program is utilized, and whether or not ridership changes during certain times of the year. Again, this information does not exist.

4. Information provided on the number of students assigned to each route, the number of stops made, and the length of the route in time was not reflective of what is taking place. The information reflected the number of students assigned to a route, and, as mentioned above, there was no overall information on ridership. Just as important, route times were not accurate. The District's database showed time determined by the routing software on the basis of assigned students. Therefore, in a 30-minute time period, many routes were traveling in excess of the 30-minutes. Obviously, this is possible only because many stops are not being made due to students not being transported.

Without knowing true route time, it is impossible to know how close to the 30-minutes the routes are traveling or if they can be lengthened to reduce routes and pick-up/drop-off more students.

In addition to gathering information on ridership, it is recommended that the District collect information on the true length of its routes. Presently, the time shown in the District's route database is based upon full ridership. However, less than the number assigned is riding the bus. Therefore, the route time is actually less than what is shown. This is something that should be done several times throughout the school year because route times can vary with changing weather conditions.

5. Efforts are made by the district to place a monitor on each of the Elementary School buses. At each bus stop, they exit the bus with a stop sign, and assist in stopping traffic when students are embarking or disembarking the bus. To some extent, there is some redundancy here. Since most of the routes are designed for right hand pick-ups/ drop-offs, the students are not crossing the road. Therefore, these monitors are not assisting students with road crossings, which is stated as one of the purpose of their assignment. Also, because a monitor is not always available for every Elementary School route, the routes that don't have what is perceived to be this additional layer of safety were not stated as being less safe than those routes that have monitors.

   What the monitors are doing is slowing the operation of the route, but this may be necessary in some circumstances. The use of the monitors compounds the problem of the limited time in which the route can operate. The District should review their use and utilize the limited number of monitors only on the routes where the high volume of traffic and the nature of the roadways create a potential hazard regardless of the right hand pick-ups/drop-offs. Monitors will be used more efficiently and more appropriately.

6. Because payment for the buses used is determined by the highest number in the three tiers, any efforts at reducing the number of buses must be addressed to the tier with the highest number used. For example, in the 2002-2003 school year, the highest number of buses used was in Tier 3 (40 buses). Reducing the number of High School buses in Tier 1 from 21 to a number less than this will not accomplish any cost savings. Therefore, any transportation program change for cost savings purposes must arrange the bus utilization in such a manner that the highest number of buses used in any tier is less than 40 buses.

7. For the number of students assigned to each route and the guidelines required for the transportation program, the routes are designed very tightly. Also, for the structure of the transportation program (which schools are placed in which tier), the number of buses used is appropriate. Again, any plan to reduce the

number of buses will require a change in the transportation program structure and a change in the guidelines.

OPTIONS

The purpose of this study is to examine the existing transportation program structure for efficiency, and if possible, to suggest options that may be more efficient and/or reduce the number of buses required for the service. In any alternate program, the seven guidelines and the safety considerations listed above must be maintained.

Any changes will require a review of the existing transportation program structure and the number as well as the structure of the routes themselves.

Possible Changes in the Transportation Program Structure

Because student transportation is such a visible service, any changes will require a new learning curve of transportation program acceptance by the community with the need of District officials to respond to the concerns raised by some parents as changes in the program structure are implemented. It is for these reasons that transportation programs have to be made carefully and with a full understanding by the community of what is being done and why. Ordinarily, transportation program changes are made due to demographic changes in the school system and/or a restructuring of the school system. The latter includes the opening or closing of a school building and/or grade realignments.

The opening of the Saugatuck Elementary School in September 2002 is an example of an event that required a change in the transportation program structure. By reassigning some of the schools to a different tier, the District was able to reduce the number of buses from 47 to 40. The present plan for the 2003-2004 is to reduce the number of buses further, namely, from 40 to 36.

There are five options listed below. The first option (Plan A) is to keep the existing program intact and not generate the possible savings. The second option (Plan B) is what is presently planned for the 2003-2004 school year. Plans C to F are additional options for changes to the existing transportation structure with Plans C to E being variations of Plan B.

A non-traditional structure is shown in Plan F as an example of what can be done if the school start/end times are arranged differently, namely, the High School is placed in Tier 3 with one Elementary School, two Elementary Schools and one Middle School are in Tier 2, and one Middle School and two Elementary Schools are in Tier 1. Transportation programs such as Plan F should be considered only as part of an overall discussion of how the District in its entirety should be structured as well as what the District feels is the most appropriate instructional time of the day for students of different age groups.

Plan A of the Transportation Program Structure

Stated above is that the first option is a continuation of the existing transportation program structure. It works, and the community knows it.

An advantage is that for the most part, community members are acclimated to this route structure. Any individual issues dealing with the transportation program structure or routes have been resolved or accepted.

A disadvantage is that the transportation program remains static and does not reflect changing needs. Specifically, these include the need to see if the transportation program can be designed for greater cost effectiveness. This plan doesn't offer the cost savings that the other plans provide.

Plan B of the Transportation Program Structure

A second option is to change the hours and the tier of some of the schools. Coleytown Middle School is changed from Tier 2 to Tier 1, and Coleytown Elementary School is changed from Tier 3 to Tier 2. The overall design would look like the chart below.

This is the plan that is presently proposed for the 2003-2004 school year.

Tier	School	Grades	Hours	Buses	Vans
1	Staples High School	9-12	7:30 a.m. to 2:15 p.m.	21	8
	Coleytown Middle School	6-8		14	5
	Total Vehicles in Tier 1			35	13
2	Bedford Middle School	6-8	8:00 a.m. to 2:45 p.m.	17	5
	Coleytown Elementary School	K-5		11	6
	Saugatuck Elementary School	K-5	Kindergarten is from 8:00 a.m. to 12:45 pm	8	0
	Total Vehicles in Tier 2			36	11
3	Green's Farms Elementary School	K-5	8:30 a.m. to 3:15 p.m.	10	2
	Kings Highway Elementary School	K-5		8	3
	Long Lots Elementary School	K-5	Kindergarten is from 8:30 a.m. to 1:15 p.m.	11	2
	Total Vehicles in Tier 3			29	7
	Stepping Stones Pre-School at Coleytown Elementary School	Pre-K	8:30 a.m. to 11:30 a.m. 8:30 a.m. to 1:15 p.m. 8:30 a.m. to 3:15 p.m.		

The outline of this plan is shown below.

Tier 1	Staples H. S.	Coleytown M. S.
35 Buses	21 buses	14 buses

Tier 2	Bedford M. S.	Saugatuck E. S.	Coleytown E. S.
36 Buses	16 buses from the H. S. 1 bus starts new in Tier 2	5 buses from the H. S. 3 buses from Coleytown M. S.	11 buses from Coleytown M. S.

Tier 3	Green's Farms E. S.	Kings Highway E. S.	Long Lots E. S.
29 Buses	10 buses from Bedford M. S.	8 buses from Saugatuck E.S.	11 buses from Coleytown E. S.

The advantage of the above is that it reduces the number of buses from 40 to 36, a savings of four buses. Also, the number of buses and vans assigned to each school remains the same. Therefore, there is no diminution of the number of routes.

A disadvantage is that only one bus is available to start earlier for a Tier 2 route since Tier 2 has only one route more than Tier 1. This compares unfavorably with the present structure (Plan A) which has 18 buses available to start earlier for Tier 2 routes. In addition, there is allowance for only one extra bus at the High School in the afternoon as opposed to the present two extra buses (Plan A). This makes traveling time and the arrival time at the Tier 2 schools tighter in the afternoon.

The probability of late morning arrivals in Tier 2 schools is increased unless the morning pick-up time of 6:45 a.m. and the 7: 15 a.m. drop-off time is changed to an earlier time. The availability of many buses to provide the Tier 2 service has been reduced because all of these buses are being used in Tier 1.

Another disadvantage is that Saugatuck Elementary School, which is a Tier 2 school in this plan and in Plan A, will not have its buses operate as timely as exists in Plan A. This is because its buses will now operate from Tier 1 schools as opposed to being able to operate early due to not having any Tier 1 schools.

A third disadvantage is that Middle School is starting early. While this is not a transportation issue, it appears to have generated some concerns in the community, and these concerns are impacting the transportation program as a whole.

Plan C of the Transportation Program Structure

A third option is a different change of the hours and the tiers of some of the schools. Coleytown Middle School is changed from Tier 2 to Tier 1, and Green's Farms Elementary School is changed from Tier 3 to Tier 2. The overall design would look like the chart below.

Tier	School	Grades	Hours	Buses	Vans
1	Staples High School	9-12	7:30 a.m. to 2:15 p.m.	21	8
	Coleytown Middle School	6-8		14	5
	Total Vehicles			35	13
2	Bedford Middle School	6-8	8:00 a.m. to 2:45 p.m.	17	5
	Green's Farms Elementary School	K-5		10	2
	Saugatuck Elementary School	K-5	Kindergarten is from 8:00 a.m. to 12:45 pm	8	0
	Total Vehicles			35	7
3	Coleytown Elementary School	K-5	8:30 a.m. to 3:15 p.m.	11	6
	Kings Highway Elementary School	K-5		8	3
	Long Lots Elementary School	K-5	Kindergarten is from 8:30 a.m. to 1:15 p.m.	11	2
	Total Vehicles			30	11
	Stepping Stones Pre-School at Coleytown Elementary School	Pre-K	8:30 a.m. to 11:30 a.m. 8:30 a.m. to 1:15 p.m. 8:30 a.m. to 3:15 p.m.		

The outline of this plan is shown below.

Tier 1	Staples H. S.	Coleytown M. S.
35 Buses	21 buses	14 buses

Tier 2	Bedford M. S.	Green's Farms E. S.	Saugatuck E. S.
35 Buses	17 buses from the H. S.	4 buses from the H. S. 6 buses from Coleytown M. S.	8 buses from Coleytown M. S.

Tier 3	Long Lots E. S.	Coleytown E. S.	Kings Highway E. S.
35 Buses	11 buses from Bedford M. S.	6 buses from Bedford M.S. 5 buses from Green's Farms E.S.	8 buses from Saugatuck E. S.

The advantage of the above is that it reduces the number of buses from 40 to 35, a savings of five buses. Like Plan B, the number of buses and vans assigned to each school remains the same. Again, there is no diminution of the number of routes.

A disadvantage is that there are no extra buses to start earlier for a Tier 2 route. In addition, there is no allowance for an extra bus at the High School in the afternoon as opposed to the present two extra buses (Plan A). This makes traveling time and the arrival time at the Tier 2 schools tighter than that which will exist in Plan B.

Another disadvantage is that unlike Plan B, 11 out of the 14 buses that drop-off students at Coleytown Middle School in Tier 1 are not available to transport students to Coleytown Elementary School. This is because the Middle School is a Tier 1 school and the Elementary School is a Tier 3 school. It is highly desirable to have the same buses

picking-up/dropping-off students in the same general area from one tier to another. It's more efficient and timelier.

A third disadvantage is that six buses from Coleytown Middle School must cross through the Long Lots Elementary School attendance area to transport students to Green's Farms Elementary School. Given the time constraints between the tiers, there is probably an insufficient amount of time to do this effectively and efficiently.

The reverse of the above exists as a fourth disadvantage. Five buses from the Green's Farms Elementary School attendance area must cross through the Long Lots Elementary School attendance area to transport students to the Coleytown Elementary School.

Plan D of the Transportation Program Structure

A fourth option continues the concept of changing the hours and tiers of some of the schools. Coleytown Elementary School is changed from Tier 2 to Tier 3, and Kings Highway Elementary School is changed from Tier 3 to Tier 2. The program design is shown below.

Tier	School	Grades	Hours	Buses	Vans
1	Staples High School	9-12	7:30 a.m. to 2:15 p.m.	21	8
	Coleytown Middle School	6-8		14	5
	Total Vehicles			35	13
2	Bedford Middle School	6-8	8:00 a.m. to 2:45 p.m.	17	5
	Kings Highway Elementary School	K-5		8	3
	Saugatuck Elementary School	K-5	Kindergarten is from 8:00 a.m. to 12:45 pm	8	0
	Total Vehicles			33	8
3	Coleytown Elementary School	K-5	8:30 a.m. to 3:15 p.m.	11	6
	Green's Farms Elementary School	K-5		10	2
	Long Lots Elementary School	K-5	Kindergarten is from 8:30 a.m. to 1:15 p.m.	11	2
	Total Vehicles			32	9
	Stepping Stones Pre-School at Coleytown Elementary School	Pre-K	8:30 a.m. to 11:30 a.m. 8:30 a.m. to 1:15 p.m. 8:30 a.m. to 3:15 p.m.		

The outline of this plan is shown below.

Tier 1	Staples H. S.	Coleytown M. S.
35 Buses	21 buses	14 buses

Tier 2	Bedford M. S.	Kings Highway E. S.	Saugatuck E. S.
33 Buses	17 buses from the H. S.	4 buses from the H. S. 4 buses from Coleytown M. S.	8 buses from Coleytown M. S.

Tier 3	Long Lots E. S.	Coleytown E. S.	Green's Farms E. S.
32 Buses	11 buses from Bedford M. S.	6 buses from Bedford M.S. 2 buses from Coleytown M.S. (Tier1) 3 buses from Kings Highway E.S.	8 buses from Saugatuck E. S. 2 bus from Kings Highway E.S.

Like Plan C, the Advantage of Plan D is that it reduces the number of buses from 40 to 35, a savings of five buses. The number of buses assigned to each school remains the same, which makes it similar to the previous three plans. As a result of this, there is no diminution of the number of routes.

Also, like Plan C, a disadvantage is that there are no extra buses to start earlier for a Tier 2 route. Again, there is no allowance for an extra bus at the High School in the afternoon as opposed to the present two extra buses. Traveling time and the arrival time at the Tier 2 schools will probably be very tight in the afternoon.

The two buses from Kings Highway Elementary School and the eight buses from Saugatuck Elementary School will have time difficulties traveling to the Green's Farms Elementary School.

Plan E of the Transportation Program Structure

This is a deviation of Plan B, The Bedford Middle School is in Tier 1 with the High School in lieu of the Coleytown Middle School. The program design is shown below.

Tier	School	Grades	Hours	Buses	Vans
1	Staples High School	9-12	7:30 a.m. to 2:15 p.m.	21	8
	Bedford Middle School	6-8		17	5
	Total Vehicles			38	13
2	Coleytown Middle School	6-8	8:00 a.m. to 2:45 p.m.	14	5
	Long Lots Elementary School	K-5		11	2
	Saugatuck Elementary School	K-5	Kindergarten is from 8:00 a.m. to 12:45 pm	8	0
	Total Vehicles			33	7
3	Coleytown Elementary School	K-5	8:30 a.m. to 3:15 p.m.	11	6
	Green's Farms Elementary School	K-5		10	2
	Kings Highway Elementary School	K-5	Kindergarten is from 8:30 a.m. to 1:15 p.m.	8	3
	Total Vehicles			29	11
	Stepping Stones Pre-School at Coleytown Elementary School	Pre-K	8:30 a.m. to 11:30 a.m. 8:30 a.m. to 1:15 p.m. 8:30 a.m. to 3:15 p.m.		

The outline of this plan is shown below.

Tier 1	Staples H. S.	Bedford M. S.
38 Buses	21 buses	17 buses

Tier 2	Coleytown M. S.	Long Lots E. S.	Saugatuck E. S.
33 Buses	9 buses from the H. S. 5 buses from Bedford M. S.	11 buses from Bedford M. S.	1 bus from Bedford M. S. 7 buses from the H. S.

Tier 3	Coleytown E. S.	Green's Farms E. S.	Kings Highway E. S.
29 Buses	11 buses from Coleytown M. S.	10 buses Long Lots E. S.	3 buses Saugatuck E. S. 5 buses from Tier 1

The above reduces the number of buses from 40 to 38, a savings of two buses. The number of buses assigned to each school remains the same, which makes it similar to the previous four plans. As a result, there is no change in the number of routes.

One of the disadvantages is similar to the concerns raised by the placement of the Coleytown Middle School in Tier 1, namely, that a Middle School is starting early.

Plan F of the Transportation Program Structure

As mentioned in the first part of this section of this report, this is a non-traditional structure of school start and end times, and it is designed to show what can be done if the District wishes to consider the establishment of its school time structure differently. Tier 1 and Tier 2 each consist of two Elementary Schools and one Middle School. The High School and one Elementary School are in Tier 3. The program design is shown below.

Tier	School	Grades	Hours	Buses	Vans
1	Bedford Middle School	6-8	7:30 a.m. to 2:15 p.m.	17	5
	Coleytown Elementary School	K-5		11	6
	Kings Highway Elementary School	K-5	Kindergarten is from 7:30 a.m. to 12:15 p.m.	8	3
	Total Vehicles			36	14
2	Coleytown Middle School	6-8	8:00 a.m. to 2:45 p.m.	14	5
	Green's Farms Elementary School	K-5		10	2
	Saugatuck Elementary School	K-5	Kindergarten is from 8:00 a.m. to 12:45 pm	8	0
	Total Vehicles			32	7
3	Staples High School	9-12	8:30 a.m. to 3:15 p.m.	21	8
	Long Lots Elementary School	K-5	Kindergarten is from 8:30 a.m. to 1:45 pm	11	2
	Total Vehicles			32	10

Tier	School	Grades	Hours	Buses	Vans
	Stepping Stones Pre-School at Coleytown Elementary School	Pre-K	8:30 a.m. to 11:30 a.m. 8:30 a.m. to 1:15 p.m. 8:30 a.m. to 3:15 p.m.		

An outline of this plan is shown below.

Tier 1	Bedford M. S.	Coleytown E. S.	Kings Highway E.S.
36 Buses	17 buses	11 buses	8 buses

Tier 2	Saugatuck E. S.	Coleytown M. S.	Green's Farms E. S.
32 Buses	4 buses from Bedford M. S. 4 buses from Kings Highway E. S.	11 buses from Coleytown E.S. 3 buses from Bedford M. S.	6 buses from Bedford M. S. 4 buses from Kings Highway E. S.

Tier 3	Long Lots E. S.	Staples H. S.
32 Buses	10 buses from Green's Farms E.S. 1 bus from Saugatuck E. S.	4 buses from Bedford M. S. (Tier 1) 7 buses from Saugatuck E.S. 10 buses from Coleytown M. S.

An advantage of this plan is that it reduces the number of buses from 40 to 36, a reduction of four buses. The number of buses and vans assigned to each school does not change. However, the number of vans is increased from 13 to 14, which will offset some of the savings on the reduced number of buses.

Four buses are able to begin their transportation program to the High School during Tier 2 time. These same four extra buses are available in the afternoon to transport home High School students in a timely manner. In the afternoon, this is an increase over the present system, which provides for only two extra buses.

Again, a disadvantage is that the structure is non-traditional in terms of the history of the school system. It will require greater study and discussion in terms of what is the best time of the day for the instruction of pupils of specific age groups. Also, there will probably be many community issues that will have to be reviewed and discussed as part of any implementation of this type of a schedule or a similar one.

Because the Elementary Schools are spread over three tiers with the concentration being in the first two tiers, some people may see this as a disadvantage from an educational perspective.

Possible Changes in the Structure and the Number of Routes

Plan 1 of the Structure and Number of Routes

Like Plan A of the transportation program structure, the first option is a continuation of what exists. Again, it works, the community knows it, and many issues involving the structure and number of routes have been resolved throughout the past school year.

As was also mentioned, a disadvantage is that given the wish to reduce the number of buses used, it may not be the most appropriate program and route structure for the District at this time.

Plan 2-a of the Structure and Number of Routes

Under this plan, the number of Middle School and Elementary School routes in each of the schools is reduced by one. This is possible because of the reduced ridership. However, since there is no readily available documentation of actual ridership completed at different time periods over the past school year, a conservative estimate is made that the ridership is no more than 90% of the enrollment. Most likely, the High School ridership will be well below the 90% ridership being used.

Using the present number of buses, the average assigned number of students is as follows:

School	Projected 2003-2004 Enrollment	Number of Buses	Average Students Per Bus
Bedford Middle School	761	17	44.8
Coleytown Elementary School	465	11	42.3
Coleytown Middle School	492	14	35.1
Green's Farms Elementary School	545	10	54.5
Kings Highway Elementary School	469	8	58.6
Long Lots Elementary School	591	11	53.7
Saugatuck Elementary School	485	8	60.1
Staples High School	1,418	21	67.5
	5,226		

Using the 90% ridership guideline for the projected enrollment for the 2003-2004 school year, the ridership and the number of buses required would be as follows:

School	Projected 2003-2004 Enrollment	90% of 2003-2004 Enrollment	Number of Buses	Average Students Per Bus
Bedford Middle School	761	685	16	42.8
Coleytown Elementary School	465	419	10	41.9
Coleytown Middle School	492	443	13	34.1
Green's Farms Elementary School	545	491	9	54.6
Kings Highway Elementary School	469	422	7	60.3
Long Lots Elementary School	591	532	10	53.2

School	Projected 2003-2004 Enrollment	90% of 2003-2004 Enrollment	Number of Buses	Average Students Per Bus
Saugatuck Elementary School	485	437	7	62.4
Staples High School	1,418	1,276	21	67.5
	5,226	4,705		

Note that with the reduced number of assigned students and the reduction in the number of buses, the average number of students on a bus remains relatively the same as when the transportation program structure provides for 100% student ridership.
The reader is reminded that the above represents an average of the number of students on a bus. Actual ridership may vary depending upon the number of students being transported and the area in which the bus is picking-up/dropping-off students.

The number of buses for the High School has not been reduced because the limited amount of time to cover the District as a whole is more critical than the number of students riding the bus. Whether or not a bus can be reduced even though this school has a larges area to be covered will require more rerouting than will be required for the other seven schools.

Basing the number of buses needed on the basis of 90% of enrollment, with the exception of the High School, will require the following number of buses in each of the plans presented in the **OPTIONS** section of this report.

Plan	Number of Buses Needed When Using Full Enrollment as the Number of Assigned Students for Transportation	Number of Buses Needed When Using 90% of Enrollment as the Number of Assigned Students for Transportation	Change in the Number of buses
Plan A	40	36	4
Plan B	36	33	3
Plan C	35	32	3
Plan D	35	34	1
Plan E	38	37	1
Plan F	36	33	3

Again, since the buses will be covering the same geographic area for each school, more time will be needed due to the reduction in the number of buses even though the number of students to be picked-up/dropped-off will be less. Also, this will require rerouting of the transportation program. To accomplish the latter will require several months of work. Therefore, if the District wishes to reduce the number of routes as a cost savings and for route efficiency, this decision should be made in the early fall.

The reduction in the number of buses would also be a response to the criticism that the buses are underutilized. While this criticism has not been appropriately documented through student ridership counts throughout the school year, the general perception shared with the **TAS** Project Consultant by people with whom he met, is that there is some validity in the criticism.

An example of the extra time that is needed for the operation of the routes is as follows:

Tier	Existing School Time Structure	Change in School Time Structure	Comments
Tier1	7:30 a.m. to 2:15 p.m.	7:30 a.m. to 2:15 p.m.	Increase time between Tier 1 and Tier 2 by 5 minutes.
Tier 2	8:00 a.m. to 2:45 p.m.	8:05 a.m. to 2:50 p.m.	
Tier 3	8:30 a.m. to 3:15 p.m.*	8:45 a.m. to 3:30 p.m.**	Increase time between Tier 2 and Tier 3 by 10 minutes.
	* Students arrive home by 4:00 p.m.	** Students arrive home by 4:15 p.m.	

Plan 2-b of the Structure and Number of Routes

In addition to the above, the District should review the possibility of gaining additional time for transportation purposes by reducing the morning drop-off time at the schools from 15 minutes before the start of school for the High School and the Middle Schools and 10 minutes for the Elementary schools to something a little less. Also, in the afternoon, there is a 10-minute wait time at the High School and the Middle Schools. The District should review the possibility of reducing this wait time by a minute or three.

This suggestion is presented as something parallel to reducing the number of routes (and buses) through the use of a percentage of enrollments. It can be part of the reduction of the number of routes to gain more route time, or, if the District feels the existing school drop-off and school leave times are very important, it can be omitted. This is why Plan 2 is divided into two parts. However, the recommendation is that it be reviewed.

CONCLUSIONS AND RECOMMENDATIONS

The District's allocation of time (30 minutes) for the transportation of students is artificial and unrealistic in terms of the traffic conditions, the type of roads on which the buses are traveling, and the use of very many right hand pick-ups/drop-offs. The latter is a District requirement for what it feels is appropriate for safety purposes. The **TAS** Project Consultant cannot comment as to whether this requirement is appropriate on every route and in every situation in which it exists. This type of safety review was not part of this project. However, it can be said that the 30-minutes between the tiers is what is determining the number of buses being used. This 30-minute time period is the single most important reason why the number of buses is high. They cannot be used effectively and efficiently due to the time constraints.

There is an insufficient amount of time to complete the transportation program with the appropriate number of buses. An examination of Appendix C, which shows the time each route is operating, will show that some routes have a time in excess of 30 minutes. This is because the buses are shown to be transporting all assigned students. It is the use of partially filled buses, which by definition do not pick-up/drop-off the number of students assigned to the route that is making the 30-minute route time operable.

The District has what can be considered a square circle, in other words, a contradiction. The wish is to reduce the number of buses for a cost savings and for more efficient

utilization, but it has a transportation program structure that is inherently unrealistic and inefficient in terms of the time allotted for the operation of the routes. It is an important cause of the high cost.

In addition, or in lieu of changing the assignment of schools from one tier to another, if the wish is to reduce the number of buses and/or utilize the buses better, the District should also examine carefully the option of utilizing a factor of ridership as opposed to school enrollment. The 90% figure given is artificial and is for illustrative purposes only. Based upon the District's own knowledge of the number of students who ride the buses, it can be higher or lower.

The District should keep in mind that as it reduces the number of buses (and routes), the routes would become longer which will require more time between tiers. Furthermore, in a three-tier system, there can also a spread of time in which the school(s) in the first tier start too early and/or the school(s) in the third tier end too late. Therefore, there has to be a balance of time and how many buses the District wishes to use.

The recommendation is as follows:

1. At least five times throughout the school year the District should take a count of the number of students who ride the buses. The count should be taken over a three-day period with the average being the ridership number.

   This information can validate objectively the low ridership, and it can be useful in determining the number as well as the route structures.

2. The number of non-riders for specific reasons should be known. This includes the number of High School students who drive themselves to/from school, and the number, as well, as the length of the Middle School morning instrumental music program.

   For the High School students, the District can arrive at a good approximate number by knowing the number of parking spaces allocated to students and multiplying that number by a factor that includes the driver and a friend or sibling.

   Information on the Middle School instrumental music program can easily be attained from each of the two schools. Needed is when the program begins/ends and the number of participating students. This will provide a solid number of students who don't ride the bus.

3. The District should give very careful consideration to reducing the number of buses which will require extending the time between the tiers. This will require good planning and rerouting as well as the time to accomplish this. The present routes are primarily historical with adjustments made to

accommodate new entrants and the movement of students from one school (and tier) to another.

A reduction of one bus from seven schools (excludes the High School) is realistic.

Are the existing routes appropriate and efficient? The answer is "Yes" only if you are transporting every student in the District. They're well designed, tight, and reflect the safety and timeliness considerations the District established. Since the District is not transporting every assigned student, the realistic answer is "No." Again, the inefficient use of the number of buses is because of the 30 minutes between the tiers.

Can the transportation program structure be changed to utilize less than 36 buses or a number of buses between 36 and 40? This is answered in each of the Plans with the advantages and disadvantages of each plan. When you reduce buses and keep the same 30 minutes between tiers, you may save money, but you create other types of problems, some which are stated.

Prior to any substantial changes in the structure of the transportation program, the District should review other issues. These have been mention in other parts of this report and include school start/end times. These are not transportation issues. They are issues that deal with the educational philosophy and structure of the District as a whole as well as the wishes of the community. If the latest home arrival is to be 4:00 p.m., the tiers are not to have more than 30 minutes between them, and the morning student release time from the buses as well as the afternoon bus departure time are to remain as they are presently, then transportation efficiency will be reduced.

A *Caveat*

The above report, observations, conclusions, and recommendations are based solely on the transportation program. What the District feels is the appropriate time for the operation of its schools, community wishes, and community perceptions were not included in this review. Obviously, the transportation program is determined in very large part by the District's educational program. The inclusion of these factors was not made because that was not the scope of this study. The focus was to review only the transportation program structure, provide options, and state what are the advantages/disadvantages of each of the options.

APPENDIX A

WESPORT PUBLIC SCHOOL

2002-2003 Transportation Program Structure

Item No.	Route No.	Bus No.	Student Capacity	Tier 1		Tier 2		Tier 3		Comments
				School	Assigned Students	School	Assigned Students	School	Assigned Students	
1	1	2111	71	SHS	71	BMS	52	LLS	53	
2	2	2201	71	SHS	42			CES	53	
3	3	1756	65			SES	52	KHS	59	
4	4	1395	65			SES	70	KHS	68	
5	5	1394	65	SHS	35	BMS	43	GF	42	
6	6	2202	71	SHS	65	BMS	60	LLS	43	
7	7	1754	65	SHS	66	BMS	58	GF	41	
8	8	2202	71	SHS	40	BMS	30	GF	47	
9	9	2123	71	SHS	60	CMS	34	CES	50	
10	11	2112	71	SHSpm		BMS	29	GF	58	
11	12	1755	65	SHS	53	CMS	37	LLS	44	
12	14	1757	65	SHS	68	BMS	50	LLS	32	
13	15	2121	71			CMS	30	CES	32	
14	16	2204	71			SES	58	KHS	53	
15	17	2114	71			SES	63	CES	41	
16	18	1396	65			SES	51	KHS	34	
17	19	2205	71	SHS	52	BMS	41	LLS	58	
18	20	2206	71	SHS	46	BMS	37	GF	62	
19	21	2008	71	SHS	63	BMS	22	LLS	63	
20	22	2115	71	SHS	70	BMS	28	GF	47	
21	26	1753	65	SHS	76	BMS	37	LLS	49	
22	31	1800	71	SHS	47	BMS	40	GF	55	
23	32	2125	71	SHS	58	BMS	46	LLS	38	
24	33	2116	71			SES	61	KHS	40	
25	34	1801	71			CMS	33	KHS	54	
26	35	1802	71			BMS	56	LLS	51	
27	36	2113	71	SHSpm		CMS	22	CES	40	
28	37	2209	71	SHS	53	BMS	29	GF	49	
29	39	2118	71			CMS	15	CES	45	
30	41	916	65			CMS	31	CES	42	
31	42	917	65	SHS	69	CMS	24	GF	36	
32	43	918	65			CMS	26	LLS	61	
33	44	2126	71			SES	65	KHS	56	
34	45	2119	71	SHS	21	CMS	32	CES	31	
35	46	2119	71			SES	57	KHS	45	
36	47	2120	71	SHS	55	BMS	47	GF	58	
37	48	1758	65			CMS	42	LLS	70	
38	49	2117	71	SHS	55	CMS	27	CES	26	
39	52	2122	71			CMS	35	CES	49	
40	53	2210	71			CMS	29	CES	44	
	Total				1,165		1,599		1,919	
Information provided by the Westport Public Schools' Transportation Department										

2002-2003 Transportation Program Structure – Van Utilization

Item No.	Route No.	Van No.	Student Capacity	Tier 1 School	Tier 1 Assigned Students	Tier 2 School	Tier 2 Assigned Students	Tier 3 School	Tier 3 Assigned Students	Comments
1	30	2059	9 + 2 WC	SHSs	6			CESs	5	
2	40	1702	20	SHSs	1	BMS	9	GF	20	
3	50	1700	20					GF	10	
4	70	2053	16	SHS	16	CMS	17	CESs	4	
5	80	1701	20	SHS	16	CMSs	1	KHS	16	
6	100	2056	16	SHS	15	CMS	12	CES	13	
7	110	2250	19			CMS	13	KHS	12	
8	120	1704	20	SHS	3	BMS	20	CESs	5	
9	130	2251	19	SHSs	2	BMS	18	CES	8	
10	150	1703	20	SHS	25	CMS	11	KHS	19	
11	160	2060	9 + 2 WC			BMSs	3	CESs	5	
12	170	2062	16					LLS	10	
13	180	2057	16					LLS	23	
14	190	2002	19					Pre-K	3	
15	200	2061	16			BMS	5	Pre-K	3	
	Total				84		109		150	Excludes Pre-K

S = Special education transportation service
Information provided by Westport Public Schools' Transportation Department

2002-2003 Transportation Program Structure - School Enrollment and Assigned Ridership Summary

School		Grades	Enrollment 10/01/02 (1)	Assigned Students 05/03 Buses	Assigned Students 05/03 Vans	Total	Comments
SHS	Staples High School	9-12	1,280 (1)	1,165	84	1,249	
BMS	Bedford Middle School	6-8	747 (2)	705	55	760	
CMS	Coleytown Middle School	6-8	474 (2)	417	54	471	
SES	Saugatuck Elementary School	K-5	469	477	0	477	
CES	Coleytown Elementary School	PK-5	502	453	40	493	
GF	Green's Farms Elementary School	K-5	547	495	30	525	
KHS	Kings Highway Elementary School	K-5	457	409	47	456	
LLS	Long Lots Elementary School	K-5	610	562	33	595	
Total		K-12	5,086	4,683	343	5,026	Excludes pre-kindergarten

(1) Enrollment includes 64 non-residents who are not transported by the District. These include 43 students from the Bridgeport Choice Program, 12 tuition students, and nine special education students from other school systems.

(2) Ridership decreases in the afternoon due to the co-curricular activity program. The morning instrumental music program (before the regular school session) in the Middle Schools also decreases ridership.

Information provided by Westport Public Schools' Transportation Department

APPENDIX B

WESTPORT PUBLIC SCHOOLS

2002-2003 Fleet Description

Item No	Bus No	Year	Student Capacity	Body	Chassis	Route No
1	916	1999	65	AmTran	International	41
2	917	1999	65	AmTran	International	42
3	918	1999	65	AmTran	International	43
4	978	1990	65	Thomas MVP	Thomas	Spare
5	985	1990	65	Thomas MVP	Thomas	Spare
6	986	1990	65	Thomas MVP	Thomas	Spare
7	989	1990	65	Thomas MVP	Thomas	Spare
8	1394	1993	65	Thomas MVP	Thomas	5
9	1395	1993	65	Thomas MVP	Thomas	4
10	1396	1993	65	Thomas MVP	Thomas	18
11	1753	1997	65	AmTran	International	26
12	1754	1997	65	AmTran	International	7
13	1755	1997	65	AmTran	International	12
14	1756	1997	65	AmTran	International	3
15	1757	1997	65	AmTran	International	14
16	1758	1997	65	AmTran	International	48
17	1800	1998	71	AmTran	International	31
18	1801	1998	71	AmTran	International	34
19	1802	1998	71	AmTran	International	35
20	2110	2001	71	AmTran	International	46
21	2111	2001	71	AmTran	International	1
22	2112	2001	71	AmTran	International	11
23	2113	2001	71	AmTran	International	36
24	2114	2001	71	AmTran	International	17
25	2115	2001	71	AmTran	International	22
26	2116	2001	71	AmTran	International	33
27	2117	2001	71	AmTran	International	49
28	2118	2001	71	AmTran	International	39
29	2119	2001	71	AmTran	International	45
30	2120	2001	71	AmTran	International	47
31	2121	2001	71	AmTran	International	15
32	2122	2001	71	AmTran	International	52
33	2123	2001	71	AmTran	International	9
34	2125	2001	71	AmTran	International	32
35	2126	2001	71	AmTran	International	44
36	2201	2002	71	AmTran	International	2
37	2202	2002	71	AmTran	International	6
38	2203	2002	71	AmTran	International	8
39	2204	2002	71	AmTran	International	16
40	2205	2002	71	AmTran	International	19
41	2206	2002	71	AmTran	International	20
42	2208	2002	71	AmTran	International	21
43	2209	2002	71	AmTran	International	37
44	2210	2002	71	AmTran	International	53

Average age of buses is 4.23 years (186 years/44 buses).

Item No.	Van No.	Year	Student Capacity	Body	Chassis	Route No.
1	1700	1997	20	Mid Bus	Chevrolet	50
2	1701	1997	20	Mid Bus	Chevrolet	80
3	1702	1997	20	Mid Bus	Chevrolet	40
4	1703	1997	20	Mid Bus	Chevrolet	150
5	1704	1997	20	Mid Bus	Chevrolet	120
6	2063	2000	16	Corbeil	Ford	70
7	2002	2000	19	Corbeil	Ford	90
8	2056	2000	16	Corbeil	Ford	100
9	2057	2000	16	Corbeil	Ford	180
10	2059	2000	9 + 2 WC	Corbeil	Ford	30
11	2060	2000	9 + 2 WC	Corbeil	Ford	160
12	2061	2000	16	Corbeil	Ford	200
13	2062	2000	16	Corbeil	Ford	170
14	2250	2002	19	Corbeil	Ford	110
15	2251	2002	19	Corbeil	Ford	130
16	2058	2000	16	Corbeil	Ford	Spare
17	2064	2000	16	Corbeil	Ford	Spare

All of the above information has been provided by the Westport Public Schools' Transportation Department.

Average age of vans is 3.64 years (62 years/17 vans).

Average age of total fleet is 4.07 years (248 years/61 vehicles).

Average age of route vehicles is 3.45 years (190 years/55 vehicles).

Fleet Profile:

Student Capacity	71	65	20	19	16	9 + 2 WC	Total	%age
2002	9			2			11	18.0
2001	16						16	26.2
2000				1	7	2	10	16.4
1999		3					3	04.9
1998	3						3	04.9
1997		6	5				11	18.0
1993		3					3	04.9
1990		4					4	06.6
Total	28	16	5	3	7	2	61	
%age	45.9	26.2	08.2	04.9	11.5	03.3		

APPENDIX C

WESTPORT PUBLIC SCHOOLS

2002-2003 Route Structure

Item No	Route No.	Bus No.	Student Capacity	Tier 1				Tier 2				Tier 3			
				School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops
1	1	2111	71	SHS	71	36	25	BMS	52	24	22	LLS	53	23	18
2	2	2201	71	SHS	42	32	15					CES	53	28	23
3	3	1756	65					SES	52	19	13	KHS	59	30	22
4	4	1395	65					SES	70	30	20	KHS	68	26	23
5	5	1394	65	SHS	35	35	18	BMS	43	35	18	GF	42	25	12
6	6	2202	71	SHS	65	25	15	BMS	60	29	27	LLS	43	27	17
7	7	1754	65	SHS	66	33	18	BMS	58	32	29	GF	41	24	21
8	8	2202	71	SHS	40	40	20	BMS	30	28	14	GF	47	21	19
9	9	2123	71	SHS	60	33	23	CMS	34	24	17	CES	50	25	22
10	11	2112	71	SHSpm	Drop-off is part of Route 31			BMS	29	32	29	GF	58	18	20
11	12	1755	65	SHS	53	38	27	CMS	37	29	17	LLS	44	24	18
12	14	1757	65	SHS	68	26	17	BMS	50	22	15	LLS	32	17	17
13	15	2121	71					CMS	30	39	17	CES	32	20	18
14	16	2204	71					SES	58	23	15	KHS	53	34	23
15	17	2114	71					SES	63	26	18	CES	41	22	14
16	18	1396	65					SES	51	23	18	KHS	34	28	13
17	19	2205	71	SHS	52	27	14	BMS	41	28	17	LLS	58	14	8
18	20	2206	71	SHS	46	36	25	BMS	37	24	8	GF	62	18	20
19	21	2008	71	SHS	63	33	22	BMS	22	26	12	LLS	63	24	25
20	22	2115	71	SHS	70	32	21	BMS	28	24	15	GF	47	31	18
21	26	1753	65	SHS	76	31	17	BMS	37	28	20	LLS	49	29	17
22	31	1800	71	SHS	47	35	20	BMS	40	27	22	GF	55	20	17
23	32	2125	71	SHS	58	29	14	BMS	46	22	15	LLS	38	21	17
24	33	2116	71					SES	61	35	23	KHS	40	20	14
25	34	1801	71					CMS	33	37	23	KHS	54	31	28
26	35	1802	71					BMS	56	36	19	LLS	51	15	13
27	36	2113	71	SHSpm	Drop-off is part of Route 12			CMS	22	26	22	CES	40	23	18
28	37	2209	71	SHS	53	35	15	BMS	29	28	17	GF	49	21	12

Item No	Route No	Bus No	Student Capacity	Tier 1				Tier 2				Tier 3			
				School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops
29	39	2118	71					CMS	15	40	9	CES	45	27	25
30	41	916	65					CMS	31	38	16	CES	42	19	15
31	42	917	65	SHS	69	33	18	CMS	24	30	14	GF	36	20	9
32	43	918	65					CMS	26	30	16	LLS	61	26	19
33	44	2126	71					SES	65	25	20	KHS	56	33	22
34	45	2119	71	SHS	21	22	8	CMS	32	23	12	CES	31	21	11
35	46	2119	71					SES	57	32	23	KHS	45	21	18
36	47	2120	71	SHS	55	24	19	BMS	47	28	19	GF	58	26	26
37	48	1758	65					CMS	42	30	19	LLS	70	24	22
38	49	2117	71	SHS	55	35	19	CMS	27	22	20	CES	26	25	13
39	52	2122	71					CMS	35	32	20	CES	49	25	18
40	52	2210	71					CMS	29	34	15	CES	44	20	14
	Total				1,165				1,599				1,919		
Information provided by the Westport Public Schools' Transportation Department															

2002-2003 Route Structure – Van Utilization

Item No	Route No.	Van No.	Student Capacity	Tier 1				Tier 2				Tier 3			
				School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops
1	30	2059	9 + 2 WC	SHSs	6	45	6	BMSs	3	28	3	CESs	5	26	4
2	40	1702	20	SHSs	1	12	1	BMS	9	42	6	GF	20	15	3
3	50	1700	20									GF	10	24	5
4	70	2053	16	SHS	6	34	1	CMS	17	12	10	CESs	4		
5	80	1701	20	SHS	16	27	9	CMSs	1	22	1	KHS	16	32	7
6	100	2056	16	SHSs	15	Pm only		CMS	12	21	10	CES	13	17	7
7	110	2250	19					CMS	13	32	3	KHS	12	35	7
8	120	1704	20	SHS	3	23	2	BMS	20	21	15	CESs	5	29	4
9	130	2251	19	SHSs	2	23	2	BMS	18	21	7	CES	8	15	6
10	150	1703	20	SHS	25	25	11	CMS	11	20	6	KHS	19	24	1
11	160	2060	9 + 2 WC									CESs	5	35	5
12	170	2062	16									LLS	10	26	6
13	180	2057	16									LLS	23	8	10

Item No.	Route No.	Van No.	Student Capacity	Tier 1				Tier 2				Tier 3			
				School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops	School	Assigned Students	Live Time	Number of Stops
14	190	2002	19									Pre-K	3		
15	200	2061	16	SHS	7	33	1	BMS	5	20	4	Pre-K	3		
	Total				66*				109				150		

* Excludes the 15 students who are transported in the afternoon only (Route 100)
S = Special Education service van
Information provided by the Westport Public Schools' Transportation Department