Fairfax County School Board

Transportation Task Force

Final Report

March 10, 2008

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Executive Summary

The Transportation Task Force (TTF) was chartered by the Fairfax County School Board to offer community perspectives as input to the conduct of a transportation reengineering analysis, to provide a workable and practical bell schedule that would achieve later start times for high schools and to recommend changes to improve the services provided. The sixty-eight (68) people appointed to the TTF to do this work were drawn from every district in the county and from a number of countywide and community organizations, and represent a very broad cross-section of Fairfax County. The school system was well represented, with twenty-three (23) employees of the Fairfax County Public School System (FCPS) as members – five of whom are Principals. The TTF also included seven other Fairfax County government employees, as well as three FCPS high school students.

Approaching its task in two phases and working together in committees, subcommittees, and as a Committee of the Whole, the Task Force met dozens of times over its six-month working life. The members of the Task Force volunteered thousands of hours to gather, share, review and discuss thousands of pages of pertinent information. After carefully considering all of this information, the Task Force is proposing a number of changes to the services provided by the FCPS Transportation Department. These service parameters should improve service and, importantly, reduce system costs as well. These are (verbatim):

- Retain the "Exception to Ride" program
- "Civil twilight" should be respected but not as an absolute barrier. Elementary school (ES) bus runs may start before civil twilight, but not more than ten days each academic year, and not by more than ten minutes even then.
- ES students should not ride the bus to their within-boundary base-school for more than 45 minutes.
- Middle school (MS) and high school (HS) students should have the same bus ride time limitations
- MS and HS students should not ride the bus to their within-boundary base-school for more than 60 minutes
- ES students should arrive no later than five minutes before school and no earlier than 25 minutes before school – a 5-25 minute arrival/drop off window – and are to be permitted to exit the bus and enter the school immediately upon arrival.
- HS and MS student arrival/drop off window is to be 10 – 25 minutes before school, with immediate entry.
- "Grandfathering" for school boundary changes may be permitted, but for not more than a single year following the changes.
- "Grandfathering" should not be used for non-boundary program changes.
- Current home-to-school walking distances should not be changed.
- Transportation should optimize bus stop placements by making better use of the permissible walking distance, up to, but not exceeding one-half (1/2) mile for ES students, with the goal being to reduce the number of bus stops and improving transport efficiency and run length.

- Transportation should optimize bus stop placements by making better use of the permissible walking distance, up to, but not exceeding three-quarters of mile for MS and HS students, with a goal of reducing the number of bus stops and improving transport efficiency and run length.
- ES students should not ride with MS or HS students, except for current rare and unusual circumstances related to centralized pick-ups, such as TJHSST.
- MS and HS students may ride the same bus at any time.
- Transportation should not be provided to a GT Center when the base school has a GT Center.
- The use of centralized pickup locations should be expanded for all students attending non-mandatory out-of-boundary programs.

In addition, we believe that there are several larger-scale initiatives that offer possibilities that should be explored. These initiatives, such as Consortia and the "Cool Counties Initiative," are beyond the purview of this Task Force. While we reviewed and discussed them in this report, we had neither the time nor the expertise to study them in the depth needed to support anything more than a recommendation to the School Board for further study.

Like the School Board, the Task Force believes that later start times would be beneficial for adolescents, particularly high school students. This, in turn, serves FCPS Strategic Goal 6.7 to provide, "a safe and healthful learning environment." It also helps FCPS meet its Student Achievement Goals to ensure that students, "achieve their full academic potential in the core disciplines," (1.1), and, "make healthy and safe choices" (2.8).

In Phase I, we developed five bell schedule alternatives that would provide these later start times. In Phase II, the TTF spent almost three months identifying the impacts of each of these alternatives on FCPS students, on FCPS employees and on the greater Fairfax community. These impacts – positive and negative (most impacts cut both ways) – informed our final decisions. As would be expected in any group, particularly one as large and intentionally diverse as the TTF, there was disagreement on the magnitude of the impacts, on whether an impact was positive or negative or both, and – most critically – as to whether the overall positive benefits of later start times outweighed the negative effects. Yet, after much discussion the Task Force determined that later HS and MS start times can be achieved in an acceptable way, and selected a bell schedule that does this.

The proposed bell schedule continues the current three-tier system. It begins with Elementary Schools (ES), follows with HS and ends with MS. To balance the tiers there are ES in each tier (ES would be split roughly 55%, 25% and 20% between tiers for balance today). Transportation should put as many ES as possible in tiers 1 and 2, while keeping HS in tier 2. The proposed bell schedule to provide later start times for adolescents is:

Tier	School	Start Times	End Times
1	Elementary	7:50 – 8:10	2:30 – 2:50
2	High	8:35 – 8:55	3:25 – 3:45
3	Middle	9:20 – 9:40	4:10 – 4:30

Note that these start/end time windows are approximate and not rigid times. Again, the FCPS Transportation Department should develop rolling bell schedules that start as many elementary schools as possible in Tier 1 and Tier 2, while balancing the tiers and starting high schools as close to the beginning of the tier 2 window so that they can end by 3:30 p.m., preferably even before. Elementary schools placed in the first tier should be those with the shortest routes and the fewest bus riders so as to minimize problems with civil twilight.

This decision by the Task Force, like virtually every formal decision the body made, was not unanimous. This should not be surprising, given the size and diverse make-up of the Task Force. In fact, it's quite healthy and makes for better decisions, and shows that the School Board appointed a widely varied cross-section of the county. For all that, the decision was strongly supported nonetheless. In sum, after much discussion of the impacts and the selection of a bell schedule that provides later start times, the consensus reached by the members of the Transportation Task Force is:

> *We believe the bell schedule we propose, when combined with the service parameter changes we recommend achieves these beneficial later start times for the adolescents in Fairfax County in a way that is acceptable to the community.*

Organization and Process

The Transportation Task Force (TTF) was chartered by the Fairfax County School Board to offer community perspectives as input to the conduct of a transportation reengineering analysis. The TTF Charter is at Appendix A. The sixty-eight (68) people appointed to the TTF were drawn from every district in the county and from a number of countywide organizations, such as the Fairfax County Federation of Citizens Associations, and represent a very wide cross-section of Fairfax County. The school system was well represented in the group, with twenty-three (23) employees of the Fairfax County Public School System (FCPS) as members – five of whom are principals. The TTF also had seven other Fairfax County employees, including two Police Department Commanders, as well as three FCPS high school students. The TTF Membership list is at Appendix B.

Working as a Committee of the Whole, as members of at least two of the six large working committees and serving on two or more subcommittees, TTF members met dozens of times during the TTF's six -month working life. The schedule of general TTF meetings is at Appendix C. A summary of attendance at those meetings is at Appendix D. At those meetings, we looked at service parameters, large-scale organizing and re-organizing possibilities and a variety of bell schedules. We reviewed what had been done elsewhere, and what had been done in Fairfax County in the past. We met with outside experts, and had active participation by FCPS staff. TTF members gathered and shared dozens of studies, documents, papers, surveys and articles. We looked over information from other jurisdictions and shared each committee's and subcommittee's work with those not on that committee or subcommittee. In all, we reviewed and discussed all of this information – comprising many thousands of pages and more than just the 100 or so documents posted on our web site – and they were a tremendous help. Our primary references are posted on the Transportation Task Force web site: http://www.fcps.edu/fts/taskforce07/index.htm, and may be viewed there.

One over-arching aspect of the Task Force's work is the benefit to adolescents of later start times. Note that this is different from simply getting more sleep – though more sleep is not an unworthy goal itself. The benefits of later start times are accepted by the School Board and by most of the Task Force. Where TTF members differ in this area is with regard to how important these benefits are. That's something each Task Force member had to decide for him or herself in weighing the positive and negative aspects of the changes being discussed. To help the readers of this report understand this issue somewhat better, a brief compendium of information regarding the benefits of later start times is at Appendix E.

The TTF approached its task in two phases. In Phase I, the TTF split into rough thirds and formed three committees to look at various ways to push back start times. The "Slide" Committee looked at sliding the current schedule – intact – back later in the day. The "Flip" Committee looked at ways to flip or re-shuffle the existing three tiers to move high schools (HS) back. The third "Tweak" Committee looked at ways to change the transportation system to improve service and reduce costs. Membership of the committees is at Appendix F. The formal definitions of Flip, Slide and Tweak that were used are at Appendix G.

A detailed discussion of the Slide and Flip Committees and their work is in the Bell Schedule section of this report. A discussion of the Tweak Committee can be found in the Service Parameter section (which begins on page 8). Each of these committees made two formal presentations to the TTF. Their final reports are at Appendices H, I and J, respectively.

From those reports the TTF voted to create a set of five possible options for achieving later start times. The five options are at Appendix K. Looking at the impacts of each of those five options was Phase II of the Task Force's work.

As the TTF began Phase II, it took some time to look at changes to the service parameters used by the FCPS. After several meetings and much discussion, the TTF adopted numerous service parameter changes. These changes will improve the service provided, and tie directly into the bell schedule that the TTF also proposes. One prime feature of these service parameters is that they should reduce system costs. This is accomplished, in part, by reducing the number of stops each bus will make, thereby shortening the time needed to run each route and possibly reducing the number of buses needed overall. These cost effects were discussed with Transportation Department staff, but Transportation was not able to provide final cost and savings estimates to the Task Force. These service parameter changes are detailed in the Service Parameter section of this report, and presented again, with voting by item, at Appendix L.

In Phase II, the TTF again split its entire membership into thirds and formed three new committees. Each of the three was charged with listing the impacts caused by adopting each of the five options – along with the pluses and minuses – for either: (1) the community as a whole – Community Impact Committee (CIC); (2) FCPS employees – Employee Impact Committee (EIC); and students – Student Impact Committee (SIC). Membership of the committees is at Appendix K. These committees spent almost three months on this task – and some still felt rushed, even with a one-month time extension – and provided the TTF with a very comprehensive look at the potential impacts of each of the five options it was considering.

The Task Force did not attempt to weigh or rate each impact as a group. This was impossible to do comprehensively as each TTF member is an individual with his or her own priorities and would weigh impacts differently. Blending these differences would remove their meaning, so it wasn't done. Instead, and for that reason, the impacts developed by the three TTF Impact Committees are listed and described in their reports. Readers are encouraged to decide for themselves the importance of each impact listed. The three Impact Committee reports are at Appendix L.

After looking at numerous possible bell schedules and discussing the potential impacts of its five preferred options in great detail, the Task Force determined that later HS and MS start times can be achieved in an acceptable way, and it selected a bell schedule that does this. The proposed bell schedule sticks to the current three-tier system, as it must. It begins with Elementary Schools (ES), follows with High Schools (HS) and ends with Middle Schools (MS). (Note that, to balance the tiers, there must be ES in each tier, with the majority in tiers 1 and 2.) The proposed bell schedule to provide later start times for adolescents is:

Final Proposed Bell Schedule – Later Start Times

Tier	School Level	Start Times	End Times
1	Elementary	7:50 – 8:10	2:30 – 2:50
2	High	8:35 – 8:55	3:25 – 3:45
3	Middle	9:20 – 9:40	4:10 – 4:30

Note that these start/end time windows are rolling time-frames, and as approximate times should not be considered rigid. The FCPS Transportation Department should work within these to its best advantage. For example, to the extent possible, high schools should start toward the beginning of their window so that they can end as close to 3:30 P.M. as possible, if not before. Similarly, the elementary schools placed in the first tier should be those with the shortest routes and the fewest bus riders so as to minimize the impact of civil twilight on the routes.

The TTF also looked at larger initiatives that would affect the FCPS Transportation system in a dramatic fashion. These include alternative transportation methods, such as the "Cool Counties Initiative," and the use of Consortia to decentralize special courses and programs. These initiatives are outside of the purview of the TTF, and we did not examine them in great detail. However, we do believe that they merit further study by the School Board and the FCPS. These are detailed at Appendix Q.

This decision by the Task Force, like every formal decision the body made, was not unanimous. This should not be surprising, given the size and diverse make-up of the Task Force and the complexity of the issue. In fact, it's quite healthy and makes for better decisions, and shows that the School Board appointed a widely varied cross-section of the county. For all that, the decision for a later start time bell schedule was strongly supported. Of those eligible to vote and voting on a bell schedule, more than 80 percent favored the proposed bell schedule over making no change. The final vote was 22 for the change, 5 for making no change, with 13 abstentions. These votes were taken by roll call. The results are included in the report at Appendix R.

Service Parameter Recommendations

The Task Force approached service parameters knowing that transportation is "an exercise in constrained optimization" (Tom Platt, MPS, TTF meeting of 11/19/07). He noted that Transportation may seem simple – it's just buses and time – but the reality is far from simple. The FCPS has more than 5,000 daily bus runs serving 167,000 students who attend more than 200 schools. One fundamental question before the Task Force was, "what service is to be provided?" And this question itself has many pieces, including; who gets transportation, how long can or should they ride, how far can they be asked to walk to school or to the bus stop, with whom can they ride, at what times of day, how long before school can they be dropped off, what is the earliest they can be picked up? In setting service parameters, the Task Force answered each of these questions and more.

The Task Force took formal votes on service parameters at several meetings. As noted earlier, these votes are detailed at Appendix L. The specific parameters the Task Force addressed were gathered by the Phase I committee chairs from their committees. For the service parameters shown, there was a consensus in every case, stronger in some than in others. When the consensus was weak or conflicting, further discussion usually led to a solution. For example, regarding the use of civil twilight, the Task Force does not believe it should be an absolute barrier (79 percent said, "no"). It also, however, does not want civil twilight to be completely ignored for within-boundary base-school ES (72% want it respected). The compromise reached is to have civil twilight respected – i.e., avoid picking up ES kids before sunrise - except for two weeks or so in December and early January, when flexibility of up to ten minutes is acceptable. It should be noted that the flexibility created by this single exception to this single service parameter avoids a $17 million cost increase that another service parameter (a 45 minute ES bus ride limitation) and the proposed bell schedule would have created. It should also be noted that the FCPS currently has 31 ES bus runs that start before civil twilight on occasion.

The Task Force addressed each of the service parameters individually. There was extensive discussion in every case – in committees, subcommittees, and at several general membership meetings. The service parameters recommended by the Task Force are (verbatim):

- Retain the "Exception to Ride" program
- "Twilight time" should be respected but not as an absolute barrier. Elementary School bus runs may start before civil twilight, but not more than ten days each academic year, and not by more than ten minutes even then.
- ES students should not ride the bus to their within-boundary base-school for more than 45 minutes.
- MS and HS students should have the same bus ride time limitations
- MS and HS students should not ride the bus to their within-boundary base-school for more than 60 minutes
- ES students should arrive no later than five minutes before school and no earlier than 25 minutes before school – a 5-25 minute arrival/drop off window – and are to be permitted to exit the bus and enter the school immediately upon arrival.

- HS and MS student arrival/drop off window is to be 10 – 25 minutes before school, with immediate entry.
- "Grandfathering" for school boundary changes may be permitted, but for not more than a single year following the changes.
- "Grandfathering" should not be used for non-boundary program changes.
- Current home-to-school walking distances should not be changed.
- Transportation should optimize bus stop placements by making better use of the permissible walking distance, up to, but not exceeding one-half (1/2) mile for ES students, with the goal being to reduce the number of bus stops and improving transport efficiency and run length.
- Transportation should optimize bus stop placements by making better use of the permissible walking distance, up to, but not exceeding three-quarters of mile for MS and HS students, with a goal of reducing the number of bus stops and improving transport efficiency and run length.
- ES students should not ride with MS or HS students, except for current rare and unusual circumstances related to centralized pick-ups, such as TJHSST (Thomas Jefferson High School for Science and Technology).
- MS and HS students may ride the same bus at any time.
- Transportation should not be provided to a GT Center when the base school has a GT Center.
- The use of centralized pickup locations should be expanded for all students attending non-mandatory out-of-boundary programs.

In early November 2007, the Task Force was surveyed via an online software program on a number of service parameters. Because this was done over the Internet and not in a general session, the preferences stated were not binding choices or votes. Due to technical difficulties, not all TTF members were able to access the online survey. Twenty-one were able to complete the survey, and the results informed the TTF discussion of service parameters. The results of the survey are at Appendix S.

Bell Schedules

Recommended Bell Schedule

The Transportation Task Force proposes the following bell schedule for the FCPS:

Tier	School	Start Times	End Times
1	Elementary	7:50 – 8:10	2:30 – 2:50
2	High	8:35 – 8:55	3:25 – 3:45
3	Middle	9:20 – 9:40	4:10 – 4:30

The genesis of this bell schedule is discussed in detail in the following sections.

Background on Current Bell Schedules

School start and end times ("bell schedules") were provided by FCPS Transportation Services to the TTF for the 2007-2008 school year. The first students to be delivered each day are high school students. Eighteen schools, out of a total of 21 high schools ("HS") and 4 secondary schools ("SS"), start at 7:20 a.m. and end at 2:05 or 2:10 p.m.[1] Six HS or SS start at 7:25 or 7:30 a.m. and end at 2:10 or 2:15 p.m. The length of the school day varies by HS/SS. In six schools, the day is scheduled to last 6 hours and 40 minutes; in 10 schools it is 6 hours and 45 minutes, and 8 schools run 6 hours and 50 minutes.

FCPS buses are scheduled to drop off high school students at least 20 minutes, and as much as 35 minutes, prior to the start of school in the morning. This allows the buses to leave the high schools and pick up the next load of students, generally middle school students. The HS/SS students are generally unsupervised in the schools during this pre-school period.

Thomas Jefferson High School for Science and Technology ("TJHSST" or "TJ"), which draws students from all over Northern Virginia, uses a bus depot system. In this system, a student takes her or his neighborhood bus to their base HS/SS; then, another bus takes students to TJ from that base school. TJ starts at 8:30 a.m. and ends at 3:50 p.m., a 7 hour and 20 minute day.

Ten of the 26 middle schools ("MS") in FCPS start between 7:20 and 7:30 a.m.; five start between 7:35 and 7:45 a.m.; and nine start between 7:50 and 8:05 a.m. Poe MS starts at 8:30 a.m. and the MS portion of South County Secondary starts at 9:17 a.m. MS students are generally delivered to school about 10 minutes prior to the start of school. MS students are supervised before school starts. Most MS days are 6 hours and 50 minutes in length, although they range from 6 hours and 45 minutes to 7 hours.

[1] High schools include grades 9 through 12, while secondary schools include grades 7 through 12. Most middle schools include grades 7 and 8.

FCPS has 137 elementary schools ("ES") teaching grades kindergarten through six.* Three schools start at or before 8 a.m. Thirty-eight schools start at or between 8:00 and 8:30 a.m.; 41 schools start at or between 8:35 and 8:55 a.m.; and 55 schools start at or after 9:00 a.m. Most ES days are 6 hours and 40 minutes in length, although several are 6 hours and 35 minutes long. ES students are generally delivered to school about 10 minutes prior to the start of school. ES students are supervised before school starts.

(Glasgow, Poe and Holmes MS include grades 6-8, and elementary schools that feed into those schools include grades K-5.)*

The following chart illustrates the current FCPS morning bell schedule:

Current FCPS School Start Times (2007-2008)

Schools	7:20	7:45	8:00	8:15	8:30	8:45	9:00	9:15	9:30
ES			**XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX**						
MS	**XXXXXXXXXXXXXXXX**				**X**			**X**	
HS	**XXXXX**				**X**				

(XXXX indicates the range within which that school level starts across the County.)

Bell Schedule Cost Factors

TTF members were concerned about the costs of current bus operations and the potential cost impacts of any Task Force recommendations on changing bell schedules. While the TTF was provided with little bus operations cost data (except for the estimate provided to the Slide Committee, which is discussed below), the TTF was briefed on factors that generally can increase or decrease the costs of school bus operations. The TTF also reviewed the two previous studies by Management Partnership Services, Inc. ("MPS") for FCPS. These studies are "K-12 Pupil Transportation Services Bell Time Analysis for FCPS, January 5, 2006" and "Transportation Options & Phase 2 Bell Time Analysis for FCPS, December 2006." Both can be found on the TTF web site. The TTF used this information on cost factors in its consideration of bell schedules. Some of these factors include:

- **Total Elapsed Time**

This is the total elapsed time from when the first students are delivered to schools in the morning to the time when the last students are delivered to schools in the morning. The shorter the total time window for deliveries, the more buses are needed to be on the road at the same time, increasing operating costs. The same factor affects the cost of transporting students from school to home in the afternoon.

Currently, the earliest school starts at 7:20 a.m. (most HS) and the last school starts at 9:25 a.m. (Fort Belvoir ES). This results in a total morning start time window of 2 hours and 5 minutes (one hour and 55 minutes excluding Fort Belvoir ES). However, since HS students do not have to be supervised prior to the start of school, FCPS buses have been delivering HS students 20 to 35 minutes before the start of school, substantially increasing the total delivery window to 2 hours and 25 minutes. In the afternoon, the first students are picked up at 2:12 p.m.

(Fairfax HS), the latest ES pickup is 4:05 p.m. (Fairfax ES), and the last students are picked up at 4:15 p.m. (MS students at South County SS), for a total elapsed time of 2 hours and 3 minutes in the afternoon (1 hour and 53 minutes, excluding the unique MS students at South County SS).

A bell schedule that provides a longer total elapsed time from first school bell to last school bell is cheaper to service than a bell schedule that compresses the total time window, as each bus can make more runs and fewer buses are needed in total.

- **Time between Deliveries**

This is the elapsed time between when a bus delivers a load of students to a school and when that bus delivers its next load of students to their school. It is related to the total elapsed time of the bell schedule. FCPS tries to design bus runs (a series of linked routes) so that a bus can cover a route and deliver the students to school in time for the starting bell, then have time to drive ("deadhead") to the start of another route, cover that route and deliver those students to their school in time for the starting bell, deadhead again and cover a third route. For example, a bus may drive a route and pick up HS students, deliver them to HS at 6:45 a.m. (early for a 7:20 a.m. start time), then deadhead to a neighborhood and pick up MS students along a route for delivery for a 7:30 a.m. school start time, and then deadhead out to a neighborhood, pick up ES students, and deliver them in time for an 8:15 school start time. FCPS currently averages about 2.5 routes per bus run, which is very efficient. (However, FCPS bus runs have been linked so tightly that there is little spare "buffer" time between routes, which magnifies the impact of a late bus on later schools in its run.)

As noted earlier, the more routes a single bus can cover in a morning or afternoon, the fewer buses are needed to deliver students, thereby reducing costs. A bell schedule with sufficient time between the start times of various schools to allow for linking bus routes is cheaper to operate than a bell schedule that is so compressed that few buses can serve multiple schools in linked routes.

- **Tiers**

Because of the time required to deadhead and then run a route, school start times are often designed in "tiers" to allow linking of bus routes into runs. For example, in FCPS, HS generally starts first on Tier 1; time is allowed for deadheading and picking up MS students along a route; then MS starts next in Tier 2; time is allowed for deadheading and picking up ES students along a route; and then ES starts last in Tier 3.

- **Rolling Bell Schedules**

Over time, FCPS has optimized the timing of individual bus routes to collapse as much as possible the time between one school delivery and the next. This has resulted in HS being the only tight tier, with all HS starting from 7:20 a.m. to 7:30 a.m. (with the exception of TJ). Twenty-four of the 26 MS start over the period 7:20 a.m. to 8:05 a.m., so MS have "rolling bell schedules" starting in Tier I and continuing into Tier 2. ES starts almost continuously throughout a very loose Tier 3, extending from 8 a.m. until 9:25 a.m.

- **Full Tiers**

An efficient school bus operation will "balance" bus route loads across tiers, i.e., have roughly the same number of buses operating in each tier. In a simple example with three tiers, if each bus were able to link three routes and deliver students to three schools, each tier would have the same number of buses operating during that tier. There would be no underused buses. This would be an efficient bus system.

In FCPS, February 2007 data show that there were 1,376 ES morning bus runs; 515 MS morning bus runs; 552 HS morning bus runs; 129 secondary school (HS and MS in same school) morning bus runs; and 113 "combo" bus runs (carrying HS and MS students to separate HS and MS that are located near to each other). Thus, ES bus runs are half of the total number of bus runs. Therefore, to balance tiers, FCPS cannot have one tier that is only ES. Rather, if these 2,685 runs are allocated across three tiers, that would mean 895 runs per tier. Neither HS nor MS forms a complete tier by itself in FCPS, while ES runs are sufficient to form one and one-half tiers. Thus, the FCPS tiers are currently balanced roughly as follows - Tier 1: HS/SS and MS; Tier 2: MS and ES; Tier 3: ES.

- **Civil Twilight**

"Civil twilight" is defined by the US Naval Observatory to, "begin in the morning and to end in the evening when the center of the sun is geometrically 6 degrees below the horizon. This is the limit at which twilight illumination is sufficient, under good weather conditions, for terrestrial objects to be clearly distinguished… In the morning before the beginning of twilight time and in the evening after the end of twilight time, artificial illumination is normally required to carry on ordinary outdoor activities. Real darkness, however, ends sometime prior to the beginning of morning twilight time, and begins sometime after the end of evening twilight time."

Observing civil twilight with regard to schools is not required in Virginia or FCPS statutes, regulations or policies. However, when changes to bell schedules were considered previously in FCPS, community members and school safety staff believed it unsafe to ignore twilight time entirely and have ES going to or from school "in the dark." They felt that a civil twilight constraint was reasonable for discussions of what time it is light enough for ES to be picked up or dropped off. FCPS currently has 31 ES bus runs that pick up some students before civil twilight at times during the school year.

The TTF basically agreed that civil twilight matters (by a slight majority), but did not believe civil twilight should represent an absolute requirement or barrier. As an absolute requirement, civil twilight would be very costly with ES in the first tier. The TTF decided that civil twilight constraints should be relaxed by several minutes (ten or fewer) for two weeks or so each winter. This constraint is relevant to the design of bell schedule alternatives.

Committee Recommendations on Alternative Bell Schedules

- **SLIDE committee**

The Slide Committee undertook the task of designing and evaluating bell schedules that would "slide" the current pattern of school start/end times so that HS could start later than it currently does. The Slide Committee recommended that a "slide" bell schedule alternative should start HS around 8 a.m., but felt that ES start times should slide by no more than 10 minutes (so the last ES would start at 9:35 instead of 9:25). A later start would dictate a later end and this was found to cause unacceptable problems. This Slide bell schedule would collapse the total elapsed time from earliest morning bell to last morning bell to one hour and 35 minutes from the current elapsed time of 2 hours 5 minutes. The FCPS Transportation Department did a rough calculation and estimated that reducing the delivery window in this way would require on the order of 500 additional buses, resulting in an annual operating cost increase of approximately $42 million.

As a result, the Slide Committee recommended to the TTF that the task force not continue to investigate a slide bell schedule alternative. The Slide Committee's briefing to the TTF enumerates the thoughts of the Slide Committee members in evaluating the costs and negative impacts of the slide bell schedule. These points were not adopted formally by the Slide Committee.

The Slide Committee was concerned about the increase in operating costs; the negative impacts of pushing ES school even later; and the negative impacts of starting HS later.

- **FLIP Committee**

The Flip Committee undertook the task of designing and evaluating bell schedules that "flipped" the current pattern of school start/end times so that HS could start later than it currently does. The current FCPS bell schedule is most generally HS first, then MS, then ES.

The Flip Committee began by looking at the bell schedule scenarios that had been considered in the two MPS studies of 2006, the School Board Scope of Work for the MPS studies; the 1998 FCPS Task Force; the Madison HS proposed pilot, 2001; and bell schedules considered by Arlington County. From this, the committee developed two alternatives: Flip 1 was basically ES/HS/MS; Flip 2 was ES/MS/HS. The start times, times between tiers, total elapsed time, use of rolling bells, and balancing of tiers in the two schedules were designed with the intention of minimizing the operating costs of the alternatives.

The Flip Committee then did a preliminary evaluation of the two alternatives. The committee listed all of the factors that the bell schedules might impact; the members then rated the two bell schedules against the current bell schedule based on those impacts. Alternatives were rated against the current bell schedule for their potential impacts on the following factors: student sleep biology; students transported during "light;" student before-school and after-school supervision, and other impacts on families; after-school activities; community sports; coaches; bus run duration; cost of bus operation; bus operations; HS students' jobs; school staff; and neighborhoods near schools.

The Flip Committee members then selected their preferred alternative. The committee voted that Flip 2 (ES/MS/HS) was slightly preferable to Flip1 (ES/HS/MS), based on an assumption that HS sports team practices and other HS activities could be held in the morning before classes start. The Flip Committee also voted that if HS sports and activities were later shown not to be possible or viable before school (through further investigation in Phase II of the TTF effort); the Flip 1 schedule was preferred by the committee. And this is just what happened. The following chart shows the bell schedule alternatives that the Flip Committee recommended to the TTF for further study and analysis:

Flip Committee Recommended Bell Schedule *

	School Start Times (AM)			**School End Times (PM)**		
school	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:50-8:10	8:35-8:55	9:20-9:40	2:30-2:50	ES 3:15-3:35 MS/HS 3:25-3:45	ES 4:00-4:20 MS/HS 4:10-4:30
ES	**XXXX**	xxxx	x	**XXXX**	**X**xxx	x
MS		**XXXX**	xx		**XXXX**	xx
HS/SS		xx	**XXXX**		**X**x	**XXXX**
	total time span: 1 hour 50 minutes			total time span: 2 hours		

(assuming HS sports and activities could occur before school starts)*

Flip Committee Alternative Bell Schedule

	School Start Times (AM)			**School End Times (PM)**		
school	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:50-8:10	8:35-8:55	9:20-9:40	2:30-2:50	ES 3:15-3:35 MS/HS 3:25-3:45	ES 4:00-4:20 MS/HS 4:10-4:30
ES	**XXXX**	xxxx	x	**XXXX**	**X**xxx	x
MS		xx	**XXXX**		**X**x	**XXXX**
HS/SS		**XXXX**	xx		**XXXX**	xx
	total time span: 1 hour 50 minutes			total time span: 2 hours		

Following the Flip, Slide and Tweak committee reports, the TTF addressed service parameters. Those decisions are detailed in the Service Parameter section. The TTF then took the recommendations of the committees on bell schedules, adjusted them for the decisions from the discussion of service parameters, and developed five alternative bell schedules for further TTF consideration. Option A is similar to the Flip Committee's recommended option (above). Option B is much like Option A, except that the entire schedule is moved 20 minutes to a 7:30 a.m. start time. Option C is the Flip alternative recommended bell schedule (above), with Option D being the same schedule moved to a 7:30 a.m. start time (20 minutes earlier). Option E has MS in the first tier, then HS, then ES. These schedules are shown in detail at Appendix K.

Selecting a New Bell Schedule

- **Evaluating the Impact of Bell Schedule Options**

In Phase II of the TTF effort, TTF members were again divided into three equal-sized committees. One committee evaluated the potential impacts of the various bell schedule options on students; one committee evaluated the potential impacts on FCPS teachers, administrators, staff and other employees; and the third evaluated the potential impacts on the greater community. Membership lists for the three Impact committees are at Appendix M.

The Impact Committees worked hard for more than three months and, despite a one-month extension to their deadline, some members still felt rushed. The committees gathered a significant amount of information, both fact-based and opinion. As expected, given the intentionally diverse make up of the committees, there were disagreements during this process about the information and findings. The committees provided this information to the TTF in reports – essentially fact sheets on given impacts. The three Impact committee reports – Community, Employees and Students - are at Appendices N, O and P, respectively.

- **TTF Voting on Bell Schedule Options**

After the Impact Committees reported their findings and conclusions to the TTF, the TTF met on February 5, 2008, to vote whether to recommend an alternative bell schedule to the School Board, and if so, which of the five alternatives should be recommended. Before those votes, TTF members were given the opportunity to re-visit their earlier preference for a three-tier school day that begins with ES, has HS second and MS last. They agreed overwhelmingly that they still wanted the school day structured in that order. Roll call votes were held on the two final questions. In the first vote, members were asked to state their preferred bell schedule option incorporating later HS start times. Of the 40 voting members present, 23 voted to recommend bell schedule Option C to the FCPS School Board for further consideration, 4 voted to recommend Option D (the version of Option C that starts 20 minutes earlier), and 13 members abstained from voting. In a second roll call vote to choose between the later-start Option C and making no change at all, 22 members voted for Option C and a later start time, 5 voted for making no change to today's bell schedule, and, again, 13 members abstained from voting.

One issue discussed by the TTF was that with HS in the second tier, then who starts as the bulk of the first tier (MS or ES) and who starts as the bulk of the third tier (ES or MS)? As noted above, this was resolved with ES first, HS second and MS last. Civil twilight concerns limit how early the bell schedule could start if ES is the bulk of the first tier and could impact the number of buses (and thus operating costs) needed to deliver students to first tier starting schools. Some TTF members were concerned about the impact on families' abilities to provide after-school child care if ES students were on the first tier, with dismissal from school around 2:30 p.m. Conversely, starting the bulk of ES schools in the third tier, as they are now, has required before-school child care that may not be needed for ES students in the first tier. The current tier 3 start times for many ES have made morning child care necessary, since parents often have to go to work early. Many on the TTF came to see that these before and after school child care concerns effectively balance out.

TTF members were also very concerned about the appropriate start times for MS students. Members were generally very concerned about supervision of MS students in the afternoons after school is out, since MS students can be particularly susceptible to inappropriate behaviors and bad influences. Having the bulk of MS in the first tier, as today, aggravates this concern. Putting the bulk of MS in the first tier is also problematic, since MS bus rides can be very long (as long as, or longer than, HS rides). Beginning in 2005-06, the FCPS and Fairfax County expanded after-school programming in all MS to five days a week, in part to reduce the risk factors and increase the protective factors for this vulnerable age group. In the first quarter of this school year, nearly half of the middle school youth had participated in an after-school activity, with weekly attendance of 15,000 students (October 2007). Putting MS students in the third tier, as the TTF recommends, also provides instruction and supervision later into the day than is the case today; and provides these benefits to all students, not just those who participate in an after-school activity today, because all students would be in school until the late afternoon. More detail about the MS after-school programs is at Appendix T.

- **Summary of the TTF Recommended Bell Schedule Change**

To summarize briefly the final voting, members arrived at Option C (ES/HS/MS) as a middle ground that allows high schools to start later but with an end time that best avoids impacts on high school and community sports. Many TTF members believe HS after-school practices and activities could start right after dismissal, rather than waiting for 30 to 40 minutes before beginning. Reducing this delay would help offset the impact on community groups who wait for HS sports teams, bands, etc., to vacate gyms, fields and pools before they can begin their activities. Once again, the bell schedule recommended by the TTF is:

Tier	School	Start Times	End Times
1	Elementary	7:50 – 8:10	2:30 – 2:50
2	High	8:35 – 8:55	3:25 – 3:45
3	Middle	9:20 – 9:40	4:10 – 4:30

Concerns Regarding the Bell Schedule Change

- The proposed bell schedule and recommended service parameters should be implemented together, and not viewed as separate recommendations or actions.
- The greater Fairfax community should be given ample notice before bell schedules are changed, so that families have time to arrange child care, adjust work hours if necessary, etc. The FCPS should reach out aggressively to the community to inform them of the service parameter and bell schedule changes. This step was found to be critically important in other communities that moved start times.
- The TTF recommends the School Board plan and provide the resources needed to implement strategies to mitigate the possible negative impacts and disruptions to the community and FCPS employees from these changes, including contracting with consultants who specialize in change management.
- To preclude a repeat of the current conditions, we believe the Transportation Department's performance standards must, at a minimum, reflect the service parameters recommended by the TTF.

Other Experiences with Later Start Times

Experiences, Information and Ideas From
Other Jurisdictions with regard to Later High School Start Times

- Jurisdictions that have shifted to a later high school start time have generally put high school on the middle of three tiers, usually at 8:30 or 8:40 a.m., as the TTF has done.
- Middle school has most often gone later (8:50-9:40 a.m.), as in the TTF proposal, though it has gone early in some cases (7:45-7:50 a.m.).
- Elementary school is sometimes placed in the first tier (7:30-8:00 a.m.), sometimes spread over a range of tiers (Arlington/Minneapolis) as the TTF proposes and, less often, placed entirely in the last tier (9:20 a.m. in Edina, MN).

Below is a sampling of jurisdictions that not only managed a shift in bell times, but did so without adding to transportation costs (i.e., no additional buses were needed). Both old and new start times are listed (new high school start times are in **boldface**). A much more detailed review of these experiences is at Appendix U.

Minneapolis, MN

Old: HS, 7:15 a.m.
New: **HS, 8:40 a.m.**; ES, 7:30-9:10 a.m. (spread over several tiers); MS, 9:30-40 p.m.

Edina, MN

Old: HS, 7:20 a.m.
New: **HS, 8:30 a.m.**; MS, 7:45 a.m.; ES, 9:20 a.m.

Arlington, VA

Old: HS, 7:30 a.m.; MS 8:10 a.m.; ES, 8:50 a.m.
New: **HS, 8:19** a.m.; MS, 7:50 a.m., ES, 8:00/8:25/9:00 a.m.

Brevard County, FL *

(*NOTE: the Brevard County School District has approximately 75,000 students who travel on a 3-tiered bus system – each bus having 3 routes to serve the three school levels. This system size and set-up is comparable to the FCPS, who has about the same number of riders and three tiers. Brevard's transportation costs were unchanged before and after the change in bell times, and they achieved a 15-minute decrease in delivery time.)

Old: HS, 7:30 a.m.; MS, 8:50 a.m.; ES, 9:50 a.m.
New: **HS, 8:30** a.m., ES, 8:00 a.m.; MS, 9:15 a.m.

Jessamine County, KY

Old: HS, 7:30 a.m.; MS, 7:40 a.m.; ES, 8:30 a.m.
New: **HS, 8:40** a.m.; ES, 8:00 a.m.; MS, 8:50 a.m.

Follow-up studies and reports have shown that the jurisdictions that made the change to later high school start times found or experienced:

- High school students get more sleep
- High school students wake up later (their most important sleep is from 4:00-7:00 a.m.)
- Drop out rates decrease
- Teen depression decreases
- Academic performance improves
- Teen traffic accidents decline
- Participation in sports and extracurricular activities increases, or remains the same
- Students are more alert and participate more in class, especially during first period
- Tardiness decreases
- Fewer days home sick
- Family and peer relationships improve
- School disciplinary actions and referrals to counselors decline
- Less daytime sleepiness, falling asleep during class or while doing homework.
- Child care was not as big an issue as feared.

Some other experiences and suggestions from other jurisdictions are listed below, by subject. A longer and more complete iteration of this information is at Appendix U:

CHILD CARE:

Arlington, VA: An unexpected outcome was the lack of added demand placed on Extended Day programs.

Jessamine, KY: The local YMCA offers before-school care for middle school students who now have the latest start times.

Brevard County, FL: For elementary school students, the need for after-school care increased, but the need for before-school care was eliminated. They now hold middle school activities before school rather than after.

TRANSITION:

Jessamine, KY: Advises to take time and involve stakeholders. Educate community on teen sleep needs. Do surveys using nationally recognized survey tools of teen sleep habits and of staff and parent views.

TEACHER IMPACT:

Arlington, VA: Rush hour commuting, childcare, coaching, and other factors were raised as barriers to changing the school start times. In an effort to retain teachers, the school system provided some options to help ease the transition. Success of these initiatives is demonstrated by the fact that no teacher left the Arlington Public Schools because of issues relating to changing the start times.

SOURCES/LINKS:

Minnesota: "Changing Times: Findings from the First Longitudinal Study of Later High School Start Times," Kyla Wahlstrom, associate director of the Center for Applied Research and Educational Improvement (CAREI) at the University of Minnesota, NASSP Bulletin, Vol. 86, No. 633, December 2002.

http://cehd.umn.edu/CAREI/Reports/docs/SST-2002Bulletin.pdf

http://cehd.umn.edu/CAREI/Reports/summary.html#SchoolStart

http://cehd.umn.edu/CAREI/Reports/docs/SST-1998VI.pdf

http://cehd.umn.edu/CAREI/Reports/docs/SST-1998VII.rtf

Edina, MN:
http://www.edina.k12.mn.us/news/reports/laterstart/summary.htm

Arlington (VA) Public Schools: "Impact of 2001 Adjustments to High School and Middle School Start Times" (June 2005)
http://www2.apsva.us/1540108292149610/lib/1540108292149610/report0605.pdf

Advisory Council on Instruction High School Start Time Study Committee Report (Dec 1999; impetus for Arlington start time effort):
http://www2.apsva.us/1540108292149610/lib/1540108292149610/hs_start_time_report.pdf

Wilton, CN: League of Women Voters of Connecticut Study**; "LWV-CT School Start Time Concurrence Steering Committee Report"** (September 2005):
http://serv01.siteground126.com/~wiltonlw/images/stories/MiscPDFs/lwvctconcurrence.pdf

Appendices

Approved by the School Board
July 21, 2007

CHARTER
SCHOOL BOARD TRANSPORTATION TASK FORCE

PURPOSES

The School Board Transportation Task Force will offer community perspectives as input to the conduct of the transportation reengineering analysis. The Task Force will also generate a report that provides the results from the following tasks:

1. Assess the transportation reengineering options and their implications for the community:
    a. No change (+ safety assurance)
    b. Baseline – assets required to achieve Board-approved transportation performance parameters that will guide system reengineering
    c. Baseline & bell schedule
2. Identify the plusses and minuses in adjusting parameters and bell schedule alternatives – from the Task Force's perspective, what are the limits of community acceptability?
3. Draw any lessons learned from other community studies or "best practice" processes used by other jurisdictions.
4. Recommend solutions, as the Task Force may desire, to problems identified during the conduct of the study.

BACKGROUND

The FCPS Office of Transportation Services will re-engineer bus routes to reduce operational risk and to address minimum service levels not currently being accomplished. In addition, transportation bell schedule alternatives will be considered with a focus on possibly changing school start times particularly for high schools. In this regard, the SB believes that later start times would be beneficial, and seeks the best alternatives for achieving them; the "how" and "at what cost" are, however, the key constraints.

The project will be staffed by existing experts within the office who will be pulled from existing assignments and possibly with support from external consultants. The project will be funded by the monies set aside by the School Board for this purpose in the FY 2008 budget.

The exact parameters that will be used to re-engineer the system need to be identified and agreed to by the School Board prior to beginning actual development of a new bell schedule, bus routes, etc. To this end, the School Board establishes this Task Force to obtain input from interested and knowledgeable constituencies and stakeholders about the School Board's assessment of parameters. The Task Force will help the School Board and staff confirm or validate the project parameters before the technical work begins and offer an assessment of the recommendations coming out of the study.

ORGANIZATION

1. The School Board Transportation Task Force will be appointed by the School Board, consist of up to 70 members and have representation from the groups identified in Table 1:
2. A Chair and Vice-Chair will be selected by the School Board chairman from the Task Force membership and in consultation with the full Board.
3. The School Board Chairman will be the School Board liaison to the Task Force.

PROCEDURAL MATTERS

1. The Task Force will be supported by a professional facilitator.
2. A meeting schedule will be established by the Task Force at its inaugural meeting.
3. The Task Force will develop "rules for engagement." Rules will include, as a minimum, the following:
    - Task Force members must attend at least 50% of the formally called meetings in order to vote on any decisions to be acted on by the Task Force.
    - The Task Force Chair is the official spokesperson for the Task Force; but no member, including the Chair, will represent themselves as speaking for the School Board.

- All meetings must have a formal agenda that is publicly available at least three days prior to the schedule meeting.
- All Task Force meetings will be open to the public.
- Public input to the work of the Task Force will be welcomed, according to procedures approved by the Task Force.

4. Subgroups will be used to facilitate the Task Force's work.

SCHEDULE

The transportation reengineering study will meet the following schedule. The Task Force with therefore complete its work by the end of January 2008.

1.	Task Force convenes	September	2007
2.	Task Force completes report	January	2008
3.	Board engages the community on parameters	February	
4.	Staff analyzes, designs, and estimates costs ("80% solution," not specific bell schedules for specific schools)	May	
▪	Board engages the community on design and specific implications	July	
▪	Options conveyed to the Board	August	
▪	Board makes decision	October	

Table 1. Transportation Task Force Membership

Membership Category or Group	Number
▪ Parents-School Board Appointees (2 parents each)	
▪ At-large [MS, ES]	6
▪ Braddock, Lee, Mount Vernon [Secondary, ES]	6
▪ All Other Districts [ES, Other]	12
▪ Students (SAC selected)	3
▪ Teachers [One from each of the 3 teacher organizations and 4 appointed by the Superintendent from each school level; one of which will be an after-school curriculum sponsor]	7
▪ Principals (5) [As designated by the principals' associations]	
▪ Secondary	1
▪ High	1
▪ Middle	1
▪ Elementary	1
▪ Special Services Center	1
▪ Academy Administrator	1
▪ TJHSST Administrator	1
▪ Alternative Schools Administrator	1
▪ Student Activities and Athletics	1
▪ After School Programming	1
▪ Safety and Security	1
▪ Athletic Coaches	2
▪ Bus Driver (from Bus Drivers Association)	1
▪ ACSD	1
▪ County transportation staff	1
▪ Police Department (2)	
▪ Crossing Guards	1
▪ Youth Services	1
▪ Gang Prevention Coordinator	1
▪ SACC	1
▪ Recreation and Parks	1
▪ Park Authority	1
▪ FCCPTA	1
▪ Athletic Council	2
▪ Federation of Citizens Association	3
▪ After-school small-business employers (Selected by Chamber of Commerce – 1 County/1 Other)	2
▪ SLEEP	2
▪ After-school community groups (Boy and Girl Scouts)	2
Total	68

Transportation Task Force
Membership Roster

Appendix B

Last Name	First Name	Title	Appointed By	Comments
Ackerman	Rona	Elementary School Parent	Stu Gibson, Board Member	
Aste	Mahri	FCPS Elementary School Principal	Elementary Principals Assoc.	
Auerbach	Jan	FC Federation of Citizens Assoc.	FC Federation of Citizens Assoc.	
Baker	Laurie	High School Parent	Phil Niedzielski-Eichner, Board Member	
Berlin	John	Program Services Mgr, Park Svc Div	FC Park Authority	
Bosley	Mary Ann	FCPS High School Asst. Principal	Superintendent Dale	
Brigleb	Jay	High School Student	Student Advisory Council	
Campo	Ken	FCPS Safety Specialist	Superintendent Dale/Dean Tistadt	
Carley	Jennifer	Elementary School Parent	Steve Hunt, Board Member	
Carlson	Walt	FC Federation of Citizens Assoc.	FC Federation of Citizens Assoc.	Replacement Appointee 10//2007
Carroll	Robin	Middle School Parent	Jane Strauss, Board Member	
Chapman	John	FCPS Middle School After-School Program Specialist	Superintendent Dale/Dean Tistadt	
Cherubini	Lisa	Soccer Advisory Council rep	FC Athletic Council	
Clancy	Mike	Elementary School Parent Task Force Vice Chairman	Jane Strauss, Board Member	
Cox	Stephanie	Secondary School Parent	Dan Storck, Board Member	
Cryan	Roger	Elementary School Parent	Phil Niedzielski-Eichner, Board Member	
Culin	Susan	Commander, Traffic Division	FC Police Department	
Dumont	Rhonda	FCPS Student Activity and Athletic Program Specialist	Superintendent Dale/Paul Jansen,FCPS Student Activities	
Ellis	Jesse	Supervisor, Community Use	Community & Recreation Service	Resigned/Replaced by Patrica McGrath
Emery	Mark	FCPS After-School Program Administrator	Superintendent Dale and Paul Jansen, Student Activities and	
Evans	Sandy	Co-Founder, SLEEP	SLEEP	
Floyd	Laura	Elementary School Parent	Kathy Smith, Board Member	
Galicia	Carlos	High School Student	Student Advisory Council	
Galizio	Lyndsie	FCPS Middle School Special Education Teacher	Superintendent Dale	
Gillette	Kathye	Secondary School Parent	Tessie Wilson, Board Member	

Transportation Task Force
Membership Roster

Appendix B

Last Name	First Name	Title	Appointed By	Comments
Goldberger	Margaret	High School Parent	Cathy Belter, Board Member	Resigned/Replaced by Therese Tuley
Harbeck	Judy		FC Federation of Citizens Assoc.	
Harris	Kerri	FCPS Elementary School Teacher	Association of Fairfax Professional Educators	Resigned 9/07
Hecht	Jill	Elementary School Parent	Stu Gibson, Board Member	
Jakulski	Jill	FCPS Special Services HS Principal	Middle School Principals' Assoc.	
Kang	Shirley	Middle School Parent	Ilryong Moon, Board Member	Resigned 1/08
Kim	Christina	Elementary School Parent	Ilryong Moon, Board Member	
Krebs	Barbara	Area Membership Manager	Girl Scout Council, Nation's Capital	
Lecos	Mary Anne		FC Federation of Citizens Assoc	Resigned/Replaced by Walt Carlson
Lindberg	Laurie	Middle School Parent	Janet Oleszek, Board Member	
Lindner	Jenny	FCPS Secondary School Social Studies Teacher	Superintendent Dale	
Martinez	Donna	Member of the Advisory Council of Students with Disabilities	Advisory Council of Students with Disabilities	Resigned 9/07
McGrath	Patricia	After School Programs Branch Manager	Community & Rec Svc.	
McKee	Jan	FCPS Alternative High School Principal	Superintendent Dale	
Menapace	Michele	President, FCCPTA	Fairfax County Council of PTAs (FCCPTA)	
Minnich	Pam	Commander, Youth Services Division	FC Police Department	
Monaco-Stevenson	Lory	Secondary School Parent/FCPS employee	Brad Center, Board Member	
Monts	Charles	Chairman, George Mason District	Boy Scouts, Natl Capital Area Council	
Newmark	Lisa	Elementary School Parent	Janet Oleszek, Board Member	
Nicholson	Beanca	High School Student	Student Advisory Council	
Oehrlein	William	FCPS Secondary School Principal	High School Principals' Assoc.	
O'Keefe	P.D.	FCPS Violence Prevention Specialist	Superintendent Dale/Dr. Alice Farling, Asst. Sup't. Instructional	
Parker	Marlene	FCPS High School Career & Transition Teacher	Fairfax Education Association	
Payne	Phyllis	Co-Founder, SLEEP	SLEEP	
Pflugrath	Mike	FCPS Athletic Coach/Asst DSA	Superintendent Dale/Paul Jansen,FCPS Student Activities	

Transportation Task Force
Membership Roster

Appendix B

Last Name	First Name	Title	Appointed By	Comments
Reed	Dick	Secondary School Parent/TF chairman	Brad Center, Board Member	
Reinsdorf	Marie	Secondary School Parent	Kaye Kory, Board Member	
Ross	Rhonda	SACC Program Administrator	Fairfax Cuonty School Age Child Care	
Rutherford	Mike	Elementary School Parent	Tessie Wilson, Board Member	Resigned 12/2007
Sims	Roger	Springfield representative	FC Athletic Council	
Stefan	Tim	Senior VP, Asset Mgmt, Tysons Corner	FC Chamber of Commerce	
Steinberg	Peter	Elementary School Parent	Cathy Belter, Board Member	
Stuebner	Bruce	FCPS Elementary School P.E. Teacher	Superintendent Dale	
Swarm	Joe	FCPS Athletic Coach/Asst DSA	Superintendent Dale/Paul Jansen,FCPS Student Activities	
Thibodeau-Robitaille	Jan	FCPS Elementary School Teacher	Fairfax County Federation of Teachers	
Todd	Jeff	Bd of Dir, Mt. Vernon-Lee Chamber	Mt. Vernon-Lee Chamber of Commerce	
Tuley	Therese		Cathy Belter, Board Member	Replacement Appointee 12/2007
Vdovjak	John	FCPS Asst Principal, HS ED Prog	Special Education School-Based Admins.	
Velkoff	Patricia	Secondary School Parent	Kathy Smith, Board Member	
Vennergrund	Carol	Middle School Parent	Steve Hunt, Board Member	
Vesilind	Rima	FCPS HS Principal	High School Principals' Assoc.	
Wegener	Christin	Transportation Planner	FC Dept. of Transportation	
Wood	Gayle	High School Parent	Dan Storck, Board Member	Resigned 1/08
Worley	Chris	Elementary School Parent	Kaye Kory, Board Member	
Wright	Doug	FCPS Academy Administrator	Superintendent Dale	
Zikowitz	Brenda	FCPS Bus Driver	Superintendent Dale/Linda Farbry FCPS Director of Transportation	

TRANSPORTATION TASK FORCE
MEETING SCHEDULE

- September 15, 2007
- September 25, 2007
- October 18, 2007
- October 25, 2007
- November 12, 2007
- November 19, 2007
- December 1, 2007
- December 11, 2007
- January 8, 2008
- January 22, 2008
- February 5, 2008
- February 19, 2008
- February 21, 2008**
  *** This meeting was added to complete discussion of the draft majority report. It did not count toward the 50% attendance requirement for voting eligibility.*

Voting eligibility:
Required members to attend
6 or more of the 12 meetings.

Transportation Task Force
Attendance Record

Appendix D

LastName	FirstName	9/15/07	9/25/07	10/18/07	10/25/07	11/12/07	11/19/07	12/01/07	12/11/07	01/08/08	1/22/08	2/5/08	2/19/08	**2/21/08	TOTAL
Ackerman	Rona	X	X	X	X		X	X	X	X	X	X	X		11
Aste	Mahri	X	X	X	X				X	X	X	X			8
Auerbach	Jan		X	X	X	X	X	X	X	X	X	X	X	X	12
Baker	Laurie	X	X	X	X	X	X	X	X	X	X	X	X		12
Berlin	John	X		X	X	X	X	X		X	X	X	X		10
Bosley	Mary Ann		X		X	X		X	X				X		6
Brigleb	Jay	X		X				X							3
Campo	Ken	X		X	X	X	X	X	X	X	X	X	X		11
Carley	Jennifer	X	X		X		X	X	X				X		7
Carlson	Walt	Appointed 10/2007		X	X	X	X		X	X	X	X	X	X	10
Carroll	Robin	X	X	X	X	X		X	X	X	X	X	X	X	12
Chapman	John														0
Cherubini	Lisa	X													1
Clancy	Mike	X	X	X	X	X	X	X	X	X	X		X		11
Cox	Stephanie	X		X		X		X		X	X		X		7
Cryan	Roger	X	X	X	X			X	X	X	X	X	X	X	11
Culin	Susan	X			X				X	X	X				5
Dumont	Rhonda		X		X	X			X	X	X	X	X		8
Emery	Mark	X	X	X	X	X	X	X	X	X	X	X	X	X	13
Evans	Sandy	X	X	X	X		X	X	X	X	X	X	X	X	12
Floyd	Laura	X	X	X	X	X	X		X		X	X			9
Galicia	Carlos														0
Galizio	Lyndsie	X													1
Gillette	Kathye	X			X		X	X			X	X	X		7
Harbeck	Judy	X	X	X	X		X	X	X	X		X	X		10
Hecht	Jill	X	X	X		X			X	X	X	X	X	X	10
Jakulski	Jill	X	X	X		X	X	X	X	X	X	X	X		11
Kang	Shirley	X					X								2
Kim	Christina	X													1
Krebs	Barbara	X													1
Lindberg	Laurie	X	X	X	X			X	X	X	X	X	X	X	11
Lindner	Jenny	X													1
Martinez	Donna														0
McGrath	Patricia			X	X		X		X	X	X	X	X	X	9
McKee	Jan	X	X	X	X		X	X	X	X	X	X	X	X	12
Menapace	Michele	X	X	X	X		X			X	X		X		8

**** The 2/21/08 meeting was added to complete discussion of the Draft Final Majority Report**

Voting eligibility:
Required members to attend
6 or more of the 12 meetings.

Transportation Task Force
Attendance Record

Appendix D

LastName	FirstName	9/15/07	9/25/07	10/18/07	10/25/07	11/12/07	11/19/07	12/01/07	12/11/07	01/08/08	1/22/08	2/5/08	2/19/08	**2/21/08	TOTAL
Minnich	Pam	X					X					X			3
Monaco-Stever	Lory	X	X			X	X		X	X	X	X			8
Monts	Charles	X		X	X	X	X	X	X		X	X	X	X	11
Newmark	Lisa	X		X			X		X		X	X	X		7
Nicholson	Beanca	X	X					X							3
Oehrlein	William	X		X	X	X	X	X	X		X		X		9
O'Keefe	P.D.		X	X											2
Parker	Marlene	X	X	X	X	X	X	X		X	X	X	X	X	12
Payne	Phyllis	X	X	X	X	X	X	X	X	X	X	X	X	X	13
Pflugrath	Mike	X													1
Reed	Dick	X	X	X		X	X	X	X	X	X	X	X	X	12
Reinsdorf	Marie	X	X		X	X	X	X	X	X	X	X	X	X	12
Ross	Rhonda		X		X		X	X	X	X		X	X	X	9
Rutherford	Mike	X	X												2
Sims	Roger	X	X	X		X				X	X	X			7
Stefan	Tim														0
Steinberg	Peter	X	X		X	X		X	X	X	X	X			9
Stuebner	Bruce	X	X	X	X		X	X	X	X	X	X			10
Swarm	Joe	X					X								2
Thibodeau-Rob	Jan				X					X		X		X	4
Todd	Jeff	X	X												2
Tuley	Therese	Appointed December 2007						X	X	X	X	X	X	X	7
Vdovjak	John	X	X	X	X		X			X	X	X			8
Velkoff	Patricia	X	X	X	X	X	X	X	X	X	X	X	X		12
Vennergrund	Carol		X		X	X	X	X		X		X		X	8
Vesilind	Rima	X	X	X	X		X			X	X	X	X	X	10
Wegener	Christin	X			X										2
Wood	Gayle	X	X			X									3
Worley	Chris	X	X	X	X	X	X	X	X		X	X	X		11
Wright	Doug	X	X	X		X	X	X	X	X	X	X			10
Zikowitz	Brenda	X	X		X	X	X	X	X	X	X	X	X		11
		53	40	36	39	29	37	35	37	39	41	41	36	20	

**** The 2/21/08 meeting was added to complete discussion of the Draft Final Majority Report**

Appendix E

Facts About Sleep and Adolescents

Sleep is a basic biological need[1, 2] Adequate sleep is necessary for our bodies and our minds to grow and to heal.[3] Research shows that on average adolescents require 9.25 hours of sleep a night for good physical and mental health.[4, 5]

Inadequate sleep has been linked to many physical, mental and social problems: [6, 7, 8]

- Impairment of the immune system and susceptibility to illness[9]
- Depression, anxiety and irritability[10]
- Impaired metabolism, diabetes, being overweight and obesity [11, 12, 13, 14, 15]
- Acne[16]
- Alcohol and caffeine abuse[17]
- Hyperactivity[18]
- Poor judgment, rebelliousness, risky behavior, lack of control, trouble with relationships[19, 20, 21]
- Lower academic performance[22, 23]
- Decreased athletic performance and injury[24, 25, 26]
- Car crashes due to drowsy driving[27, 28, 29, 30]

Adolescents have different sleep patterns and needs than adults or younger children.[31] Hormonal influences of puberty shift the adolescents' biological clocks. The secretion of melatonin, a brain hormone that causes drowsiness, begins later in adolescents, causing a "phase delay" in their sleep patterns.[32, 33, 34, 35, 36, 37] This tendency for adolescent sleep patterns to be delayed has been reported not only in North America but also in South America, Asia, Australia, and Europe.[38]

Despite needing 9.25 hours of sleep for good health, high school students on average get between 7 and 7.5 hours of sleep on school nights.[39, 40] While a variety of factors may contribute to adolescents' sleep deprivation, sleep researchers point to early school start times as a major culprit.[41, 42, 43, 44] Schedules that require teen students to wake up early in the morning run counter to their natural sleep cycle.[45]

"As a result [of hormonal changes], teenagers are more likely to go to bed later than younger children and adults, and they tend to want to sleep later in the morning. This sleep-wake rhythm is contrary to the early-morning start times of many high schools and helps explain why most teenagers get an average of only 7-7.5 hours of sleep a night," according to the National Institutes of Health.[46]

Jurisdictions that have later start times or have switched to later high school start times have found that teen students do get more sleep per school night on a later schedule. In Minnesota, the shift resulted in an average of an hour more sleep per school night and drop-out rates decreased significantly.[47] In Wilton, CT, where the schedule shifted by 40 minutes, it resulted in an average of 35 minutes more sleep each night.[48]

Sleep and circadian rhythms play a part in how prepared we are to learn.[49, 50, 51] "Not only is a good night's sleep required to form new learning and memory pathways in the brain, but sleep is also necessary for those pathways to work up to speed," according to the National Institutes of Health. "Several studies show that lack of sleep causes thinking processes to slow down. Lack of sleep also makes it harder to focus and pay attention. Lack of sleep can make you more easily confused."[52]

In one recent NIH study, "Volunteers had to sleep at least 6 hours to show improvement in learning, and the amount of improvement was directly tied to how much time they slept. In other words, volunteers who slept 8 hours outperformed those who slept only 6 or 7 hours."[53]

After a complete night's sleep, memory is consolidated, test performance improves, problem-solving and creativity are enhanced.[54, 55, 56, 57] Retention is even better after two nights of sleep.[58] Interrupted or incomplete sleep disrupts this process and impairs cognition.[59]

Not all sleep is equal. The deepest, most healing REM (rapid eye movement) sleep is concentrated in the last hours of the normal sleep cycle. When sleep is cut off, some of its most important functions suffer.[60] "REM sleep stimulates the brain regions used in learning," according to NIH. "One study found that REM sleep affects learning of certain mental skills. People taught a skill and then deprived of non-REM sleep could recall what they had learned after sleeping, while people deprived of REM sleep could not."[61]

The body will demand the sleep it needs in one form or another. Some students will fall asleep in class, while others will experience "mini-REMs" that make them miss a few seconds of instruction at a time, possibly without even knowing it.[62, 63]

Sleep-deprived students scored lower than their well-rested colleagues, even after catching up on lost sleep, according to a recent study from Harvard Medical School published in *Nature Neuroscience*.[64]

In 2002, the U.S. Navy changed sleep times for recruits and studied the result, finding that a later schedule resulted in more sleep and better performance. The Navy first increased rack time for recruits from 6 to 8 hours. Then, the Navy shifted rack time to one hour later. The recruits both got more total sleep with the shift[65] and showed significant improvement on standardized tests as a result of the combined changes.[66, 67] "On average test scores rose by 11 percent with the additional sleep. The odds of observing such a difference by chance is less than one in ten million," the Navy study concluded.[68]

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Fairfax County School Board
2007 Transportation Task Force

FLIP COMMITTEE MEMBERS

As of October 9, 2007

Last Name	**First Name**
Auerbach	Jan
Baker (Chairman)	**Laurie**
Carley	Jennifer
Carroll	Robin
Cherubini	Lisa
Evans	Sandy
Galacia	Carlos
Hecht	Jill
Jakulski	Jill
Kim	Christina
Lindberg	Laurie
Martinez	Donna
McGrath	Patti
Monts	Charles
O'Keefe	P.D.
Stefan	Tim
Stuebner	Bruce
Vdovjak	John
Vennergrund	Carol
Wegener	Christin
Total	**21**

Fairfax County School Board
2007 Transportation Task Force

SLIDE COMMITTEE MEMBERS

As of October 9, 2007

Last name	**First Name**
Berlin	John
Brigleb	Jay
Campo	Ken
Carlson	Walt
Dumont	Rhonda
Floyd	Laura
Galizio	Lyndsie
Kang	Shirley
McKee	Jan
Monaco-Stevenson	Lory
Newmark	Lisa
Nicholson	Beanca
Oehrlein	Bill
Pflugrath	Mike
Ross	Rhonda
Rutherford	Mike
Sims (Chairman)	**Roger**
Steinberg	Peter
Swarm	Joe
Todd	Jeff
Total	**20**

Fairfax County School Board
2007 Transportation Task Force

TWEAK COMMITTEE MEMBERS

As of October 9, 2007

Last name	**First Name**
Ackerman	Rona
Aste	Mahri
Bosley	Mary Ann
Chapman	John
Cox	Stephanie
Cryan	Roger
Culin	Susan
Emery	Mark
Gillette	Kathye
Harbeck	Judy
Lindner	Jenny
Menapace	Michele
Minnich	Pam
Parker	Marlene
Payne	Phyllis
Reinsdorf	Marie
Thibodeau-Robitaille	Jan
Velkoff	Patricia
Vesilind	Rima
Wood	Gayle
Worley (Chairman)	**Chris**
Wright	Doug
Zikowitz	Brenda
Total	**23**

Definitions for the 2007 Transportation Task Force

- Slide
- Flip
- Tweak
- Hybrid

Slide: This involves an equal change to all existing bell schedules. If a ten minute slide was considered, schools that now start at 7:20 and dismiss at 2:05, would start at 7:30 and dismiss at 2:15; schools that now start at 9:15 and dismiss at 3:55, would start at 9:25 and dismiss at 4:05; etc. Slide changes could be in 5 minute increments and could total whatever change is acceptable to the task force. Slide changes could be implemented in total or incrementally over a period of school years, i.e., ten minutes in year one, ten more minutes in year two, etc.

Flip: This involves fundamentally changing the bell schedule so that high schools are no longer on the first bell. Under this change, high school start times would be established, most likely on the second bell, and middle and elementary schools would be placed on the first and third bells. Past scenarios that have been developed have had middle schools on the first bell along with some elementary schools, and remaining elementary schools on the third bell. Other scenarios have had elementary schools on the first bell and middle and some elementary schools on the third bell. It is important to note that middle schools by themselves do not require sufficient buses to be an entire tier on the bell schedule so they must be combined with some high or elementary schools.

Tweak: There are a number of issues with current transportation services. These include the times at which students are picked up and/or dropped off (too early and too late in the day), the length of bus runs (both in boundary and out of boundary), and the numbers of students on each bus (too crowded). Tweaking the system would establish service level parameters that should be met by transportation services. The service parameters that should be considered include:

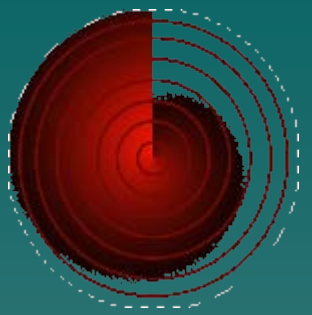
- Length of time students ride the bus
- The earliest time of day students should be picked up (by school level – elementary, middle, and high)
- The latest time of day students should be picked up (by school level)
- The earliest students should be dropped off at schools prior to the start of school

Hybrid: This involves some combination of sliding, tweaking, and perhaps flipping. For example, if school start times were slid back by 20 minutes, a service parameter might be that all elementary students have to be dropped off no later than 5:00 p.m. The caveat about flipping as a part of hybrid is that it would be very difficult, if not ultimately impossible, to change the bell schedules for some schools but not others. Because so many schools serve students from outside their boundary, there is a profound ripple effect to any changes in bell schedules. Other than changes to the start/end times of schools of either end of the bell schedule window, i.e., the earliest schools starting earlier and the latest schools starting later, it is not possible to change the schedules of certain schools without impacting the bells of many other schools.

The “SLIDE” Committee Report

1. Recommendation
2. What we considered
3. Areas of concern as we move forward

The “SLIDE”



It has disappeared from our radar screen.

Gone, good-bye, so long, farewell

- Like the 1998 committee, our committee could not come up with the slightest of reasonable justifications which would make the “Slide” practical. In fact, we found many reasons why it simply will not work.

Our Executive Summary

Conclusion:

The “Slide” is not feasible without significant funding increases, or significant funding cuts from the “optional” transportation services being offered today for every special request

We considered…

- The ideal start time for high school students: We concluded – 8:00
- Reality of what we might be able to accomplish, with significant dollars: possibly 7:45
- Sliding High School bells 25 minutes, and Elementary Schools bells no more than 10 minutes
  - Why only 10 minutes for ES:
    - We drew on the 1998 report – any time later is unacceptable
    - Anymore time goes beyond “civil twilight”
    - > 10 minutes: Impact on SACC
    - > 10 minutes: Impact on Staff – in particular in the morning
  - See Elementary Schools below

Sliding back the High School bell schedule

- Positive impacts of "Sliding" the bell schedule back: (and they are not quantifiable);

  - Beneficial sleep time
  - Students may be more productive because they are more aware (very subjective).
  - Students may be more involved in school activities, however, they are just as likely to become disengaged in the current activity
  - Academics may improve, however, there are no studies or documentation to sustain this argument
  - Parents may be more involved in activities.
  - Minimal effect on ES bell schedule only with additional buses

  - In general, the committee could come up with no significant, sustainable positives for moving the ES bell schedule later in the day. If a slight adjustment was necessary, we could not justify more than 10 minutes.

Moving back the High School bell schedule

- Regarding High Schools (HS), if HS were to SLIDE back 25 minutes, the following negative impact would be observed:
  - Teachers would still leave their homes at the same time to avoid traffic, extending their day; what are the costs?
  - With an extended teacher's day, they will be less likely to sponsor/coach after school activities
  - As a result of the above 2 items, teachers will look for employment in other counties, closer to home
  - Will have an impact on extra-curricular activities
    - Activities are an important part of the scholastic educational experience, whether sports or clubs or bands
    - Negative impact on the marginal student that needs extra help and wants to, or needs to, remain in EC activities
    - After school activities would start later — which would have an impact on *after school* bus runs (students who already have to wait an average of 45 min. would most likely have to wait longer)
  - Moving HS time back more than 15 minutes will significantly disrupt scholastic swimming without other pools being identified
  - Community after school activities would need to start later

- Activities finishing later would put students home later, potentially impacting homework time or bed time
- Teams will have to leave school prior to dismissal for away games
- Longer travel times for games (starting to run in to rush hour)
- HS teams & clubs that practice at ES would impact the gym and field usage for the Community Use and the SACC program (already limited by community programs which start at 5 p.m.; and limited daylight hours in the fall/winter)
- Someone will have to go: use of the pool, gym, or field time
- The school day would have to be reduced for a portion of the athletes
- Later after school activities would put new drivers on the road during evening rush hour

- There would be an impact on students who work and their employers

- Athletics and clubs would be tempted to change their practice/meeting times to the early morning – defeating the reason for sliding the schedule back

- Thomas Jefferson's schedule was reviewed. It was notable that most of their sports teams have an early release from classes for games. It is believed this would not be acceptable on a County wide basis.

Moving back the Elementary School bell schedule

- The committee discussed the impact on Elementary Schools (ES)
  - The committee could come up with no positives for moving the Elementary bell schedule later in the day
  - If a slight adjustment was necessary, we could not justify more than 10 minutes

- If the Elementary Schools were to SLIDE, the following negative impacts would be observed:
  - would create significant need for additional child care in the mornings before school (children are already arriving before school starts, creating additional supervision needs)
  - most typical jobs start between 8 – 9, employees arriving later would greatly impact employers
  - children would most likely be in day-care longer
  - teachers would still leave their homes at the same time to avoid traffic, extending their day

- Children would most likely need to be in care longer (AM)
- Children may be walking home from school or the bus stop in rush hour
- Children may be walking home from school or the bus stop in the dark
- Longer travel times for ES students who take the bus or do Kiss n Ride due to travel during beginning of rush hour
- Would impact the gym and field usage for the SACC program (already limited by rec programs which start at 5 p.m. and limited daylight hours in the fall/winter)
- After school community activities would have to start later
- Homework time, dinner time and bed time would all be pushed back
- Buses would have even more difficulty getting back to HS for after school activity pick up due to travel during rush hour
- May create the need for overtime for custodial staff, or may lessen custodial lunch coverage.

Additional areas the Slide committee reviewed:

- Impact on early morning activities
- Desire to establish earliest pick up time (98)
- Establishing the maximum longest duration of a bus ride
- Sliding only the HS schedule – significant cost (+/- $42M)
- Boundary changes may allow for transportation efficiencies, but are not politically viable
- Bus routes have already been consolidated
- Sleep deprivation: Would kids go to bed at the same time or push it back as well?
- Professional Development: A change in schedule would have little or no impact on professional development as most of this takes place on teachers workdays (in-service)
- Traffic Impact: The travel time for the school's staff must be taken into account. Later afternoon times are going to push that travel back into the evening rush-hour
- In a "slide", we considered the lunch schedule and when students would be eating. Some ES students would not be eating until 1:30-2:00
- Impact on free breakfasts at some schools
- Later start for community activities for ES students; some may choose not to participate in activities

- A general slide **will not** benefit everyone; it will have some negative impact on everyone, more for some than others

- We could not find a comprehensive study that showed quantifiable benefits as measured through test scores and/or GPA to moving from the current schedule, and nothing showing the impact on Elementary students. It is believed a shift in the HS bell schedule may be beneficial, however, even the Arlington reports can point to NO increase in test scores. All other systems that changed are significantly smaller than in Fairfax County.

Summarily, a “SLIDE” can not survive the attacks that would come from 360º. Few pro’s – many cons

Thus, the infamous idea of the “SLIDE” went…..

PERFECTION SHOULD NOT STAND IN THE WAY OF PROGRESS

Fairfax County Public Schools
Transportation Task Force

Report of the “Flip” Committee

October 18, 2007

Flip Committee Objective

- The Flip Committee's objective was to design one recommended bell schedule and one alternative bell schedule that are more consistent with student sleep biology than the current bell schedule.
- The Committee did a preliminary analysis of the strengths and weaknesses of two candidate bell schedules and formed our recommendations based on the knowledge and research of the committee members.
- We assumed that more in-depth analysis of our recommended and alternative bell schedules, based on further research and data collection, would be conducted in the next set of committees.

Flip Committee Fundamental Beliefs

- The current FCPS system of bus routes needs to be reengineered:
  - it is stretched to the breaking point,
  - It is not providing acceptable service in many cases, and
  - It needs to be redesigned to take into account the operation of the new bus facility
- This reengineering and the bell schedule change should occur simultaneously – i.e., review each route once, not twice
- Adolescent and teen students would benefit significantly from later school start times

Flip Committee Process

- Meeting Oct 1
  - Looked at bell schedules considered in previous studies
  - Developed two alternative bell schedules:
    - Flip 1: ES, HS, MS
    - Flip 2: ES, MS, HS
- Meeting Oct 4
  - Developed list of factors/concerns
  - Rated each bell schedule against factors/concerns
- Meeting Oct 9
  - Voted – Flip 2 barely won
  - Individual comments through email
- Report consists of briefing, minutes, and comments

Flip Committee Scenarios

					School Start Times						
Bell Schedule		**7:20**	**7:45**	**8:00**	**8:15**	**8:30**	**8:45**	**9:00**	**9:15**	**9:30**	**9:40**
Current											
ES			**XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX**								
MS		**XXXXXXXXXXXXXXXX**			**X X**	**XX**				**X**	
HS		**XXXXXX**				**X**					
Flip Scenario 1											
ES			**XX**	**XXXXXX**	**XXXXXX**	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXX				
MS							XXXXXXXXXXXXXXX		**xx XX**	**XXXXXXXXXX**	
HS and Secondary Sch						**XXXXXXXX**		XXXXXXXXXXXXXXXXXXXX			
Flip Scenario 2											
ES			**XX**	**XXXXXX**	**XXXXXX**	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXX				
MS						**XXXXXXXX**		XXXXXXXXXXXXXXXXXXXX			
HS and Secondary Sch							XXXXXXXXXXXXXXX		**xx XX**	**XXXXXXXXXX**	

Comparing Flip Scenarios

3 = better than current; 2= same; 1=worse than current

Factor	**Flip Scenario 1** ES - HS - MS	**Flip Scenario 2** ES – MS - HS
Student Sleep Biology		
ES	3	3
MS	3	3
HS	3	3+
Students Transported during "Light"		
ES	2	2
MS	3	3
HS – buses	3	3
HS – student drivers	3	3
Student Supervision/Impacts on Families		
Before School		
ES	3	3
MS	1	1.5
After School		
ES	1	1
MS	3	3
HS	3	3
Mondays ES	1.5	1.5

Comparing Flip Scenarios (cont'd)

3 = better than current; 2= same; 1=worse than current

Factor	**Flip Scenario 1** ES - HS - MS	**Flip Scenario 2** ES - MS - HS
After School Activities		
ES	3	3
MS	1	2
HS	1	1 or maybe 3
Community Sports		
ES	3	3
MS	2	2
HS	1	1 or maybe 3
Coaches	2	2
Bus Run Duration		
Special Ed		
ES	2	2
MS + HS	3	3
HS Academies	3	3
Cost of Bus Operations	?	?

Comparing Flip Scenarios (cont'd)

3 = better than current; 2= same; 1=worse than current

Factor	**Flip Scenario 1** ES - HS - MS	**Flip Scenario 2** ES - MS - HS
Bus Run Duration		
GT		
ES	1	1
MS	3	3
Magnet - ES	1	1
TJ	1	1 or maybe 3
Bus Operations		
Shortage of bus drivers	2	2
Availability of buses for field trips ES	1	1
Availability of buses for field trips MS, HS	2	2
Availability buses for after-school activities -HS	3	3
HS Student's Jobs	2	2
School staff	2	2
Impact on neighborhoods near schools	2	1

Flip Committee Conclusions

- Committee valued student sleep biology, morning ES safety, student pre- and post-school supervision, and safety of HS drivers as most important factors,
- All of these factors are benefited by later upper school start times, except ES students out 30 minutes earlier on average than currently and will need more supervision
- Committee concerned about ability of SACC program to meet increased ES after-school needs and increased costs for childcare incurred by families
- Committee favored Flip 2 (HS starts last) over Flip 1 (MS starts last); most members who favored Flip 1 would be happy with Flip 2 instead
- Flip 2 favored assuming some HS practices/activities could occur before school, and more ES fields would become available earlier in day; if these assumptions are not true, then votes would switch to Flip 1

Flip Member Implementation Concerns

- Implementing a new bell schedule will require significant FCPS, County and community commitment and resources
- The community should remain involved during design, testing, and implementation of new bell schedule transportation program
- The reengineering program will require resources

Additional Flip Member Concerns

- Can we mitigate negative impacts and find “win-win” situations to a bell schedule change?
- Will the Community accept the large change implied by HS starting last?
- Will later bus runs get bogged down in traffic?
- Tweaks to consider:
  - Future boundary changes should consider transportation service (e.g., length of bus runs) and efficiency
  - Don’t let the GT/magnet “tail” wag the dog
  - Can ES early-release Mondays be not so early?

Flip Concerns About Cost

- The current FCPS system of bus routes needs to be reengineered; this reengineering and the bell schedule change should occur simultaneously – i.e., review each route once, not twice – to save money
- Design of a “final” later HS start time bell schedule and the transportation costing process need to be iterative, so that small differences in bell schedule don’t cause costs to balloon unnecessarily
- The time between tiers and expanded time window for pm runs in the flip bell schedules should help to control costs
- Committee members concerned about what method will be used to cost out our proposals and how costs are attributed

Flip Committee Member Concerns about “Costs”

- While costs of busing seem large and tangible, benefits of later start times for HS students are significant and need to be weighed seriously

Flip Committee Recommendations

Proposed Bell Schedule

	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
School	7:50-8:10 am	8:35-8:55 am	9:20-9:40 am	2:30-2:50 pm	ES 3:15-3:35 pm	ES 4:00-4:20 pm
					MS/HS 3:25-3:45 pm	MS/HS 4:10-4:30 pm
ES	**XXXX**	xxxx	x	**XXXX**	xxxx	x
MS		**XXXX**	xx		**XXXX**	xx
HS/Sec		xx	**XXXX**		xx	**XXXX**
	total time span: 1 hour 50 minutes			total time span: 2 hours		

Alternative Bell Schedule

	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
School	7:50-8:10 am	8:35-8:55 am	9:20-9:40 am	2:30-2:50 pm	ES 3:15-3:35 pm	ES 4:00-4:20 pm
					MS/HS 3:25-3:45 pm	MS/HS 4:10-4:30 pm
ES	**XXXX**	xxxx	x	**XXXX**	xxxx	x
MS		xx	**XXXX**		xx	**XXXX**
HS/Sec		**XXXX**	xx		**XXXX**	xx
	total time span: 1 hour 50 minutes			total time span: 2 hours		

Flip Members and Participation

Last Name	First Name	Organization	Number of Meetings Attended	Email Participation	Vote
Auerbach (Sec)	Jan	FC Federation of Citizens	4	X	2
Baker (Chr)	Laurie	High School parent	4	X	2
Carley	Jennifer	Elementary School parent	1	X	
Carroll	Robin	Middle School parent	3	X	2
Evans	Sandy	SLEEP	4	X	1 (or 2)
Hecht	Jill	Elementary School parent	2	X	1 (or 2)
Jakulski	Jill	Middle School principal	4	X	1 (or 2)
Lindberg	Laurie	Middle School parent	4	X	1
O'Keefe	P.D.	FCPS Safe & Drug Free Youth	2		
Stuebner	Bruce	Elementary School teacher	3	X	2
Vdovjak	John	AP Chantilly HS ED Program	2		
Vennergrund	Carol	Middle School parent	3	X	1 (or 2)
Members added by TTF Chair, 9/28/07:				[redacted]	
Cherubini	Lisa	FC Athletic Council	0	X	2
McGrath	Patti	FC Community & Rec Svc	1	X	
Galacia	Carlos	Student	0		
Kim	Christina	Elementary School parent	1	X	2
Martinez	Donna	Adv. Comm. Students with Disabilities	1	X	
Monts	Charles	Boy Scouts	2	X	2
Stefan	Tim	FC Chamber of Commerce	0		
Wegener	Christin	FC Dept of Transportation	1		
Total	**20**				

Some Basics for Considering a Bell Schedule Scenario:
"Flip Committee"
Oct. 1, 2007

1) A successful "Flip" scenario would generally be consistent with the biology of the students.

2) Must have three *flexible* "tiers" (groupings of schools) for delivery

Too expensive if fewer; too early and/or too late if more. Our tiers now are very loose groupings, except for HS. After the HS runs, the rest of the delivery schedule currently is really on a "rolling bell," with MS and ES delivered as soon and as efficiently as they can be. Could do that with ES first, as well.

3) Tier needs to be (loosely) at least 45 mins apart*

(i.e., if first tier starts at 7:45 am, second will be approx. 8:30 am, third will be approx. 9:15 am. If first tier 8 am, others 8:45 and 9:30 am)

4) Elementary children delivered to their base school shouldn't be picked up before about 7 am or dropped off after about 5:15 pm.

This is the "civil twilight" constraint. Not official policy but most involved in issue feel ES should not be walking in the dark. There are exceptions now (such as children picked up/dropped off at their own homes), some ES children now picked up before 7 am. More research being done on actual civil twilight constraints.

5) ES has to go on at least two tiers because of numbers. MS is not full a full tier should be combined with other. HS tier now includes many MS and Spec. Ed runs.

(Balancing tiers helps Transportation operate efficiently.)

6) The longer the window between the earliest and latest start time, the lower the cost of implementation will be.

**According to consultants, Management Partnership Services*

Chart of Potential Scenario Options, in General:

Scenario 1	Scenario 2	Scenario 3	Scenario 4 *Status Quo*	Scenario 5	Scenario 6	Scenario 7
ES	ES	HS/es	HS/MS	MS/ES	MS/hs	ES/MS/HS
ES/HS	ES/MS	ES	MS/ES	ES	HS/ES	ES/MS/HS
MS/es	HS/es/ms	MS/es	ES	HS/es	ES	ES/MS/HS

Lower case lettering indicates that there would be relatively few of these schools on this tier.

Flip Committee members at Oct. 1, 2007, meeting generally felt that Scenarios 1 and 2 above had the most potential.

Key: Better than current bell=3; Neutral=2; Worse than current bell=1

Factor	**Flip Scenario 1** ES: 8-9:15 HS: 8:30 TJ: 9:30 MS: 9:15	**Flip Scenario 2** ES: 7:70-8:55 MS: 8:35-8:55 HS: 9:20-9:40
Student Sleep Biology		
ES	3	3
MS	3	3
HS	3	3+
Students Transported during "Light"		
ES	2	2
MS	3	3
HS – buses	3	3
HS – student drivers	3	3
Student Supervision/Impacts on Families		
Before School		
ES	3	3
MS	1	1.5
After School		
ES	1	1
MS	3	3
HS	3	3
Mondays ES	1.5	1.5

Factor	**Flip Scenario 1** ES: 8-9:15 HS: 8:30 TJ: 9:30 MS: 9:15	**Flip Scenario 2** ES: 7:70-8:55 MS: 8:35-8:55 HS: 9:20-9:40
After School Activities		

Key: Better than current bell=3; Neutral=2; Worse than current bell=1

ES	3	3
MS	1	2
HS		
Mon and Wed clubs/other activities	1	1 or maybe 3
Sports – practices vs. games	1	1 or maybe 3
Community Sports		
ES	3	3
MS	2	2
HS	1	1 or maybe 3
Coaches	2	2
Cost of Bus Operations	?	?

Key: Better than current bell=3; Neutral=2; Worse than current bell=1

Factor	**Flip Scenario 1** ES: 8-9:15 HS: 8:30 TJ: 9:30 MS: 9:15	**Flip Scenario 2** ES: 7:70-8:55 MS: 8:35-8:55 HS: 9:20-9:40
Bus Run Duration		
Special Ed		
ES	2	2
MS + HS	3	3
GT		
ES	1	1
MS	3	3
Magnet - ES	1	1
TJ	1	1 or maybe 3
HS Academies	3	3
Bus Operations		
Shortage of bus drivers	2	2
Availability of buses for field trips ES	1	1
Availability of buses for field trips MS, HS	2	2
Availability buses for after-school activities -HS	3	3
HS Student's Jobs	2	2
School staff	?	?
Impact on neighborhoods near schools	2	1

Key: Better than current bell=3; Neutral=2; Worse than current bell=1

NOTE: PLEASE SEE ACCOMPANYING MINUTES OF FLIP COMMITTEE 10/4/07 MEETING FOR ADDITIONAL INFORMATION.

Tweak Committee Report

Tweak Committee

Four sub-committees were formed:

1. Alternative Transportation Methods
2. Consortia
3. Out-of Boundary Programs
4. Transportation Department Efficiencies

Subcommittee Reports

Each committee met separately to collect data, research, and develop recommendations.

Alternative Transportation Methods

Include taxis and other contracted transportation services,
public transportation,
private vehicles,
bicycling and walking

Alternative Transportation Methods

Examples of programs needing alternatives:

- Contracted transportation services (taxis) currently cost $4.2 million per year.
  - $2.0 million to transport 144 special education students
  - $2.2 million to transport 218 students in alternative programs

362 students total

- Some full-size school buses transport less than 5 students to academies and special programs.
- Of the $964,000 total cost to transport 4,200 Academy students, $405,576 is incurred transporting 261 students on buses with 5 or fewer passengers.

Alternative Transportation Methods

Develop a partnership organization to support the schools in encouraging alternatives to school buses such as:

- Way to Go (Richmond, BC, Canada)
- Safe Routes to School (Arlington, VA)

<u>Examples of resources available:</u>

- Safe Biking Routes to Work Map (Fairfax County, VA)
- PTAs and local community to identify safe walking and biking paths
- Work with county and state transportation planners on pedestrian safety

Alternative Transportation Methods

- Consider linking transportation alternatives with Fairfax County's 20-year environmental plan or "cool counties initiative."
- Find routes on which public transportation can replace school buses

Alternative Transportation Methods

- Survey students on why they travel to school the way they do and alternative methods they would consider taking.

Consortia

FCPS developed 5 consortia to facilitate instruction and transportation of high school students in academies and specialized courses. Each high school consortium is developing similar offerings, eliminating the need for students to leave its boundaries for those programs.

Adopted Consortia

- A
  - Falls Church
  - Langley
  - Marshall
  - McLean
  - Stuart
  - Pimmit Hills*
  - TJHSST*
- B
  - Annandale
  - Lee
  - W. Springfield
  - L. Braddock
  - Edison
- C
  - Hayfield
  - Mt. Vernon
  - South County
  - W. Potomac
  - Bryant*

- X
  - Oakton
  - Madison
  - Fairfax
  - Robinson
  - Woodson
- Y
  - Centreville
  - South Lakes
  - Chantilly
  - Herndon
  - Westfield
  - Mt. View*

*students must meet enrollment criteria

Area 1

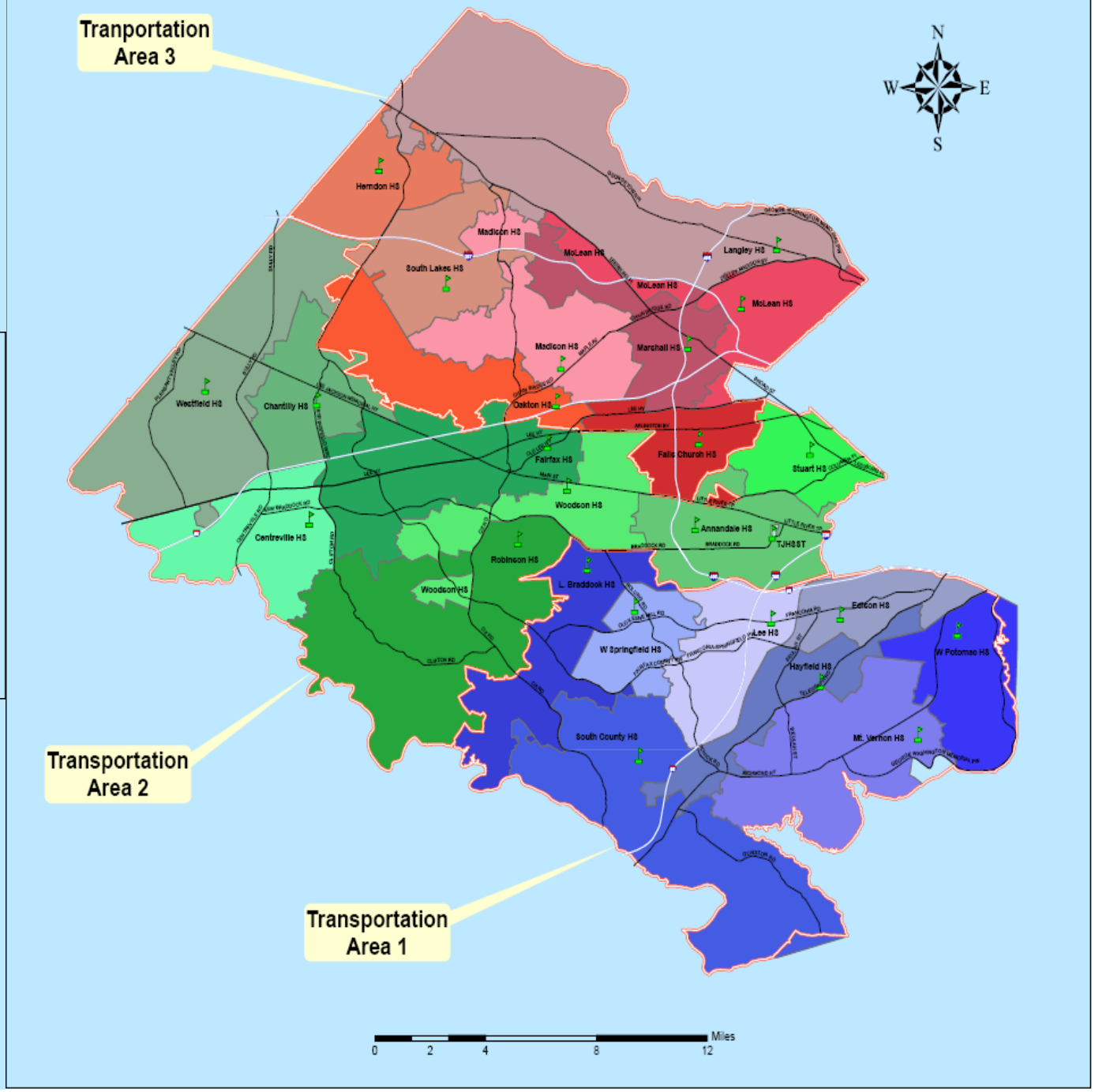
- Edison HS
- Hayfield HS
- L. Braddock HS
- Lee HS
- Mt. Vernon HS
- South County HS
- W Potomac HS
- W Springfield H

Area 2

- Annandale HS
- Centreville HS
- Chantilly HS
- Fairfax HS
- Robinson HS
- Stuart HS
- TJHSST
- Westfield HS
- Woodson HS

Area 3

- Falls Church HS
- Herndon HS
- Langley HS
- Madison HS
- Marshall HS
- McLean HS
- Oakton HS
- South Lakes HS



Consortia

Expand the high school consortia plan to include the elementary and middle schools.

Consortia

Each consortium can be self-contained, providing the following benefits:

- Busing within the consortium alleviates long bus rides
- Student opportunities within the base school or nearby locations
- Cross-consortia busing would be prohibited except for programs that would not be cost effective to duplicate (e.g., hearing and visually impaired or TJHSST).

Transportation and administration should consider decentralization into areas paralleling the consortia

Out-of-Boundary Programs

- No change recommended for mandated programs.
- Bailey's and Hunter's Woods magnet program transportation is highly efficient and should be used as a model for other programs.
- GT students should attend base school GT program or geographically closest GT center. Parents can pupil place students, but transport to another GTC would not be provided.

Out-of-Boundary Programs

Grandfathering

- Do not provide transportation.
- Students who wish to attend the school of their choice should pupil place and the family should provide transportation.

Out-of-Boundary Programs

Administratively Placed Students

- Consider transportation requirements
- Make every effort to place these students in schools for which there already is nearby transportation.
- Require registration for transportation and if legally possible, a $150 registration fee (waived for free and reduced lunch.)

Out-of-Boundary Programs

Academy transportation

- Provided only when there are 5 or more students riding the bus.

Exception-to-ride

- Eliminate or institute in the second quarter to avoid conflict with the enormous workload that supervisors experience in September.

Out-of-Boundary Programs

- If FCPS continues to provide bus transportation for non-mandated programs, establish centralized pick-up locations (like magnet transport). The family should provide transportation to these locations.
- Consider using buses designated for special education, academies and magnet schools as potential transportation options for other out-of-boundary students.

Out-of–Boundary Programs

- Restructure the three transportation areas to five or six with bus compounds, dispatch points and operations facilities at each site.
- Optimize the use of MapNet, so staff can use it to optimize routes and trip couplings.
- Re-evaluate each bus route twice yearly.
- Have students register online for transportation before the outset of the academic year.

TJHSST Transport

- Add a route supervisor for TJ.
- Allow students to self-select bus stops or centralized pick-up points they will use.
- De-couple the TJ start times from the other high schools.
  - Stop using high school buses to transport TJ students;
  - consider using elementary or middle school buses or special education, academies, and magnet school buses.
- Provide information on public transportation close to TJ—it may be faster for some students.
- Use the seats on buses from other jurisdictions coming through Fairfax County to TJ.

Transportation Department Efficiencies

- Focus on making the efficiency of the general education bus routes a priority to serve the majority of the student body.
- The sub-committee did not review Special Education transportation since it has its own transportation area and specialized requirements.

Transportation Department Efficiencies

Streamline busing for non-mandated programs

- Make parents responsible for some or all out-of-boundary transportation as they are in the language immersion program.
- Use centralized pick-up points or closest in-boundary stops to increase efficiency if transportation is to be provided
- Put a GT center/program in each middle school and/or elementary school.
- End transportation for grandfathering
- End or limit transportation to alternative schools and academies

Transportation Department Efficiencies

Improve transportation areas through

- Decentralized fleet management
- Rework number of transportation areas and boundaries to more effectively schedule, route, maintain and park buses
- Create additional bus parking areas convenient to drivers
- Centralized fleet dispatching
- Better communication
- Enhanced cross boundary capabilities
- Optimize bus routes and stops
- Acquire additional data analysis technology

Transportation Department Efficiencies

Reduce dependency on bus transportation by

- Re-engineering crosswalks
- Adding crossing guards
- Reviewing walking distances and walking routes
- Improving facilities and policies for kiss and ride

Tweak Committee Recommendations

These are the consensus recommendations of the Tweak Committee derived from discussions following subcommittee reports.

- General Education and Special Education transportation are the transportation priorities.
- All non-mandated out-of-boundary programs should have either centralized pick-up points or students should be required to go to the closest in-boundary bus stop for transportation.
- Require a minimum of ten students from each centralized pick-up point for transportation to academies or alternative programs.

Tweak Committee Recommendations

4. Institute a consortia plan at the elementary, middle and high school levels for the delivery of instructional services and transportation.
   - Add GT Centers to all middle schools and increase the number in elementary schools
5. Survey students on why they travel to school the way they do and alternative methods they would consider taking.
6. Dedicate resources to facilitate alternate methods of transportation and encourage walkers and bicyclists.
7. End transportation services for grandfathering.

Tweak Committee Recommendations

8. Consider the transportation needs of administratively placed students before placing them.
9. Eliminate the exception to ride program or start in the 2nd quarter.
10. De-couple TJHSST from high school start times and provide TJ with its own route supervisor.
11. Restructure transportation areas by decentralizing fleet management and centralizing fleet dispatching.
12. Acquire technology that will assist in transportation optimization and data analysis.

General Parameters Recommended by the Tweak Committee

Set clear objectives (parameters) for the transportation department, such as:

- Bus arrival times before the first bell should be
  - 5-15 minutes for elementary students
  - 5-20 minutes for middle school students
  - 5-30 minutes for high school students
- Length of time students ride the bus should be minimized with a goal of:
  - 30 minutes or less for elementary students
  - 45 minutes or less for middle school students
  - 45 minutes or less for high school students
- Buses should depart schools 10 – 15 minutes after the last bell
- Track the number of students who opt out of transportation and the number of service complaints.

Data

- Time constraints limited our ability to consider certain aspects of the “Tweak” task.
- Some of the data we requested was not available.

Subcommittee Membership

Alternative Transportation Methods

- Marie Reinsdorf
- Jenny Lindner

Consortia Subcommittee

- Rima Vesilind
- Doug Wright
- **Judy Harbeck**
- Marlene Parker
- John Chapman
- Gayle Wood
- Jan Thibodeau-Robitaille

Subcommittee Membership

Out-Of-Boundary

- Mahri Aste
- **Patricia Velkoff**
- Mary Ann Bosley
- Kathye Gillette
- Michele Menapace
- Phyllis Payne

Transportation Efficiencies

- Mark Emery
- Susan Culin/Pam Minnich (police alternates)
- B.Z. Zikowitz
- Roger Cryan
- Rona Ackerman
- **Chris Worley***
- Stephanie Cox

*Chair of the Tweak Committee

TRANSPORTATION TASK FORCE 2007
PROPOSED BELL SCHEDULES FOR IMPACT COMMITTEES

OPTION A						
Flip C'ee's top-rated proposal	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:50-8:10	8:35-8:55	9:20-9:40	2:30-2:50	ES 3:15-3:35	ES 4:00-4:20
					HS/MS 3:25-3:45	HS/MS 4:10-4:30
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		XXXX	xx		XXXX	xx
HS/SS		xx	XXXX		xx	XXXX
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

OPTION B						
Option A adjusted to 20 minutes earlier	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:30-7:50	8:15-8:35	9:00-9:20	2:10-2:30	ES 2:55-3:15	ES 3:40-4:00
					HS/MS 2:55-3:25	HS/MS 3:50-4:10
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		XXXX	xx		XXXX	xx
HS/SS		xx	XXXX		xx	XXXX
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

OPTION C						
Flip C'ee's second-best proposal	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:50-8:10	8:35-8:55	9:20-9:40	2:30-2:50	ES 3:15-3:35	ES 4:00-4:20
					HS/MS 3:25-3:45	HS/MS 4:10-4:30
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		xx	XXXX		xx	XXXX
HS/SS		XXXX	xx		XXXX	xx
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

OPTION D						
Option C adjusted to 20 minutes earlier	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:30-7:50	8:15-8:35	9:00-9:20	2:10-2:30	ES 2:55-3:15	ES 3:40-4:00
					HS/MS 2:55-3:25	HS/MS 3:50-4:10
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		xx	XXXX		xx	XXXX
HS/SS		XXXX	xx		XXXX	xx
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

OPTION E						
Flip #6 & #7, adjusted & combined	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:30-7:50	8:15-8:35	9:00-9:20	2:10-2:30	ES 2:55-3:15	ES 3:40-4:00
					HS/MS 2:55-3:25	HS/MS 3:50-4:10
ES	xx	xx	XXXX	xx	xx	XXXX
MS	XXXX			XXXX		
HS/SS		XXXX			XXXX	
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

FCPS School Board

Transportation Task Force

Service Parameter Decisions

General Meeting of December 1, 2007

Transportation Task Force -TTF

Service Parameter Decisions

After an open and wide-ranging general discussion, the Task Force voted on a position with regard to FCPS-wide Transportation Service Parameters. The items discussed and the final outcomes are shown in the following slides.

The items were put before the Task Force as questions or choices from a list, with the answers being its collective decisions.

A second meeting is needed to complete this effort. It will be held December 11th.

- Eliminate the “Exception to Ride” program?

YES	38%
NO	**62%**

Decision: retain the “Exception to Ride” program

- Move “Exception to Ride” program start to the 2nd quarter of the school year?

YES	25%
NO	**75%**

Decision: “Exception to Ride” program will continue to be available at the start of the school year.

- “Civil Twilight” shall be an absolute rule/barrier, for within boundary transportation of Elementary School students?

YES	21%
NO	**79%**

Decision: “Civil Twilight” is not an absolute requirement for within boundary transportation of Elementary School students.

- “Civil Twilight” shall be ignored, for within boundary transportation of Elementary School students?

YES	28%
NO	**72%**

Decision: “Civil Twilight” shall not be ignored during within boundary transportation of Elementary School students.

- Should “Civil Twilight” be observed for within boundary Elementary School students at their first pick-up, except for two weeks of the year or for at-home pick-ups?

YES	**82%**
NO	18%

Decision: Observe “Civil Twilight” for within boundary Elementary School students at their first pick-up, except for two weeks of the year or for at-home pick-ups.

- Should High School (HS) and Middle School (MS) students have the same “bus ride time” limitations?

YES	**97%**
NO	3%

Decision: HS and MS students will have the same “bus ride time” limitations.

- HS and MS students within boundary ride times?

30 minutes or less	3%
45 minutes or less	15%
60 minutes or less	48%
more than 60 minutes	33%

Decision: HS & MS students may not ride a bus for more than 60 minutes.

- Elementary School (ES) students within boundary ride times?

30 minutes or less	13%
45 minutes or less	48%
60 minutes or less	26%
no absolute limit	13%

Decision: ES students may not ride a bus for more than 45 minutes.

- Should “Grandfathering” be permitted, for both school boundary and programmatic boundary changes? *(NOTE: in an attempt to reach consensus, there were two votes taken, with significant discussion before each. Both are shown.)*

First Vote

YES	55%
NO	45%

Second Vote

YES	52%
NO	48%

Decision: None – no clear consensus obtained

- Should the subject of “Grandfathering” be tabled until a later meeting?

YES	**96%**
NO	4%

Decision: Table “Grandfathering”

- ES drop-off/arrival time window, and allowed to enter the school immediately

5 – 15 minutes	22%
5 – 25 minutes	70%
other	7%

Decision: Elementary School students shall arrive no later than 5 minutes before school, and no earlier than 25 minutes before school, and are to be allowed to enter the school immediately.

- Middle School drop-off/arrival time window, and allowed to enter the school immediately

10 – 20 minutes	18%
10 – 25 minutes	82%

Decision: The MS arrival/drop-off window is 10 – 25 minutes before school starts, with immediate entry.

- High School drop-off/arrival time window, and allowed to enter the school immediately

10 – 25 minutes	64%
10 – 35 minutes	36%
other	0%

Decision: The High School arrival/drop-off window is 10 – 25 minutes before school starts, with immediate entry.

FCPS School Board

Transportation Task Force

Service Parameter Decisions

Second Session

General Meeting of December 11, 2007

Transportation Task Force -TTF

Service Parameter Decisions

As on December 1, 2007, after an open and wide-ranging general discussion in December 11, 2007, the Task Force voted on a position with regard to another set of FCPS-wide Transportation Service Parameters. The items discussed and the final outcomes are shown in the following slides.

The items were put before the Task Force as questions or choices from a list, with the answers being its collective decisions.

This completes Task Force work on identified parameters. If others emerge, they will be addressed at that time.

- “Grandfathering” school boundary changes?

YES – 1 year	**73%**
YES – 2 years	15%
YES – 3 years	12%
YES – Unlimited	0%
NONE	3%

Decision: Grandfathering for School Boundary changes is acceptable, but for ONE YEAR only

- “Grandfathering” for Program Changes (i.e., change in GT Centers, etc.)

YES	7%
NO	**93%**

Decision: Grandfathering for program changes should NOT be permitted.

- Should the current home-to-school walking distances be retained for all students?

YES	**98%**
NO	2%

Decision: Current home-to-school walking distances for all students should NOT be changed.

- Should the maximum home-to-bus stop walking distances for Elementary School students be increased to one-half mile (State limitation is one mile)?

YES	**90%**
NO	10%

Decision: Transportation should optimize bus stop placements by making better use of permissible walking distance, up to, but not exceeding one-half (1/2) mile for Elementary School students, with a goal of reducing the number of bus stops and improving transport efficiency and run length.

- Should the maximum home-to-bus stop walking distances for Middle and High School students be increased to three-quarters of a (State limitation is one and one-half miles)?

YES	**76%**
NO	24%

Decision: Transportation should optimize bus stop placements by making better use of permissible walking distance, up to, but not exceeding three-quarters of a mile for Middle and High School students, with a goal of reducing the number of bus stops and improving transport efficiency and run length.

- Permit Elementary School students to ride with non-ES student?

YES	19%
NO	**81%**

Decision: Elementary school students should only ride with other Elementary School students, except for current rare and unusual circumstances related to centralized pick-ups, such as TJHSS&T.

- Permit Middle and High School students to ride together?

YES	**100%**
NO	0%

Decision: Middle and High School students may ride together.

- Provide transportation to GT Centers for Elementary and Middle School students?

YES **68%**

NO 32%

Decision: Transportation may be provided for Elementary and Middle School students to within-boundary GT Centers

- Provide transportation to a GT Center when the base school has a GT Center?

YES 7%

NO **93%**

Decision: Transportation should NOT be provided to a GT Center when the base school has a GT Center

- Should non-mandatory out-of-boundary transportation be provided?

Decision: None. Item tabled for later decision.

- Should we expand the use of centralized pick-up locations for students attending non-mandated out-of-boundary programs?

YES **83%**

NO 17%

Decision: The use of centralized pick-up locations should be expanded for all students attending non-mandatory out-of-boundary programs.

Community Impact Committee Members

Rona Ackerman
Laurie Baker
John Berlin
Walt Carlson
John Chapman
Lisa Cherubini
Susan Culin
Sandy Evans
Laura Floyd
Kathye Gillette
Barbara Krebs
Patti McGrath
Pam Minnich
Charles Monts
Lisa Newmark
MARIE REINSDORF, Chairman
Rhonda Ross
Roger Sims
Tim Steffan
Joe Swarm
Jeff Todd
Christin Wegener

Employee Impact Committee Members

Jan Auerbach
Ken Campo
JEN CARLEY - Chairman
Rhonda Dumont
Lyndsie Galazio
Laurie Lindberg
Geneva Lindner
Jan McKee
Michele Menapace
P.D. O'Keefe
Bill Oehrlein
Marlene Parker
Mike Pflugrath
Mike Rutherford
Bruse Stuebner
Jan Thibodeau-Robitaille
Terry Tuley
Rima Vesilind
Chris Worley
Brenda Zikowitz

STUDENT IMPACT COMMITTEE MEMBERS

Mahri Aste
Mary Ann Bosley
Jay Brigleb
Robin Carroll
Stephanie Cox
Roger Cryan
Mark Emery
Carlos Galicia
Judy Harbeck
Jill Hecht
Jill Jakulski
Christina Kim
Lory Monaco-Stevenson
Beanca Nicholson
Phyllis Payne
Peter Steinberg
John Vdovjak
PATRICIA VELKOFF, Chairman
Carol Vennergrund
Doug Wright

Contents

Introduction

To the Transportation Task Force,

In this report we review the potential impacts of the 5 proposed bell schedules (see: http://www.fcps.edu/fts/taskforce07/documents/ttfbellshedules.pdf) on the community. Community was identified by a list we came up with of topics: groups of people, places, or functions or attributes.

Our work in relation to the student and staff impact committee work: while our discussion may overlap with student and staff impact committee work, we focus on the impact on community members who are not school students or staff.

We started by defining our topics. A topic is an organization or group of people ("parents"), or other important community area of focus ("scheduling facilities").

Then we began discussing impacts.

We next created a uniform report template to help us best organize the material. "Part 1," is for exploring, discussing, and recording the basis for our scoring; it is not a record of consensus on potential impacts. We used general "what if one hour later or one hour earlier" questions when discussing impacts.

Meetings and activity during or around:

Nov 19:	kick-off meeting
Nov 26 and Dec 6:	Gather data
Dec 11 – Jan 1:	Recess
Jan 2:	Compile Report
Jan 8:	Present report in progress
Jan 15:	Score impacts and review report
Jan 22:	Score impacts for top 3 & bottom 3 and select preferred options

Impact statements in the report: Impact statements are members' opinions and statements discussing potential impacts. Where the statement is corroborated by research or a study, that is noted. No committee member's statement of potential impact or other concerns are intentionally left out. Disagreeing views are introduced with "point" and "counterpoint."

Other Documents:

Please see our bibliography, "Community Impact Committee," "Bibliography" on the Transportation Task Force website's "Committees" section. Thank you to Walt Carlson for compiling this.

Our scoring results will be posted in a separate document.

Committee Members

1. Rona Ackerman, Elementary School parent *
2. Laurie Baker , High School parent *
3. John Berlin, FC Park Authority *
4. Walt Carlson, Fairfax County Federation of Citizens Association *
5. Susan Culin, FC Police, Traffic Div *
6. Sandy Evans, SLEEP *
7. Kathye Gillette, Secondary School parent *
8. Patti McGrath, Fairfax County Community & Recreation Services *
9. Pam Minnich, FC Police, Youth Services Div *
10. Charles Monts, Boy Scouts *
11. Marie Reinsdorf, Secondary School parent, Committee Chair *
12. Rhonda Ross, FC School-Age Child Care *
13. Roger Sims , FC Athletic Council *
14. Joe Swarm, Asst Director of Student Activities *
15. John Chapman, FCPS After-School Programs
16. Lisa Cherubini, FC Athletic Council
17. Laura Floyd, Elementary School parent
18. Barbara Krebs, Girl Scout Council of the Nation's Capital
19. Lisa Newmark, Elementary School parent
20. Tim Steffan, FC Chamber of Commerce
21. Jeff Todd, Mt.Vernon/Lee Chamber of Commerce
22. Christin Wegener, FC Dept of Transportation

"*" = attended one or more meetings, and voted when we scored impacts.

Thank you to all of you who went out of your way to participate!

Community Topics List

Topic/Sub-topic Table of Contents.

We review these topics. The topic of Sports is presented in 4 sub-topics for its size & complexity.

1. Sports, Facilities and Practice and Game Times
2. Sports, Transportation
3. Sports, Coaches
4. Sports, Participation & anything else
5. Clubs (consider same categories as for sports)
6. FCPS School Age Child Care (SACC)
7. Other Day Care
8. Parents: jobs, daily schedule; health and quality of life
9. Student Employment, volunteering
10. Public Safety, including crime & delinquency
11. Traffic, volume and safety
12. Fairfax County Taxpayers: cost/benefit statements, taxpayer perception
13. Environment: any reduced bus or private car trips resulting in benefit to the environment? Any reduced use of utilities?

This describes the document structure we prepared. We ended up making less use of some sections than originally anticipated.

Key to the tables: Each topic (community entity or group of persons) is in its own table, with these rows:

Topic:	The topic, from our table of contents, below
Description:	Including a description of who is affected; who manages/is in charge (for example, in the case of scheduling of sports facilities, we identify the organization/organizations in charge of scheduling). If we have any hard or estimated counts (how many elementary students are in day care?, for example), include that information here.
Potential Impact:	The heart of the report. This is our statement, as of when we write this, on impacts. Later, when we finalize the report, we may want to make a separate row for the final call, and retain preliminary discussion here.
Transition Requirements:	When we discuss impact there will be impact of the transition – it's important to identify the resources required, community dialogue required, and potential political issues, associated with making the change. This is where, for instance, we can make some general notes, on what would be involved in re-scheduling coaches, changing practice times – all those things come with labor & material requirements.
Majority & Minority Opinions:	This is where we can record agreements and disagreements on impacts, both during the current discussion / presentation phase and later at the consensus/voting phase.
Other comments:	We can put any recommendations to the School Board on related topics; and recommendations on the planning process itself, such as whether a survey or other type of engagement vehicle would (or would not) be helpful.
Other Models:	Here we may summarize findings about other jurisdictions' experiences. For example, how jurisdiction A or B handles sports practices with later start times.

Each table should be 1-2 pages. We list reference documents at the end of this report, and refer to them in the table as needed. These reference documents are or will be posted on the TTF website.

Tables: Discussion of Impact by Topic

Topic:	***1/ Sports: Facilities and Practice and Game Times and Scheduling***
Description:	Includes available use of county and school facilities for adult sports. Who schedules facility use: Fairfax County Park & Recreation (pools, exercise rooms, racquetball courts, club space, etc), Fairfax Co. Community and Recreation Services, FCPS directors of student activities and MS after-school specialists, elementary school principals. Joint Scheduling software used by CRS and FCPS. Approximately 70 percent of the high school population participates in student activities, and nearly 40 percent of all high school students participate in Virginia High School League (VHSL) athletic or academic activities [http://www.fcps.edu/supt/activities/activities.htm]. During the peak sports season (winter), FCPS reports that 10,136 students (about 22% of HS students) participated in sports in Winter 07. Fall '06 participation was 8,479 and spring '07 was 8,387. [Source: FCPS http://www.fcps.edu/fts/taskforce07/documents/sportssurvey0607.pdf].
Potential Impact:	Need for major rescheduling of many if not all sports practice times and club times around a different start and end time. Potential significant impact on community use of fields, school gyms, and pools. MS may be least affected. Community use now starts at 6 pm. ES fields and gyms might be available earlier for neighborhood, club, league and community use, except under Option E. Now available for community use starting about 5 pm. Question of how much demand for mid-afternoon use. Adult supervision for ES students may not be available as early as facilities. Potential for AM practices as an alternative for HS sports. Some HS and MS have before-school practices and activities currently. (See report from Student Impact Committee.) Could reduce availability of HS fields and gyms for community use and/or require reduction or adjustment of HS sports practice time. Some game times for some sports would need to be changed. Lighting may be required for late tennis court use where not required now. Early AM practice should consider current field maintenance schedules (though move to artificial turf fields may mitigate – see next). Plans by the school system and county for new synthetic turf fields, which increase use capacity by 62 percent, should help ease impacts. [Source: Fairfax County Park Authority website on 2006 bond and FCPS School Board BoardDocs consent agenda item for Regular Meeting, Jan. 10, 2008.] Off-campus use of facilities by high schools already change "based on facility availability, coaches'

	schedules, and other issues." [see p. 13, "Studying the Impact of 5 new bell schedules under consideration]
Transition Requirements:	MAJOR rescheduling. Possibly lose some volunteers during transition.
Majority & Minority Opinions:	
Other comments:	Potential for increased volunteers for HS extracurricular activities because end times closer to typical adult work end times. More sleep can result in improved athletic performance and fewer sports injuries [Source: Collection of Articles on Athletic Performance and Sleep"] Point: Fairfax County built public pools at RECenters "with the understanding that they would provide a home for local high school swim teams" – this was part of the decision by county planners to not build pools in schools. [See: "Why is the Pool Closed for High School Swim?" and Fall 2007 article from ParkTakes]. Counterpoint: The pools also must be financially self-sufficient and must account for prime income time. Pool time would not be available for late dismissal unless FCPA changed its "prime time" scheduling. Currently there is often "dead" time between end of HS and beginning of some sports practices where students "hang out," that could be eliminated with practices starting sooner after HS end time. Q: Different requirements at different schools about where kids can be between end of school and start of practice? Is there an FCPS rule or school by school? A: There is no rule. Q: Who currently supervises students staying at school after class but before practice, especially if practices start late? A: There is no specific Supervisor, how, as a rule, all the coaches and DSA (Director, Student Activities) staffs monitor what is going on. Students may use this time to meet with teachers, take makeup tests. Point: Many game/meet times are Friday nights (e.g., swim, football) and weekends (e.g., crew) and could stay the same. Counterpoint: Friday nights cannot stay the same if the schedules change. Saturday times are not impacted. VHSL rules prohibit activities on Sundays. Discussion of length of practice: Our impact assessments are based on what we believe to be the norm, 2-hour practice times. Schools should monitor length of practice times to determine if they are going over this. AM practices was a hot topic.
Other Models:	Other jurisdictions that have moved to later start times feared an impact on sports but did **not** have

	significant negative results. Adjustments made with minimal problems. Generally equal or increased participation. [See reports on Minneapolis, Wilton, Conn. and Arlington, "Community Impacts from Other Jurisdictions Changing to Later HS Start Times, Other Local Data." Also see "How Do Arlington County and Thomas Jefferson High School for Science and Technology (TJ) Schedule Sports Practices and Games Around Their Later End Times?"] TJ has all sports and works practice and game times around a 3:50 pm end time. The sports that require early release from TJ during class time are freshman boys basketball and girls tennis for some away games. [Source: interview 12/3/07 with Melody Modell, TJHSST Director of Student Activities and Athletics, see above reference] *Loudoun county releases students early for games. Arlington does not (so that academics will not be compromised). TJ does release students early for games.

Topic:	***2/ Sports, Transportation***
Description:	FCPS Transportation, student drivers, parent drivers. Where students practice off-site, bus transportation may be provided, or may not.
Potential Impact:	By having elementary early, buses should be available for after school activities earlier. Availability of buses for after-school practices would reduce traffic caused by carpooling to these activities and would reduce student driving during this period. Would reduce need for parent volunteer drivers. IF AM practices occur, in place of current PM practices, there would be less transportation activity in the afternoon, more transportation activity in the morning.
Transition Requirements:	Sports bus rescheduling around new bell schedules
Majority & Minority Opinions:	
Other comments:	
Other Models:	

Topic:	***3/ Sports, Coaches***
Description:	Hiring, retention, and scheduling of coaches. Coaches are contract employees of the school system. They are hired for the duration of the school year, whether they coach for one or more seasons. Some have a primary job at a high school; some at middle or elementary school; and some from the private sector.
Potential Impact:	Could lose some coaches whose schedules align with current HS bell schedules. Could gain some coaches whose schedules align with new HS bell schedules. The new bell schedule with ES going early would allow more FCPS teachers to get involved in coaching since their day will end earlier.
Transition Requirements:	
Majority & Minority Opinions:	
Other comments:	
Other Models:	

Topic:	***4/ Sports, Overall Participation, & anything else*** **This category was removed – all discussion ended up being about student impact**
Description:	
Potential Impact:	
Transition Requirements:	
Majority & Minority Opinions:	
Other comments:	
Other Models:	

Topic:	***5/ Clubs***
Description:	Clubs using school facilities; including sports leagues such as youth football leagues. After-school participation of students in school or non-school clubs (from view point of community club management)
Potential Impact:	Clubs generally fit around whatever school schedule exists at each level.
Transition Requirements:	
Majority & Minority Opinions:	
Other comments:	Some examples from one member's experience: FLEX (foreign language) was done before school at my daughter's elementary school, parents provided transportation. Future Problem Solving has sometimes been before school at ES, sometimes after, sometimes on weekends at people's homes. Girl Scouts: often held in the evenings at churches, community centers, people's homes, not necessarily dependent on school facilities.
Other Models:	

Topic:	***6/ School Age Child Care Program (SACC)***
Description:	SACC is operated by Fairfax County and takes place in the school facilities and is only available to full-time or near-full time working parents; *also student parents and those who may not be able to care for their children because of a medical condition. Approximately 10,000 students are enrolled in SACC. SACC centers open for children at 7:15 am and close at 6:15 pm. We utilize the school gyms in the morning and afternoon. In the afternoon we have priority of gym use until 5:00. We also utilize the school fields.
Potential Impact:	SACC employees would work fewer hours in the morning, more in the afternoon. *Do we anticipate an increase in demand for SACC after school, if high school siblings arrive home after ES students?* Longer time in the afternoon means the program can be augmented with sports or other programs. CIC Tuesday night (1/2/08) generally thought either mild or major positive impact on SACC from all scenarios except Option E. Less AM SACC needed with earlier ES start time, potential for more vibrant PM SACC program with longer block of time after school.
Transition Requirements:	Changed staffing schedules at some SACC facilities
Majority & Minority Opinions:	
Other comments:	Should use of SACC be prioritized for those families who cannot afford private day care – currently is first-come, first-served. Generally, SACC is not able to serve all who need it – long waiting lists. SACC waiting lists are longest for before-school care at late-opening elementary schools, according to SACC Program Administrator. ES start times would be earlier at many ES in most scenarios under consideration and could reduce that demand and those waiting lists. Would there be an increase in cost for SACC, to families who use it after-school?
Other Models:	Arlington County: there was a concern that there would be increased demand for extended day care with high school siblings in school later in the day, but this concern turned out to be unfounded. [See: Impact of 2001 Adjustments to High School and Middle School Start Times (June 2005), Arlington County Public Schools]

Topic:	***7/ Other Day Care***
Description:	Private before and after school daycare for ES students.
Potential Impact:	After-school day care for ES would need to be available earlier in the afternoon. Private day care is a business, set up to respond to client needs, so we would not consider this when grading for negative or positive impact; but we might want to consider day care offered by churches and other social service agencies. Extra business for the daycare in the afternoon, less business in the morning. Extra money for parents to pay in the PM. Parents who currently use before school day care (a number we believe to be smaller than those who use after-school day care), would save the cost of such. Daycares and clubs which provide transportation to & from school would have to change their transportation schedules. If MS and/or HS after ES, some families would lose older sibling as child care provider in PM, but could gain help of older sibling getting younger off to school in AM.
Transition Requirements:	Sufficient time for operators to staff. Publicity and advance notice.
Majority & Minority Opinions:	
Other comments:	While some families would lose older sibling as child care provider (see above), JEB Stuart parent survey found 89 percent said a later start/end time would NOT cause a problem for either their work schedule or their child care arrangements (combined question, not broken down by work/child care).
Other Models:	Child care was not as big an issue as feared (“Community Impacts from Other Jurisdictions”)

Topic:	***8/ Parents: jobs, daily schedule; family health and quality of life***
Description:	Parents' jobs, commuting schedules, before & after school arrangements (beyond what is discussed under day care.
Potential Impact:	ES Parents: Parents with full-time day jobs who need to depart for work at or after an earlier starting time for elementary schools would no longer have to make day care arrangements or leave ES students at home alone. They already have to make day care arrangements for after school, today, so would need only to arrange for day care to begin earlier. Potential for reduced tardiness and absenteeism, for students from homes where parent is unavailable to make sure student gets up and to school on time at the current early hour. Would benefit task force to consult with school counselors and attendance office staff; and study Fairfax county absenteeism and tardiness rates, before and after Fairfax rolled high school start time to current schedule. Overall attendance would be expected to increase [see "Minneapolis Public Schools Start Time Study, Executive Summary, August 2001"] *How many parents now get up just to get their HS students out the door on time?* Testimony from other parents : reduced sleep for everyone in the family negatively affects health and quality of family life.
Transition Requirements:	Notification far in advance of a change, coupled with repeated and frequent reminders, will allow families, ranging from those who can easily adjust, to those who will have more difficulty adjusting their schedules, adapt. [Per conversation with Elaine Furlow, former Arlington School Board member, the biggest factor for families is how the new schedules will work for their – give families time to think about the details of their morning and evening routines, & how they would be affected].
Majority & Minority Opinions:	
Other comments:	In the case of parents who currently have to leave for work before their ES students go to school. For how many would that change, with early ES? How many would be able to "flex" their schedules to make up for any remaining departure time difference? JEB Stuart parent survey found 89.3 percent said later start and end time would not cause a problem for their work schedules or child care arrangements. Of those who said it would cause a problem with one or the other, only about one-quarter said it would be difficult to accommodate the change. Reduced school absences and medical costs for adolescent illness, reduced depression and cost thereof, fewer trips to school clinics and counselors [Source: U. of Minnesota CAREI study "Changing Times: Findings from the First Longitudinal Study of Later High School Start Times," Kyla Wahlstrom, associate director of the Center for Applied Research and Educational Improvement (CAREI) at the

	University of Minnesota, NASSP Bulletin, Vol. 86, No. 633, December 2002. http://cehd.umn.edu/CAREI/Reports/docs/SST-2002Bulletin.pdf]. According to a 2005 Fairfax County Youth Risk Survey Report, about one-third of Fairfax County HS students exhibit classic signs of depression, and 15 percent of FCPS high school students have seriously considered suicide [http://www.fairfaxcounty.gov/demogrph/pdf/youth2005.pdf]. Reduced absences of parents from work for student illness. Major engagement with the community is recommended. We recommend that school governance use strategies for engaging all groups of citizens, for working iteratively with the community. What about the current Monday half-day for ES students? This requires parents to have a different schedule on Mondays, and requires 2 different transportation schedules for the Transportation department. Can eliminating half-day be considered as part of this change?
Other Models:	A University of Minnesota survey a year after changes in Minneapolis found that 92 percent of parents were happy with the change. They noted improved relationships with their teens and better connection time. * "It is interesting to note that the challenges for getting high school kids to school were greater with the earlier starting time in the urban areas because parents may not have had a car to drive the late-awaking student to school. Once the later start time was implemented, fewer kids needed to get rides to school because they were able to wake up later and catch the bus as they were supposed to do." Kyla Wahlstrom, Director, Center for Applied Research and Educational Improvement, University of Minnesota. Arlington County established a hotline to field parent complaints and difficulties with the new schedule but closed it down after a short time because so few parents called.

Topic:	***9/ Student Jobs; Student Volunteering***
Description:	We can divide student workers into 2 categories: those who work for spending and extra money for themselves (we assume this is the majority), and those who work to help support their families.
Potential Impact:	Jobs in this area are typically service jobs, not manufacturing shift jobs, and we don't foresee that a later high school end time would present a problem to the student employees, as long as plenty of advance notice is provided. There will be less time in the afternoon for volunteering.
Transition Requirements:	Publicity and advance notice.
Majority & Minority Opinions:	
Other comments:	For good community relations and to solicit feedback, it would be helpful to contact the chambers of commerce in the county with literature on why the change is being proposed and to ask for their feedback. In JEB Stuart parent survey, 89.5 % said a later end time would NOT conflict with a job their student held currently. JEB Stuart survey of nearly 700 students found that 22.7% worked. (Note: Stuart has a high number of low-income students--more than 50% qualify for free and reduced lunch.) Average start time for weekday jobs was 4:22 pm (job start times ranged from 2 pm to 9 pm weekdays). 1998 Task Force survey of employers found they generally used students on evenings and weekends and said later end time would not conflict. Comments solicited from Annandale Chamber of Commerce from members in June 2007 found that employers saw few if any negative impacts on their businesses and student employees from a later end time. [Source: Annandale Chamber of Commerce, Linda Bufano, Administrator]
Other Models:	Was not an issue in Arlington.

Topic:	***10/ Public Safety***
Description:	Crime deterrence and social safety.
Potential Impact:	Later HS start times will reduces window of unsupervised time (refer to Office of Justice programs report which showed spike in 2-4 afternoon activity). We consider this to be a major positive impact. Much adolescent risky behavior—experimentation with alcohol, drugs and sexual activity—also occurs in these hours. [look at youth risk survey] Working parents should feel better about having their adolescent students in school in the afternoon, if they are currently at home alone. A far higher percentage of MS and HS students are left unsupervised. Peak time for juvenile crime and victimization and gang activity is during time after school and before parents get home. Gangs are about belonging and a place to be. Later end times for HS and MS students would reduce that time and would be expected to have a positive impact on juvenile crime and gang activity. Need to consider unsupervised ES students who would not be in day care – earlier release time might mean more unsupervised time. Could result in less teen drowsy driving and teen car crashes (see "Traffic") Later high school start times have been shown to reduce drop-out rates [Source: U. of Minn. CAREI]. This would be a significant benefit the entire community, but especially to at-risk students and their families.
Transition Requirements:	Need for some ES parents to arrange for more or extended after-school child care.
Majority & Minority Opinions:	
Other comments:	Point: There was discussion about whether decrease in unsupervised afternoon time for high schoolers and/or middle schoolers would be offset negatively by a possible increase in unsupervised afternoon time for elementary school children who do not have the supervision that they should have at their age. Counterpoint: The current situation is a major public safety issue, with juvenile crime, victimization, teen risky behavior and gang activity peaking in the afternoon after school gets out and before parents get home. Reducing this period for MS and HS students would be a major benefit to the community and to families, to my mind far outweighing the need of some families to extend

	supervision for ES children for a longer time in the afternoon. Before drawing any conclusions about latchkey children, we need to get information on current number of latchkey ES students and basis on which to project any increase (or decrease). Do the ES schools with early starts currently have higher, lower or the same rates of latchkey children in the afternoons than late-starting ES? Do current late-starting ES have some ES children getting themselves to bus stops in the AM after parents have gone to work? We currently have no information on this.
Other Models:	Re: tardiness/truancy, Edina, MN, and Brevard County, FL reported fewer absences and less tardiness. Minnesota saw a statistically significant reduction in drop-outs. [Source: U. of Minn. CAREI study]

Topic:	***11/ Traffic***
Description:	Traffic Safety; Volume of traffic; pedestrian safety
Potential Impact:	Later high school start times would mean more mingling with heavier traffic – observation shows that traffic continues to increase in the morning until "rush hour" starts to peak. Need to find out when Fairfax County traffic peaks in AM and PM now. Would later HS start times reduce the use of private automobiles to school? Possibly more HS students would use the bus rather than parents and students driving to school or bus stops to allow more sleep time. If so, would have positive impact on traffic. HS students who drive will not be driving in the dark in the morning to go to school. However, if they drive and stay after school for sports or clubs, they would potentially drive home in the dark, i.e. winter months, and in pm rush traffic. Fewer HS students who walk will be walking in the dark. However, if they stay after school for sports or clubs they could potentially walk home in the dark, i.e. winter months. Would later HS start times reduce the use of private automobiles? Possibly more HS students using bus rather than driving to school to get more sleep time. If so, would have positive impact on traffic. We can expect a reduction in drowsy driving.
Transition Requirements:	Advance warning to community about changed school schedules so commuters can make adjustments to their routes and/or commuting patterns.
Majority & Minority Opinions:	
Other comments:	New assistant supervisor for communications, is developing a survey for parents on transportation to school. We need to coordinate, to recommend questions to learn if transportation needs would change if high school started later – for example, how many parents drive their students to HS school now, who wouldn't, with a later start time (several members of our committee said that this would be true for them). Let's also look at reduction of private automobile trips via other transportation parameter recommendations. Drowsy driving is a major concern for teen drivers, with more than half of teens saying they have driven drowsy in the past year (and 15% more than once a week). Nine percent of 12th graders say they have nodded off or fallen asleep at the wheel at least once in the past year. [Source: National Sleep Foundation 2006 Sleep in America poll (which focused on teens), p. 50+] , When asked about various forms of impaired driving, teens put driving while tired at the top of the list, with 75 percent

	saying they had seen other teens drive when tired. [Source: Childrens Hospital of Philadelphia/State Farm Insurance study of teen driving, 2006] This problem could be ameliorated by increased sleep. Potential for reduction in teen car crashes. POINT: With more reasonable high school start times, and with better bus service (for example, shorter ride), more students might take the bus; let's use a change in HS start times to have an education campaign ("less kiss & ride – use the buses!") COUNTERPOINT: Driving to high school is viewed as a right of passage. Restricted parking hasn't slowed kids from parking, Going to school even more alert is going to cause an increase.
Other Models:	Fayette, Ky., found reduced teen car crashes after going to later start times, while surrounding jurisdictions saw increases. [Source: Adolescent Sleep, School Start Times, and Teen Auto Accidents, Fred Danner and Barbara Phillips, University of Kentucky, February 13, 2006abstract]

Topic	***12/ Taxpayers***
Description:	All community members who have an interest in our school system, in their role as taxpayers. Addresses quality of life and quality of service aspects of school schedules and school transportation.
Potential Impact:	Taxpayers want to know that they have a good, effective school system. County governance wants a school system that helps make Fairfax attractive to companies to locate to. Taxpayers would be wary of increased FCPS costs due to bell schedule changes and changes to busing services. However, many taxpayers are not knowledgeable about current bus services or bell schedules in FCPS. Many taxpayers will accept cost increases if they are assured that the costs are not out of line with other jurisdictions, the changes have been well studied and planned, and that knowledgeable citizens agree with the changes.) Taxpayers are concerned about community safety, traffic, safety of students, and the environment as well as the cost and quality of education in the county. School operations that further these objectives will be appreciated by taxpayers. FCPS is currently studying reengineering of bus transportation for school students. If the transportation system is reengineered, then revised bell schedules should be implemented at the same time, so that only one major change process needs to be undertaken. (Not all committee members agreed with this). This is also a MPS recommendation. The Committee decided that impacts are so dependent on costs to taxpayers, that we could not effectively score impacts, in advance of a decision on the price of any bell schedule change.
Transition Requirements:	Cost of transportation re-engineering. Direct and indirect costs of implementing bell schedule changes
Majority & Minority Opinions:	The Committee decided that impact scoring is most dependent on the cost of any bell schedule proposals, which will occur in the future; and did not score this.
Other comments:	Significant health benefits to adolescent students, reduced medical costs for sickness due to lack of sleep, reduced depression and cost thereof, less absentees of parents from work for student illness. If MS ends later, potential reduced cost of MS after-school programs.
Other Models:	The taxpayers of Arlington county accepted the change to later HS start times. Most other jurisdictions that have made the change were able to do so without added cost, and at least one reduced bus costs. (See “Impacts” document)

Topic:	***13/ Environment***
Description:	Relates primarily to burden on environment of automobile traffic and bus traffic. Also for considering any savings in energy use in buildings.
Potential Impact:	Changes in HS start times, along with public education encouraging use of buses and (where safe) walking, and, any efficiencies which result in fewer bus miles driven, would have a positive impact.
Transition Requirements:	
Majority & Minority Opinions:	The committee decided that impact scoring would depend on any new bus schedules and routes proposed, which will occur in the future; and did not score this.
Other comments:	Current efforts to combat obesity in children and adolescents are looking at more walking and biking to school, which would reduce pollution from driving.
Other Models:	

Committee Votes on Preferred Bell Schedules and Committee Impact Scoring

Preferred Bell Schedules

Our call for votes by email went out Sunday 1/20, requested back by Monday 1/21. The "ballot" was sent to all active committee members (those who had attended one or more of our meetings).

This group numbers 14, with 2 who have opted from the beginning not to vote at all, but rather to serve in a review/advisory capacity.

Since we had work contact information only for some committee members and Monday is a holiday, this page will be updated on Tuesday with new results.

The table below shows our picks for bell schedule

	Bell Schedule A	Bell Schedule B	Bell Schedule C	Bell Schedule D	Bell Schedule E
First Preference		1 vote	4 votes		
Second Preference	5 votes				

The above includes results from:

Laurie Baker, Walt Carlson, Charlie Monts, Kathye Gillette, Marie Reinsdorf, Joe Swarm, Sandy Evans, Roger Sims

…for a total of 8 responses and 5 votes; 3 respondents voiced no support for any of the proposed bell schedules

Committee Impact Scoring, Part 1: Scoring by Bell Schedule

At our last meeting, Tuesday 1/15, we voted on impact of each of the 5 proposed bell schedules, A-E, on each of the community entities in our topic list. With discussion, some of the topics were consolidated or removed from consideration. Here are the topics we voted on:

Topic 1: Sports (all community impact);
Topic 5: After-school activities (other)
Topic 6/7: SACC & other daycare
Topic 8. Parents daily lives and family life
Topic 9. Student jobs and student volunteering
Topic 10. Public safety incl social safety
Topic 11. Traffic

Topics 12-13, Taxpayers and The Environment, were not scored because we decided that the proposed bell schedules alone didn't yield enough information to show increase or decrease in cost and efficiencies, and increase or decrease in vehicular traffic. They were left in the report for informational purposes only.

Thank you very much to Charlie Monts who devised our tallying method, which is copied from an Excel spreadsheet at the end of this document.

When summed by bell schedule, we found that our scoring leaned in the neutral to negative range, for all of the proposed bell schedules, as presented in the chart's summary by bell schedule. We have not summed by community impact topic.

Looking at the "positive side of things":

Option D got the highest # of percentage points in the neutral through strongly positive scores.

If you ignore the "neutral" column, the option with highest # of percentage points in somewhat or strong positive is Option A.

To look for impacts by topic, you have to read by that line. For example, Topic 6, Family Life, scored the most number of "5" or "strongly positive" votes in Option C (4 people gave Option C an impact of "5").

We have not summarized the chart by community impact topic, which would show the results differently. For example, the Family Life topic (#8) gets the most # of these votes, by schedule:

- Bell A: positive, then neutral, then negative
- Bell B: neutral, negative, positive
- Bell C: positive, neutral & negative tied
- Bell D: negative, neutral, positive

- Bell E: negative, neutral (no votes for positive).

Some discussion and lessons learned on the tally effort:

We thought about consolidating the 5 proposed bell schedules but it was decided that even a 20-minute difference might affect the impact. The result was that it was a little confusing to think about each topic quickly, 5 times.

We found that it wasn't easy to keep in mind exactly who we were thinking about, when voting. Part of this might have been avoided by having very specific questions associated with our topics. Some said that they couldn't help but think about student impact when voting. Therefore, the voting effort might best be summarized as being the result of a combination of sincerely held perspectives, and voters taking perspective of affected community.

Also worth noting:

- Some committee members were not in favor of any schedule change and thus didn't see any positive impact, thus we have some "all unfavorable" weighting to our results.
- In some cases favorable impact may not be the desired result – rather, neutral might be best hoped for.
- Scoring for favorable or unfavorable might be done to determine that one is better than another; or that one is good, where the other one is not good: Two slightly different interpretations.
- What do negative & positive mean? They can have meanings that would direct us to different outcomes; it seems that they are incomplete without itemizing how – especially with negative impacts, where the impact may be a solvable problem, a transition related problem, or an unsolvable problem.
- We didn't weight our topics. For example, should impact on family life quality have same weight as impact on community use of sports facilities? It is unlikely that we would have reached consensus.
- There was no scoring of the current bell schedule.

Committee Impact Scoring, Part 2

After this exercise was completed, the Chair asked for an overall "most important negative" and "most important positive" impacts of the combination of the 5 bell schedules, per the Task Force Chair's request. The results have come in rather too late and mixed (some replied with overall positive and negative, some that impacts could be identified in terms of importance but not by positive or negative without identifying with a bell schedule, and some that all impacts were negative) for a complete representation here, but based on the Chair's best effort to summarize:

Topic	How Many Said the Impact Would be Negative?	How Many Said the Impact Would be Positive?
Sports (community use and community persons)	5	
Daycare	2	3
Family Life		4
Student Jobs/Volunteering	1	
Public Safety	1	4
Traffic	1	1

Scoring by Bell Schedule: Chart at the End of the Document

About the chart on the next page:

Column 1 is the proposed bell schedule.

Column 2 is the topic.

Scoring: 1 = strongly negative; 2 = somewhat negative; 3 = neutral; 4 = somewhat positive; 5 = strongly positive.

The numbers under the columns headed 1-5 represent how many voters picked that impact score.

															A	**1**	**2**	**3**	**4**	**5**	TOT
A	**1**	1	2	2	4	1	3	1	1			4	2		**1**	4	3	1	2	0	
A	**5**	2	2	3	3	3	4	1	2	3		4	3		**5**	1	3	5	2	0	
A	**6**	5	4	1	1	4	2	2	2	5		4	4		**6**	2	3	0	4	2	
A	**8**	3	3	1	4	1	5	5	5	1	1	4	3		**8**	4	0	3	2	3	
A	**9**	1	1	1	1	3	3	3	3	1	2	4	3		**9**	5	1	5	1	0	
A	**10**	4	5	1	1	1	1	1	3	2	5	4	5		**10**	5	1	1	2	3	
A	**11**	3	1	2	1	3	4	5	1	5	2	4	3		**11**	3	2	3	2	2	
																30.0%	**16.3%**	**22.5%**	**18.8%**	**12.5%**	80
															B	**1**	**2**	**3**	**4**	**5**	
B	**1**	1	2	1	3	3	4	1	3	1		2	2		**1**	4	3	3	1	0	
B	**5**	1	3	2	2	4	1	3	2	1		2	3		**5**	3	4	3	1	0	
B	**6**	1	1	1	5	1	4	2	5	1		2	5		**6**	5	2	0	1	3	
B	**8**	3	3	1	3	1	4	4	3	3	1	2	3		**8**	3	1	6	2	0	
B	**9**	2	1	2	2	3	3	3	3	2	3	2	3		**9**	1	5	6	0	0	
B	**10**	4	5	1	1	1	1	1	2	1	4	2	5		**10**	6	2	0	2	2	
B	**11**	3	1	2	2	3	4	5	1	5	2	2	4		**11**	2	4	2	2	2	
																29.6%	**25.9%**	**24.7%**	**11.1%**	**8.6%**	81
															C	**1**	**2**	**3**	**4**	**5**	
C	**1**	1	1	4	4	4	3	3	2	4		5	3		**1**	2	1	3	4	1	
C	**5**	1	4	3	2	3	4	3	3	3		**5**	3		**5**	1	1	6	2	1	
C	**6**	5	4	1	1	4	2	2	2	5		5	5		**6**	2	3	0	2	4	
C	**8**	3	3	1	4	1	5	5	5	4	2	5	3		**8**	2	1	3	2	4	
C	**9**	3	2	3	3	3	3	3	3	3	2	5	**3**		**9**	0	2	9	0	1	
C	**10**	5	5	1	1	1	1	1	3	2	5	5	5		**10**	5	1	1	0	5	
C	**11**	3	1	1	1	1	4	4	1	5	2	5	4		**11**	5	1	1	3	2	
																21.0%	**12.3%**	**28.4%**	**16.0%**	**22.2%**	81
															D	**1**	**2**	**3**	**4**	**5**	
D	**1**	2	3	3	4	4	5	3	4	3		3	3		**1**	0	1	6	3	1	
D	**5**	4	4	3	3	4	3	3	4	3		3	3		**5**	0	0	7	4	0	
D	**6**	1	1	1	5	1	4	2	5	1		3	**5**		**6**	5	1	1	1	3	
D	**8**	3	3	1	3	1	4	4	3	2	2	3	**3**		**8**	2	2	6	2	0	
D	**9**	3	2	3	3	3	3	3	3	3	2	3	3		**9**	0	2	10	0	0	
D	**10**	5	5	1	1	1	1	1	3	1	4	3	4		**10**	6	0	2	2	2	
D	**11**	3	2	1	2	1	4	4	1	5	3	3	4		**11**	3	2	3	3	1	
																19.8%	**9.9%**	**43.2%**	**18.5%**	**8.6%**	81
															D	**1**	**2**	**3**	**4**	**5**	
E	**1**	2	4	2	3	3	3	3	2	3		1	3		**1**	1	3	6	1	0	

E	**5**	2	2	2	3	1	3	3	2			1	3	**5**	2	4	4	0	0	
E	**6**	1	1	1	1	2	2	3	3	3		1	3	**6**	5	2	4	0	0	
E	**8**	3	3	1	3	3	1	1	2	3		1	3	**8**	4	1	6	0	0	
E	**9**	3	2	3	3	3	3	3	3	3	2	1	3	**9**	1	2	9	0	0	
E	**10**	1	2	3	3	3	3	2	1	1	1	1	4	**10**	5	2	4	1	0	
E	**11**	3	2	3	3	1	2	3	5	2	3	1	4	**11**	2	3	5	1	1	
															25.3%	**21.5%**	**48.1%**	**3.8%**	**1.3%**	79

Why is the Pool Closed for High School Swim?

Swimming is a relaxing all-inclusive, lifelong activity that can make a significant contribution to health and wellness. And in Fairfax County, those who want a healthy and active lifestyle can take advantage of the benefits of swimming year-round. The Park Authority's nine RECenters put indoor pools within convenient reach of work or home for county residents. Having so many pools convenient to so much of the population is unique in the Metro Washington area and is a lasting reward for the collective efforts of citizens, schools, and the Fairfax County Park Authority.

The popularity of swimming as a high school sport began rising in the 1960s, and schools began to seek pool facilities. Some jurisdictions, such as Arlington County, chose to put pools right on the school grounds. After considering the options Fairfax County chose a different course, one that would make more efficient use of this very expensive public asset.

The proposal was to build public recreation centers on Park Authority land, with the understanding that they would be made available to county high schools for practice and meets during the swim season. The Park Authority would then own and manage these facilities, covering operating expenses by charging for publicly-offered classes, memberships and daily admissions. Citizens of Fairfax County endorsed the idea by approving a bond referendum for what is now Audrey Moore RECenter at Wakefield Park. Since then, as interest in high school swim and community-based recreation has increased, each new center proposed has met with overwhelming support and bond approvals.

Each year, between November and February, RECenters welcome the high school teams and applaud their success. Physical activity and teamwork have long been recognized as vital parts of the high school experience, and swimming can involve more students with less risk of serious injury than any other sport. The Park Authority is proud to serve the county's high school teams, and the agency is thankful that by doing so these life-enhancing pools and aquatic programs are made available to everyone throughout the year.

Fairfax County Park Authority

If accommodations and/or alternative formats are needed, please call (703) 324-8563, at least 10 working days in advance of the registration deadline or event. TTY (703) 803-3354

Appendix N

Doing More With Specialists

The Park Authority's goal is to provide first-rate aquatic programs that meet the needs of all citizens. To achieve this end, experts in some disciplines missing from RECenter offerings are encouraged to deliver services through pool rentals. Demand for pool space is high, and balancing the demands of different aquatic groups is an ongoing challenge. To ensure success, staff members closely monitor pool use and carefully manage pool allocation. Rental groups offering the same services as those provided by the Park Authority's aquatic program are not allocated rental space in RECenter pools. Also, to guarantee quality control and the most effective space management, private swim lessons in FCPA pools are only taught by FCPA instructors.

Organizations and private businesses, such as United States Swim, United States Dive, scuba diving, United States Masters, water polo, underwater hockey and synchronized swimming, currently serve Fairfax County citizens using FCPA pools in a rental program coordinated by the agency. The vast majority of the Individuals served by these groups are Fairfax County residents.

Before the construction of the Park Authority's RECenters, the decision was made not to build swimming pools at Fairfax County Public Schools. Instead, the county endorsed building public RECenters with the understanding that the pools would provide a home for local high school swim teams. Additionally, summer swim league youngsters swim in FCPA pools September through May in specifically designated time slots.

Fitness swimmers strive and thrive in RECenter pools. To serve these customers, three lanes are always set aside for lap swim during operating hours.

Through this combination of effective alliances with aquatic service providers and a continuing commitment to quality, the Fairfax County Park Authority is able to offer the region's most comprehensive array of premier aquatic programs.

So get into the swim of things. Take a class, take a turn in the lap lanes, take in a high school swim meet or take advantage of the specialty programs offered at Park Authority pools by our service partners. Contact information on our service partners is listed below.

U.S.A. Swimming:

Curl/Burke Swim Club	301-428-9493
The FISH	703-481-9648
Fort Belvior Swim Team	703-799-2225
Machine Aquatics	703-391-2077
	www.machineaquatics.com
Potomac Marlins	703-820-7946
Victor Swim Club	703-370-6001
York Swim Club	703-536-6338
	www.yorkswim.com

U.S. Masters Swim Teams:

Alexandria Masters Swimming	703-960-4598
	www.AlexandriaMasters.com
Curl/Burke Masters	www.cubu-masters.org
Audrey Moore	703-725-8813
Providence(M/W/F	571-278-4581
Providence(T/Th)	703-200-3081
South Run	703-451-7575
Fairfax County Masters	703-928-6608
LetSwim Masters	703-281-0112
Potomac Marlins Masters	703-820-7946
Victor Masters Swim Club	703-370-6001

U.S. Springboard Diving Teams

Dominion Dive Club	www.dominiondiveclub.com

Water Polo

Northern Virginia Water Polo	billstage1@aol.com
DC Water Polo	703-827-0096

U.S. Synchronized Swimming

Northern Virginia Nereids	703-407-6298
Synchronized Swimming Club	703-569-0085
NOVA Synchronized Swim	703-795-4761
	www.novasyncro.net

Scuba Diving

Scuba instruction is offered by private companies listed below with the RECenter where the instruction is given.

A&K SCUBA(Audrey Moore)	703-642-0933
Action Scuba (Spring Hill)	703-585-DIVE
Aquatic Adventures	703-619-1500
(Mt.Vernon and Lee)	www.learn2dive.net
Sea Ventures (Oak Marr)	703-425-7676
	www.seaventures-scuba.com
Splash Dive Center	703-823-7680
(George Washington and Lee)	
Adventure Scuba Company	703-263-0429
(Oak Marr)	www.scubava.com

Underwater Hockey

Beltway Bottom Feeders	703-760-9345

Full Figure Water Exercise (13-Adult)

For the full-figured individual, this shallow water workout increases muscle tone, flexibility and cardiovascular fitness without stressing the joints.

4AH 13--55 minute lessons--$114

Location	Day	Time	Code	Begin	$
ProvREC	Sa	8:05am	1594183101	09/15	4AH

Water Walking (13-Adult)

Designed to improve muscle tone and aerobic fitness. Ideal for those who want the effects of walking without the stress on muscles and joints. Instructor will guide participants in different types of walking to work on all parts of the body.

4AH 13--55 minute lessons--$114
4AI 20--55 minute lessons--$170
4AE 28--55 minute lessons--$234

Location	Day	Time	Code	Begin	$
SpHillREC	M/W	9:25am	175 418 3301	09/17	4AE
Wkfld/Moore	M/W/F	9am	183 418 3301	11/05	4AI
Wkfld/Moore	M/W/F	11am	183 418 3302	11/05	4AI
Wkfld/Moore	T/Th	10:05am	183 418 3303	11/06	4AH

Surf & Turf (13-Adult)

Challenge yourself with this combination of the of cardiovascular and basic mat workouts in a n competitive environment. The mat portion dev functional strength for back and abdominal mu Students need to provide their own fins for a u and fun workout using kickboards, fins and me balls. Class will be held in the deep end of the p Prerequisite: students must be able to swim a m mum of 25 yards.

4AAM 12--55 minute lessons--$106
4AE 28--55 minute lessons--$234

Location	Day	Time	Code	Begin
LeeREC	Sa	8am	456 418 3602	09/15
LeeREC	M/W	7:30pm	456 418 3601	09/17

Advanced Water Aerobics (13-Adult)

This is a very vigorous water aerobics class. No equipment is used. Students move their bodies against the water's resistance during 45 minute aerobics. The result is an excellent cardiovascu workout while toning the body at the same time Come prepared to move!

4AB 27--55 minute lessons--$226
4AG 41--55 minute lessons--$338

Location	Day	Time	Code	Begin
OakMarREC	M/W/F	8am	142 418 3701	09/17
ProvREC	M/W	7pm	159 418 3701	09/17

Power Finning (13-Adult)

Treat yourself to this unique workout designed t enhance cardiovascular fitness while strengthen and toning muscles. Students need to provide th own fins for a challenging workout utilizing fins, kickboards and float belts. Class will be held in deep end of the pool. Prerequisite: students mus able to swim a minimum of 25 yards.

4AAM 12--55 minute lessons--$106
4AB 27--55 minute lessons--$226

Location	Day	Time	Code	Begin
LeeREC	Sa	10am	456 419 6101	09/15
MtVernREC	T/Th	7:30am	472 419 6101	09/18

Specialty Classes

Springboard Diving-Beginning (6-Adult)

Introduction to the four main components of th dive: approach, take-off, flight and entry. Introd tion to the forward and back dives.

4AAF 5--55 minute lessons--$49
4AO 6--55 minute lessons--$58
4AN 7--55 minute lessons--$68
4AU 8--55 minute lessons--$76

Location	Day	Time	Code	Begin
OakMarREC	Sa	1pm	142 419 3601	09/08
OakMarREC	Sa	1pm	142 419 3602	11/03
ProvREC	Sa	12pm	159 419 3601	09/08
ProvREC	Su	12pm	159 419 3603	09/09
ProvREC	Sa	12pm	159 419 3602	11/03
ProvREC	Su	12pm	159 419 3604	11/04
CubRunREC	F	6pm	192 419 3601	09/14
LeeREC	Sa	10:50am	456 419 3601	09/08
LeeREC	F	6pm	456 419 3602	09/14
LeeREC	Sa	10:50am	456 419 3603	11/03

Fairfax County Public Schools
Transportation Task Force

Community Impact Committee

Bibliography

January 17, 2008

Adolescent Sleep, School Start Times, and Teen Auto Accidents
Fred Danner and Barbara Phillips, University of Kentucky, February 13, 2006.

A study of the sleep habits and auto crash rates of adolescents from a single large county-wide school district in Kentucky before and after the start times of the county's high schools changed to one hour later**.**

To access, go to the following link and search for "Danner":

http://www.journalsleep.org/PDF/Oral_Split/Oral_Tuesday.pdf

Community Impacts from Other Jurisdictions Changing to Later HS Start Times, Other Local Data
Sandy Evans, co-founder of Start Later for Excellence in Education Proposal (SLEEP), December 2007

Results of an independent review and analysis of reports on the community impacts resulting from later start times in selected locations across the nation.

http://www.fcps.edu/fts/taskforce07/committees/CICimpacts.pdf

How Do Arlington County and Thomas Jefferson High School for Science and Technology (TJ) Schedule Sports Practices and Games Around Their Later End Times?
By Sandy Evans, December 6, 2007

Findings on how Arlington County, VA, high schools and Thomas Jefferson High School for Science & Technology provide their students adequate after-school sports facilities and practices with later end times than Fairfax County high schools, using practice/game schedules and interviews.

http://www.fcps.edu/fts/taskforce07/committees/CICarlingtonandt.pdf

Juvenile Offenders and Victims: 2006 National Report, Chapter 3

Snyder, Howard N. and Sickmund, Melissa. 2006. Juvenile Offenders and Victims: 2006 National Report. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency

Prevention.

Research that indicates both juvenile crime and juvenile victimization peak in the afternoon hours after school and that there is more potential to prevent crime by filling the hours between 3 to 7 PM than by using juvenile curfews.

http://www.fcps.edu/fts/taskforce07/committees/CICjunvenileoffenders.pdf

Studying the impact of 5 new bell schedules under consideration:
A Compilation of Informational Reports

Members of the Fairfax County Transportation Task Force's Community Impact Committee: Berlin, John; Culin, Susan; Evan, Sandy; McGrath,Patti; Swarm, Joe; Wegner, Christy; December 5, 2007

Compilation of informational reports prepared by Community Impact Committee members on conditions in Fairfax county and other jurisdictions that might impact the decision to change the start times of Fairfax county high schools.

http://www.fcps.edu/fts/taskforce07/committees/CICbellschedules.pdf

Why is the Pool Closed for High School: Explanatory Statements

A Fairfax County Park Authority Handout and a page from Parktakes, the Course Catalog of the Fairfax County Park Authority, Fall 2007

Statements that explain why blocks of time are reserved for Fairfax County, Virginia high school swimming teams at all Fairfax County Recreation Centers for several weeks each year.

http://www.fcps.edu/taskforce07/committees/why_pools_close_for_high_school_swim.pdf

FCPS Employee Impact Committee

Report to Transportation Task Force

January 9, 2008

Staff Impacts reviewed by job category

- Group A – Hourly employees
- Group B – School Administration
- Group C – Instructional staff
- Group D – Athletic coaches

Group A – Hourly employees

- Custodians
- Administrative assistants
- Security
- Food service
- Transportation staff
- Bus drivers
- Trade/maintenance

Group B – School Administration

- Principals
- Assistant Principals
- Athletic Directors
- Central Administrators
- Psychologists/Social Workers
- Food service management

Group C – Instructional staff

- Teachers
- Instructional assistants
- Counselors
- Itinerant specialists, band/orchestra, psychologists

Group D – Athletic coaches

- Athletic coaches
- Certified trainers

Scenarios (we generalized from the Flip committee scenarios just for ease of discussion)

1. Elementary school start time of 8 AM
2. High School start time of 8:30 AM
3. (Middle school in 3rd tier at 9:30 a.m.)
4. High School start time of 9:30 AM
5. (Middle school in 2nd tier of 8:30 a.m.)

Elementary school start time of 8 AM

- Group A – Hourly Employees
  - Would have difficulty shifting schools to keep same hours and getting to other jobs on time
  - Buses would have to be parked in different places to reduce impact on bus drivers
- Group B – School Administrators
  - Minimal impact

Elementary school start time of 8 AM (cont'd.)

- Group C – Instructional
  - Increases ability to take staff development courses after school
  - Would require adjustment in daily schedule
- Group D – Athletic coaches
  - Minimal impact

High School start time of 8:30 AM

- Group A – Hourly Employees
  - Would have difficulty shifting schools to keep same hours and getting to other jobs on time
  - Central kitchens may have to staff differently in order to feed elementary schools
- Group B – School Administrators
  - Minimal impact

High School start time of 8:30 AM (cont'd.)

- Group C – Instructional
  - Harder to get to staff development courses in the evening
  - May be less likely to sponsor clubs
  - May resign to work closer to home and avoid traffic
  - May be able to plan / prep before school
  - First period teachers may find more students who are awake/alert
  - Students may exhibit less disruptive behavior

High School start time of 8:30 AM (cont'd.)

- Group D – Athletic coaches
  - May be more difficult to recruit teacher coaches

High School start time of 9:30 AM

- Group A – Hourly Employees
  - Greater difficulty in getting to other jobs
  - To avoid traffic, might keep same early hours and work overtime, or take jobs outside the county
- Group B – School Administrators
  - Minimal impact

High School start time of 9:30 AM (cont'd.)

- Group C – Instructional
  - More difficult to get to staff development courses
  - Positive for those who live locally but worse for those with long commutes
  - Might be willing to sponsor clubs *before* school if students could get there
  - More difficult to schedule second jobs
  - Planning and prep time before school
  - May enjoy students in first period classes being awake and alert
  - May find less disruptive behavior by students

High School start time of 9:30 AM (cont'd.)

- Group D – Athletic coaches
  - Negative psychological impact of working after dark
  - Negative psychological impact of getting home after 7PM
  - Concern that practice time may be shortened and athletes won't be well prepared

Bottom Line

- Most impacts relate to quality of life
- For some staff, quality of life may improve; for others, it may worsen
- It is difficult for the task force to estimate whether the net impact is positive or negative
- Traffic congestion throughout the county is likely to worsen, so traffic impact will worsen no matter what time school starts

Committee members who participated in the meetings

- Jen Carley, Chair
- Jan Auerbach
- Rhonda Dumont
- Laurie Lindberg
- Jan McKee
- Bill Oehrlein
- Marlene Parker
- Bruce Steubner
- Chris Worley
- Brenda Zikowitz

Employee Impact Committee Report
January 22, 2008

Employee Group:	Committee reviewed impacts on four defined employee groups: Support staff, school administration, instructional staff, and athletic staff. Examples of positions included in the group are listed under each employee group heading.
Scenario Analyzed:	The Committee analyzed three scenarios (using median start times from the Flip committee scenarios for ease of discussion): 1. *Elementary school start time of 8 AM* (Scenarios A and C) 2. *High School average time of 8:45 AM-3:35 PM/Middle school in 3rd tier at 9:30 AM-4:20 PM* (Scenario C) 3. *High School time of 9:30 AM-4:20 PM/Middle school in 2nd tier of 8:45 AM-3:35 PM* (Scenario A)
Potential Impacts	Potential impacts are based on best judgment and knowledge of current practices rather than previously conducted studies (unless noted in Supporting Data Sources below)

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: Support Staff
(Custodians, Administrative assistants, security, food service, transportation staff, bus drivers, trade/maintenance)

Scenario Analyzed	**Elementary school start time of 8 AM (Scenarios A and C)**
Potential Impacts	• Would have difficulty shifting schools to keep same hours and getting to other jobs on time • Cutting out shuttles and special runs will take time away from drivers, yet more drivers will be needed to meet the parameters for length of bus ride and school drop-off windows. • The 35 hour guarantee rules for bus drivers will need to be changed because, with the addition of new drivers, some runs will have to be reassigned from current drivers to even the workload. The guarantee is a major hiring and retention incentive that will be lost. Drivers who lose hours will find other work (some in the area in which they live). Many drivers are single parents who need the hours to survive. • There will be additional expense for more drivers and buses needed to meet the new schedule and parameters. • The longer extended hours in the day may cause many out of county drivers to leave for work closer to home. They then would have a shorter commute and have time to get to a second job or get home to family. • The problems cited above will make it more difficult to recruit and retain drivers, a problem that already exists with the current schedule. • Out of area drivers who choose to stay with the county will have to leave at the same time to start later runs because of traffic. • As there are currently ES that start as early as 7:50 a.m., adjustments for

	staffing, bus routes, dr. appts., child care, etc. would vary as it does now. • ES and MS staff potentially unable to coach if before school practice is held
Transition Requirements:	• Much time will be spent changing routes to fit the new time demands and to accommodate the parameters that the task force is recommending. • Designated parking areas for buses would need to be moved closer to what is now their last run and not their first run.
Supporting Data Source(s)	Bus information from Brenda Zikowitz, Support Service Employee's Advisory Council and Bus Driver and Attendant Advisory Council Representative

Employee Group: Support Staff

(Custodians, Administrative assistants, security, food service, transportation staff, bus drivers, trade/maintenance)

Scenario Analyzed	**High School average time of 8:45 AM to 3:35 PM (Scenario C)**
Potential Impacts	• Would have difficulty shifting schools to keep same hours and getting to other jobs on time • Central kitchens may have to staff differently in order to provide breakfast and lunch to elementary schools; potential overtime impact • Cutting out shuttles and special runs will take time away from drivers, yet more drivers will be needed to meet the parameters for length of bus ride and school drop-off windows. • The 35 hour guarantee rules for bus drivers will need to be changed because, with the addition of new drivers, some runs will have to be reassigned from current drivers to even the workload. The guarantee is a major hiring and retention incentive that will be lost. Drivers who lose hours will find other work (some in the area in which they live). Many drivers are single parents who need the hours to survive. • There will be additional expense for more drivers and buses needed to meet the new schedule and parameters. • The longer extended hours in the day may cause many out of county drivers to leave for work closer to home. They then would have a shorter commute and have time to get to a second job or get home to family. • The problems cited above will make it more difficult to recruit and retain drivers, a problem that already exists with the current schedule. • Out of area drivers who choose to stay with the county will have to leave at the same time to start later runs because of traffic. • Effect on personal schedule for dr. appts, children's schedules, commute, longer day • ES and MS staff potentially unable to coach if before school practice is held • Could increase work day due to traffic—still arrive early because of a.m. traffic, but later dismissal means return home will take longer
Transition Requirements:	• Much time will be spent changing routes to fit the new time demands and to accommodate the parameters that the task force is recommending. • Designated parking areas for buses would need to be moved closer to

	what is now their last run and not their first run.
Supporting Data Source(s)	Bus information from Brenda Zikowitz, Support Service Employee's Advisory Council and Bus Driver and Attendant Advisory Council Representative

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: Support Staff

(Custodians, Administrative assistants, security, food service, transportation staff, bus drivers, trade/maintenance)

Scenario Analyzed	**High School average time of 9:30 AM to 4:20 PM (Scenario A)**
Potential Impacts	• Greater difficulty in getting to other jobs • To avoid traffic, might keep same early hours and work overtime, or take jobs outside the county • Central kitchens may have to staff differently in order to provide breakfast and lunch to elementary schools; potential overtime impact • Cutting out shuttles and special runs will take time away from drivers, yet more drivers will be needed to meet the parameters for length of bus ride and school drop-off windows. • The 35 hour guarantee rules for bus drivers will need to be changed because, with the addition of new drivers, some runs will have to be reassigned from current drivers to even the workload. The guarantee is a major hiring and retention incentive that will be lost. Drivers who lose hours will find other work (some in the area in which they live). Many drivers are single parents who need the hours to survive. • There will be additional expense for more drivers and buses needed to meet the new schedule and parameters. • The longer extended hours in the day may cause many out of county drivers to leave for work closer to home. They then would have a shorter commute and have time to get to a second job or get home to family. • The problems cited above will make it more difficult to recruit and retain drivers, a problem that already exists with the current schedule. • Out of area drivers who choose to stay with the county will have to leave at the same time to start later runs because of traffic. • Effect on personal schedule for dr appts, children's schedules, commute, longer day • ES and MS staff potentially unable to coach if before school practice is held • Could increase work day due to traffic—still arrive early because of a.m. traffic, but later dismissal means return home will take longer
Transition Requirements:	• Much time will be spent changing routes to fit the new time demands and to accommodate the parameters that the task force is recommending. • Designated parking areas for buses would need to be moved closer to what is now their last run and not their first run. • Traffic patterns are in and of themselves affected by school hours (note that summer and holiday traffic is regularly lighter) so shifting school hours is a zero sum game in this instance.

Supporting Data Source(s)	Bus information from Brenda Zikowitz, Support Service Employee's Advisory Council and Bus Driver and Attendant Advisory Council Representative

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: School and Central Office Administration

Principal, assistant principal, athletic director, central administration

Scenario Analyzed:	**Elementary school start time of 8 AM (Scenarios A and C)**
Potential Impacts	• Of the employee groups, this group would be impacted the least • Potential impact to take staff development course work • Impact on personal/family schedule for dr. appts, child care, children's after school programs
Transition Requirements:	• Change of schedule for daycare and other family obligations • Shifting of schedules will be an initial and short-lived inconvenience and a zero sum game as the schedule involves the same number of hours but at a different time

Employee Group: School and Central Office Administration

Principal, assistant principal, athletic director, central administration

Scenario Analyzed	**High School average time of 8:45 AM to 3:35 PM (Scenario C)**
Potential Impacts	• Of the employee groups, this group would be impacted the least • Potential impact to take staff development course work • Impact on personal/family schedule for dr appts, child care, children's after school programs • Athletic Director faced with additional transportation scheduling issues-- Later dismissal might affect pool of activity drivers; currently they drive at 2:30, but would they wait until 4 to drive and regular drivers would be on the road with HS students for return home at end of school
Transition Requirements:	Shifting of schedules will be an initial and short-lived inconvenience and a zero sum game as the schedule involves the same number of hours but at a different time.

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: School and Central Office Administration

Principal, assistant principal, athletic director, central administration

Scenario Analyzed	**High School average time of 9:30 AM to 4:20 PM (Scenario A)**
Potential Impacts	• Of the employee groups, this group would be impacted the least • To avoid traffic, might keep same early hours and work overtime, or take jobs outside the county • Potential impact to take staff development course work • Impact on personal/family schedule for dr appts, child care, children's after school programs • Athletic Director faced with additional transportation scheduling issues--

	Later dismissal might affect pool of activity drivers; currently they drive at 2:30, but would they wait until 4:30 to drive and regular drivers would be on the road with HS students for return home at end of school
Transition Requirements:	Shifting of schedules will be an initial and short-lived inconvenience and a zero sum game as the schedule involves the same number of hours but at a different time.

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: Instructional Staff

Teachers, Instructional assistants, counselors, itinerant specialists, band/orchestra, psychologists/social workers

Scenario Analyzed	**Elementary school start time of 8 AM (Scenarios A and C)**
Potential Impacts	• Increases ability for elementary staff to take staff development courses after school • Impact on personal/family schedule for dr. appts, child care, children's after school programs, commute • ES and MS teachers potentially unable to coach if before school practice is held • Increase/decrease the ability to tutor • Allow more flexibility at end of day for ES teachers for dr. appts, etc.
Supporting Data Source(s)	Lisa Newmark, GMU staff
Other Model(s)	GMU classes are currently offered at 4:30, 5:55, 7:20, and 8:45. Falls Church, Arlington, Loudoun teachers (with later schedules) are able to take classes.

Employee Group: Instructional Staff

Teachers, Instructional assistants, counselors, itinerant specialists, band/orchestra, psychologists/social workers

Scenario Analyzed	**High School average time of 8:45 AM to 3:35 PM (Scenario C)**
Potential Impacts	• Staff with elementary age children may need to arrange for afternoon child care • Middle and high school staff may have to attend later classes for staff development; teachers may also have conflicts with start times of university courses needed for full licensure • May be less likely to sponsor clubs • May resign to work closer to home and avoid traffic • May be able to plan/prep before school • First period MS and HS teachers may find more students who are awake/alert • Students may exhibit less disruptive behavior • Increased amount of make up work/missed tests/labs, etc for student athletes dismissed early for events • Increase/decrease the ability to tutor

	• Impact on personal/family schedule for dr. appts, child care, children's after school programs, commute • Missed opportunity to provide after school help to students • Teachers may perceive early dismissal of even a few students to attend extra-curricular events as problematic • Evaluation of school instructional performance could be negatively affected by students who are excused from class to participate in after school activities • Could increase work day due to traffic—still arrive early because of a.m. traffic, but later dismissal means return home will take longer • May attract teachers who desire later school schedule • ES and MS teachers potentially unable to coach if before school practice is held • If teacher leaves class early for after school event and sub is an 'in house colleague' this would impact the in house sub time for prep/planning
Supporting Data Source(s)	Bill Oehrlein, TTF member, Adjunct Professor, and Lisa Newmark, GMU staff Kyla Wahlstrom and Carol Freeman, "Executive Summary of Findings from School Start Time Study," 1997, available from the TTF website. Fifty-seven percent of teachers responding to a written survey agreed that a greater number of students were more alert during the first two periods of the day than with the previous start time (7:15 AM). After the first year at the 8:40 AM start time, 72% of the teachers said that they would choose a start time of 8:00 AM or later, with only 3.5% saying they would return to the previous start time of 7:15 AM.
Other Model(s)	Currently GMU offers classes at 4:30, 5:55, 7:20 and 8:45

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: Instructional Staff

Teachers, Instructional assistants, counselors, itinerant specialists, band/orchestra, psychologists/social workers

Scenario Analyzed	**High School average time of 9:30 AM to 4:20 PM (Scenario A)**
Potential Impacts	• Staff with elementary age children may need to arrange for afternoon child care • Middle and high school staff may have to attend later classes for staff development; teachers may also have conflicts with start times of university courses needed for full licensure • Positive for those who live locally but worse for those with long commutes • Might be willing to sponsor clubs *before* school if students could get there • More difficult to schedule second jobs • Planning and prep time before school • MS and HS teachers may enjoy students in first period classes being awake and alert • May find less disruptive behavior by students • Increased amount of make up work/missed tests/labs, etc for student athletes dismissed early for events

	• Impact on personal/family schedule for dr. appts, child care, children's after school programs, commute • Increase/decrease the ability to tutor • Missed opportunity to provide after school help to students • Teachers may perceive early dismissal of even a few students to attend extra-curricular events as problematic • Evaluation of school instructional performance could be negatively affected by students who are excused from class to participate in after school activities • Could increase work day due to traffic—still arrive early because of a.m. traffic, but later dismissal means return home will take longer • ES and MS teachers potentially unable to coach if before school practice is held • If teacher leaves class early for after school event and sub is an 'in house colleague' this would impact the in house sub time for prep/planning
Supporting Data Source(s)	Kyla Wahlstrom and Carol Freeman, "Executive Summary of Findings from School Start Time Study," 1997, available from the TTF website. Fifty-seven percent of teachers responding to a written survey agreed that a greater number of students were more alert during the first two periods of the day than with the previous start time (7:15 AM). After the first year at the 8:40 AM start time, 72% of the teachers said that they would choose a start time of 8:00 AM or later, with only 3.5% saying they would return to the previous start time of 7:15 AM.
Transition Requirements:	Shifting of schedules will be an initial and short-lived inconvenience and a zero sum game as the schedule involves the same number of hours but at a different time.
Other Model(s)	Currently GMU offers classes at 4:30, 5:55, 7:20 and 8:45

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: Athletic Staff

Coaches, Certified Trainers

Scenario Analyzed	**Elementary school start time of 8 AM (Scenarios A and C)**
Potential Impacts	Unable to coach if practice held before school
Transition Requirements:	Shifting of schedules will be an initial and short-lived inconvenience and adjustment period.

Employee Group: Athletic Staff

Coaches, Certified Trainers

Scenario Analyzed	**High School average time of 8:45 AM to 3:35 PM (Scenario C)**
Potential Impacts	• May be more difficult to recruit teacher coaches from MS and ES • ATC (certified athletic trainer) hours impacted if practice held before school and events and other practices still after school • Potential decrease of practice time and facilities an issue

	• Traffic patterns can increase work day • Potentially unable to coach if HS practice is held before school • Coaches have even less family time at night with longer day • If coaching and must leave school early for event, additional prep time for missed class period to prepare notes for sub. • If teacher leaves class early for an after school event and sub is an 'in house colleague' this would impact the in house sub time for prep/planning • Loss of coaching staff from ES/MS and potentially private sector if before school practice is held

FCPS Employee Impact Committee Report to Transportation Task Force

Employee Group: Athletic Staff

Coaches, Certified Trainers

Scenario Analyzed	**High School average time of 9:30 AM to 4:20 PM (Scenario A)**
Potential Impacts	• Concern that practice time may be shortened and athletes won't be well prepared - SAFETY is an issue • ATC (certified athletic trainer) hours impacted if practice held before school and events and other practices still after school • Potential decrease of practice time and facilities an issue • Traffic patterns can increase work day • ES and MS staff potentially unable to coach if HS practice is held before school • Coaches have even less family time at night with longer day • If coaching and must leave school early for event, additional prep time for missed class period to prepare notes for sub. • If teacher leaves class early for after school event and sub is an 'in house colleague' this would impact the in house sub time for prep/planning • Loss of coaching staff from ES/MS and potentially private sector if before school practice is held

FCPS Employee Impact Committee Report to Transportation Task Force

Bottom Line

- Most impacts relate to quality of life. For some staff, quality of life may improve; for others, it may worsen
- It is difficult for the task force to estimate whether the net impact is positive or negative
- Traffic congestion throughout the county is likely to worsen, so traffic impact will worsen no matter what time school starts
- Significant impact for high school athletic program

Employee Impact Committee members who participated in the meetings

Jan Auerbach
Ken Campo
Jen Carley
Rhonda Dumont
Laurie Lindberg
Geneva Lindner
Jan McKee
Michele Menapace
Bill Oehrlein
Marlene Parker
Bruce Stuebner
Terry Tuley
Rima Vesilind
Chris Worley
Brenda Zikowitz

ADDENDUM: Comments provided by Laurie Lindberg after last committee meeting for consideration by the task force

ES at 8 AM – 2:35 PM (A and C)

- Bus routes would not start as early as they currently do, so it will be easier to recruit drivers.
- Drivers would be able to be recruited from the ES parent population, as they could drop off their own children and proceed to the HS/MS routes.
- Bus runs for ES would be finished first, in time to pick up students on the next tier (which would dismiss one hour later), freeing up more buses for MS/HS and late bus runs.
- For those ES administrators whose schools currently start later than 8 AM, they will have greater opportunities for after-school staff development coursework with an earlier start time.
- For ES that would be starting earlier under these scenarios, teachers may find that students are more alert and ready to learn, more energized throughout the day, and better behaved [2]
- With ES teachers getting out earlier than MS/HS, they may be more able to coach after-school practices.

2 Kyla Wahlstrom and Carol Freeman, "Executive Summary of Findings from School Start Time Study," 1997, available from the TTF website. In the Minneapolis and Edina school systems, the ES start times went from 9:40 AM to 7:40 AM and 8:40 AM, with teacher and administrator comments being positive for both start times.

Scenario C HS 8:45 AM – 3:35 PM

- Bus routes would not start as early as they do now, so it would be easier to recruit drivers.
- Afternoon and late bus bus routes would be freed up by earlier ES drop offs.
- Principals and assistant principals may find that student behavior is calmer in the cafeteria and during passing times in the hallways, with fewer disciplinary referrals,[1]
- Fewer students being tardy will result in less congested offices in the morning. [1]

[1] Results from Minneapolis and Edina school systems one year after implementation of 8:40 AM start times for HS and three year follow-up. Kyla Wahlstrom and Carol Freeman, "Executive Summary of Findings from School Start Time Study," 1997, available from the TTF website and the *NASSP Bulletin*, Vol. 86, No. 633, December 2002, pg. 17

- Teachers will have more energy, less fatigue, be less sleep deprived themselves [2]
- School counselors may find that fewer students report relationship problems with their peers or their parents [3]

[3] Kyla Wahlstrom, *NASSP Bulletin*, Vol. 86, No. 633, December 2002, pg. 17 Personal comments from 17 school counselors and 3 school nurses.

- ES teachers more able to coach after-school HS sports
- Coaches may find that student athletes are more alert and less tired at after-school practices. [3]

[3] Op. Cit. pg. 16. "Coaches and activity leaders were generally supportive of the change because they saw students who were less tired and seemingly more mentally alert at the end of the day."

Scenario A HS 9:30 AM- 4:20 PM

- Principals and assistant principals may find that student behavior is calmer in the cafeteria and during passing times in the hallways, with fewer disciplinary referrals,[1]
- Fewer students being tardy will result in less congested offices in the morning. [1]

1 Results from Minneapolis and Edina school systems one year after implementation of 8:40 AM start times for HS and three year follow-up. Kyla Wahlstrom and Carol Freeman, "Executive Summary of Findings from School Start Time Study," 1997, available from the TTF website and the *NASSP Bulletin*, Vol. 86, No. 633, December 2002, pg. 17

- ES and MS teachers more able to coach after-school HS practices
- Teachers will have more energy, less fatigue, be less sleep deprived themselves [2]
- School counselors may find that fewer students report relationship problems with their peers or their parents [3]

2 Kyla Wahlstrom, *NASSP Bulletin*, Vol. 86, No. 633, December 2002, pg. 17 Personal comments from 17 school counselors and 3 school nurses.

- ES teachers more able to coach after-school HS sports
- Coaches may find that student athletes are more alert and less tired at after-school practices. [3]

[3] Op. Cit. pg. 16. "Coaches and activity leaders were generally supportive of the change because they saw students who were less tired and seemingly more mentally alert at the end of the day." (Note: I am extrapolating from data at a school system using HS start time of 8:40 AM)

Student Impact Committee Report

Presentation to

Transportation Task Force

Jan. 22, 2008

Student Impact Committee

TTF parameters

that guided our work:

- The bell schedule should not result in frequent, common or significant violations of **Civil Twilight** restrictions for elementary students.
- The bell schedule should reflect age-specific circadian sleep cycles to **increase the opportunity for adequate sleep** by contrast to the current bell schedules.

Student Impact Committee

SIC parameters that guided our work – p. 1:

- **Student participation in after school extracurricular activities**, both school-sponsored and community-based, is desirable at all age levels.
  - As far as possible, the bell schedule should **preserve** that opportunity **without undue negative impact** to the greater community in terms of facility use.
  - Before school activities should not be considered a normal or appropriate alternative to after school activity scheduling.
- The evaluation of bell schedule impacts should give **equal weight** to effects on students at all school levels: Elementary, Middle and High.

Student Impact Committee

SIC parameters that guided our work – p. 2:

- The evaluation of bell schedule impacts should determine whether any impacts, positive or negative, **disproportionately affect** any **student subgroup** (such as minority, single parent, economically disadvantaged, immigrant, urban or suburban) or any **school level**.
- "Quality of Life" – for students and their families – was a significant consideration throughout the SIC's deliberations and influenced our evaluation of all potential impacts.

Student Impact Committee

The SIC process for evaluating the five bell schedules:

- **Meetings** were held on:
  - November 19, 2007
  - December 6, 2007
  - January 3, 2008
  - January 14, 2008
- **E-mail** exchanges occurred throughout the process
- **Documents** were exchanged throughout the process, including:
  - Research findings
  - Draft report sections
- **Note:** Inclusion of a particular point of view, idea, impact or supporting reference in a chart or bibliography **does not necessarily indicate SIC consensus** on its relative importance, relevance or persuasiveness.

Student Impact Committee
Conclusion and Recommendations

- After reviewing the five proposed bell schedules, the SIC by majority vote (nine in favor, two opposed) determined that **Option C** most closely met the agreed criteria.
- Each of the five proposed bell schedules was determined to have advantages and disadvantages.
- Although the charge to the SIC was to select a single or best bell schedule alternative, the SIC recommends that the TTF final report provide **at least two alternatives** to the School Board in order to enhance flexibility and exchange of views during subsequent Board deliberation and eventual public consideration.

Student Impact Committee

Recommended Bell Schedule #1

OPTION C						
	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:50-8:10	8:35-8:55	9:20-9:40	2:30-2:50	ES 3:15-3:35	ES 4:00-4:20
					HS/MS 3:25-3:45	HS/MS 4:10-4:30
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		xx	XXXX		xx	XXXX
HS/SS		XXXX	xx		XXXX	xx
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

Student Impact Committee

Additional "Option F" recommended for further evaluation

- Notwithstanding its recommendation of Option C, the SIC discussed an additional "Option F," which would lie at the midpoint between the start/dismissal times of Options C and D.
- The SIC did not vote on the viability of "Option F," and additional information is needed from FTS before it can be evaluated

Student Impact Committee

Recommended Bell Schedule #2

"Option F"

	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:40-8:00	8:25-8:45	9:10-9:30	2:20-2:40	ES 3:05-3:25	ES 3:50-4:10
					HS/MS 3:05-3:35	HS/MS 4:00-4:20
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		xx	XXXX		xx	XXXX
HS/SS		XXXX	xx		XXXX	xx
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

SIC Subcommittees

Student Impact Committee

Subcommittee 1:

- Academics
- Health
- Safety

Subcommittee 2:

- Sports
  - School-Based
  - Non-school-Based
- Other Extracurricular Activities
  - School Based
  - Non-School-Based

Subcommittee 3:

- Daycare
- SACC
- Families

Positive Academic Impacts: Bell Schedule Changes

Bell schedule changes like Option C have been shown to have the following academic impacts:

- ES students:
  - 1st and 2nd tiers may more closely match the body clocks of ES students – i.e., ready to learn earlier in the day, tired late in the afternoon
- MS & HS students:
  - Reductions in:
    - Tardiness
  - Improvements in:
    - attendance – 1st period & all day
    - continuous enrollment & lower drop-out rates
    - preparedness, participation & alertness in early classes
    - handling of complex tasks

Positive Academic Impacts: Increased Sleep

When students get more sleep, as occurs with bell schedule changes like Option C, the following academic impacts occur:

- ES students:
  - Parents can control the bedtime & evening routines of ES more easily than of MS & HS students
  - An 8:30 bedtime for ES students allows for the 10 hours of sleep needed at this age, providing abundant sleep for 8:05 school opening time
- MS & HS students:
  - Improvements in:
    - Focus of attention
    - Late-day performance
    - Handling of complex tasks
    - Academic performance
  - Reductions in:
    - Daytime sleepiness in classes
    - Unplanned sleep & falling asleep during homework

Recommendations based on Academics

	High School	Middle School	Elementary School
Best Options	2nd/3rd tiers A,B,C,D,E	2nd/3rd tiers A,B,C,D	A, B, C, D (1st & 2nd Tiers)
Worst Options	1st tier current	E current	E (late tier 3) current

Based on academic impacts, Option A, B, C or D provide advantages for middle and high school students without disadvantaging elementary school students.

Positive Health Impacts: Increased Sleep

With more sleep, the following health impacts occur:

- All age levels:
  - Improvements in:
    - Release of growth hormones
    - Immune system function
    - Cell & tissue repair
    - Mood
    - response time
    - creativity
  - Reductions in:
    - Depression
    - Anxiety
    - Irritability
- ES students:
  - Students in Tiers 1 & 2 would have schedule that matches their circadian rhythm; parents have control over ES bedtime & evening routines
- MS students:
  - Last tier has greatest sleep benefits
  - Later start time will mean more time for breakfast at home
- HS students:
  - Reductions in:
    - behavior problems
    - overall & daytime sleepiness
    - unplanned sleep, falling asleep during homework
    - vulnerability to having auto accidents
    - potential for drug & alcohol use

Health Impact still to be evaluated

- **Breakfast programs**
  - Out of 236 schools & centers, breakfast is served daily:
    - At 161 sites
    - To 32,804 students, or 19.9% of all students
  - Breakfast is mandated by federal law for students receiving Free and Reduced Price meals
  - Breakfasts are prepared at a few sites & then distributed throughout the county
  - Both meals and students must arrive early enough for breakfast to be served
- The breakfast program will require further evaluation and consideration as changes are considered and/or implemented.

Recommendations based on Health

	High School	Middle School	Elementary School
Best Options	3rd tier A and B	3rd tier C and D	A and C (1st/2nd tier)
Worst Options	1st tier current	E current	B and D (too early) E (late tier 3)

Based on health impacts, Option A, B, C or D provide advantages for middle and high school students without disadvantaging elementary school students.

Positive Safety Impacts: Bell Schedule Changes

When students get more sleep, the following safety impacts occur:

- **Civil Twilight (CT)**
  - Students are safer when not walking to school or waiting for buses in the dark
  - FCPS already selectively violates Civil Twilight
  - FCPS will continue to minimize Civil Twilight violations
  - TTF agreed to limit CT violations for base school students to 11 days maximum, with the earliest pickup at 7:00 a.m.
  - Options B, D & E would be more expensive due to cost of avoiding CT violations
  - Options B, D & E create more morning CT violations for ES students; Option C does not

Positive Safety Impacts: Increased Sleep

When students get more sleep, the following safety impacts occur:

- **MS & HS students:**
  - Reduction in unsupervised time after school if in Tier 2 or 3
- **HS students:**
  - Driving accidents are the #1 cause of teen death, with drowsy driving a major contributing factor
  - Later HS start times reduce drowsy driving and increase HS student driving during daylight hours
- **Crime & gang activity**
  - After-school hours are peak time for juvenile crime & youth victimization, including gang related crime
  - Later dismissal time means reduced opportunity for juvenile crime & victimization, including gang related crime

Recommendations based on Safety

	High School	Middle School	Elementary School
Best Options	2nd/3rd tier A, B, C, D, E	3rd tier C, D	Late 1st tier A, C or 2nd/3rd tier
Worst Options	1st tier current	1st tier, E current	Early 1st tier B, D, E

Based on safety impacts, Option C provides the greatest advantages for all grade levels.

Sports & Extracurricular Activities

School-Based Athletics:

- HS sponsored athletics
- Virginia High School League activities
- MS intramurals

Non-School-Based Athletics:

- All community sports teams
- All individual student sports & athletics
- PTA sponsored ES sports

School-Based Activities:

- Co-curricular, extra-curricular
- Field trips
- Theatre, dance & performance
- Band, chorus, orchestras
- After-school programs
- Interest clubs, yearbook, newspapers, literary magazine
- Student government, honors societies

Non-School-Based Activities:

- Jobs
- Religion classes
- Boy Scouts, Girl Scouts, Explorers, etc.
- Music lessons
- Art classes
- Youth orchestras (e.g., AYP)

Positive Sports & Extracurricular Activities Impacts

Bell schedule changes are expected to have the following impacts:

- All grade levels:
  - Adequate sleep has positive impact on athletic performance & sports participation
  - Athletes need sleep time to recover from sports training and from the demanding schedule of school & sports
  - Sports participation improves time management skills
  - ES ball fields available earlier for HS, club & community use
- ES students:
  - Increased opportunity for after-school enrichment activities
  - Larger window than at present for service providers (tutors, music teachers, art & religion classes, etc.)

Positive Sports & Extracurricular Activities Impacts

Bell schedule changes are expected to have the following impacts:

- MS students:
  - Reduced need for MS after-school programs, lowering costs
  - Sufficient time for intramural sports, health & wellness activities
  - No change expected in participation
- HS students:
  - May be easier to recruit coaches
  - Schedule more like Loudoun & Arlington Counties for interscholastic sports competitions
- Community for-profit programs (schools of dance, gymnastics, martial arts, music teachers, tutors, etc.) are expected to adjust to any changes in the school schedule to maintain profitability

Negative Sports & Extracurricular Activities Impacts

- All grade levels:
  - Ball fields & gyms are shared by school, youth & adult community sports teams
  - Increased competition for HS & MS gyms & fields with community groups with HS & MS activities starting later
- ES & MS students:
  - Before-school enrichment activities would shift to after-school times, which could change opportunity for some students
- MS students:
  - Possible reduced opportunity for private instrument practice, meeting with tutors, etc.
  - Option C would shift MS after school activities more than would other Options, with MS dismissal at 4:00 to 4:20 p.m.

Negative Sports & Extracurricular Activities Impacts

- HS students:
  - Possible reduced opportunity for recreational athletics
  - Possible reduced opportunity for after-school enrichment activities
  - Possible shorter practice time was debated - inconclusive
  - Travel in rush hour could increase travel time to games & practices
- Warm-up, conditioning & practice time could be reduced; increased need for lighted fields due to later practices
- Time between end of school & start of practice might be reduced; that time is currently used for:
  - Converting gyms from daytime use set-up
  - Transport players to alternate facilities, when needed
  - Academic support

Negative Sports & Extracurricular Activities Impacts

- HS students:
  - Expected impact on District bands, orchestras, & choruses
  - Possible reduced opportunity for private instrument practice, meeting with tutors, etc.
  - Smaller window than at present for service providers
  - Possible reduced job opportunities, esp. with reasonable hours
  - Coaches may find later practice & game time schedule unacceptable
  - If teachers want to get home, potential difficulty finding club & activity sponsors
- Caveat:
  - Instrument practicing, tutoring, and the like could be moved to before-school times, as some activities & teams do now, but this would limit the effect of a later bell schedule for those students

Negative Sports & Extracurricular Activities Impacts

Within FCPS:

- Approximately 70% of the high school population participates in student activities
- Nearly 40% of all high school students participate in Virginia High School League (VHSL) athletic or academic activities
- Over 50% of the middle school population participates in the after-school program
- SIC discussed multiple perspectives on the place of sports in bell schedule decisions, with some advocating the importance of these programs being available to the majority of students, and others concerned that this "tail" excessively wags the "dog"

Negative Sports & Extracurricular Activities Impacts

A large body of research evidence establishes the positive impact of participation in athletic & other extracurricular activities on:

- GPA
- Test scores – HS & college; & college & graduate school admissions tests
- School attendance
- Lower drug/alcohol use
- Less risk-taking behavior
- College aspirations
- College enrollment
- Success after college
- Civic participation
- Mental health
- Physical health & weight

Recommendations based on Sports & Extracurricular Activities

	High School	Middle School	Elementary School
Best Options	D, E	B, E	A - E
Worst Options	A, B, C	A, C, D, E	--

Positive HS Student Employment Impacts

- Current start times may impose a greater hardship on students who work 20+ hours weekly than they do on non-working students.
- Under the current FCPS bell schedule, students who work 20+ hours weekly average 37 minutes less sleep per school night than non-working students.
- Later HS start times are expected to increase the amount of sleep for working students.

HS Student Employment Impacts
No Agreement

- Members did not agree on the potential impact of later HS start times on some aspects of student employment:
- Some members cited FCPS employer interviews and research in other jurisdictions, concluding that there would be no impact on student employment from moving start times
- Others expressed concern that restricted after-school employment opportunities could disproportionately impact low-income families

Recommendations based on Student Employment

	High School	Middle School	Elementary School
Best Options	C, D, E	NA	NA
Worst Options	A, B	NA	NA

Student Impact Committee

Limitations on Conclusion, Additional Recommendations – p. 1

- **Costs and consistency with other goals not fully considered.**
  - Neither the SIC not the TTF has had the time to evaluate how our recommendations fit into competing educational priorities as defined by the Commonwealth's Constitution, the Virginia Board of Education, and the Fairfax County School Board.
  - If additional or diverted resources would be necessary, SIC was not able to weigh as an impact the possible effect on other school programs, goals or objectives.
  - The SIC did not have adequate access to cost information or to whether additional resources and/or diversion of existing resources would be needed to implement a particular bell schedule. As a result, the SIC was not able to compare costs of one schedule to another.

Student Impact Committee

Limitations on Conclusion, Additional Recommendations – p. 2

- **Targeted input required.**
  - Because certain population groups, in particular minority, single parent, economically disadvantaged and immigrant families, **may have been underrepresented** on the SIC and the TTF, and **may experience different or disproportionate impacts** from any bell schedule change, the School Board should undertake appropriate efforts to **elicit input from those groups** to assure that the TTF and the School Board has have fully evaluated and considered those impacts.

Student Impact Committee

Limitations on Conclusion, Additional Recommendations – p. 5

- **Other possibilities considered.**
  - Other possible improvements may exist and should be considered, particularly those that could ameliorate potential negative impacts. Additional consultation with Facilities and Transportation Services will be necessary so that their suggested improvements and changes are included before implementation of any new bell schedule, should the School Board decide to proceed.
- **Extensive general public input required.**
  - Before selection or implementation of a new schedule, the School Board should be diligent in providing parents, schools, and the community at large with all relevant information on the **advantages and disadvantages** of schedule change.
  - Before selection or implementation of a new schedule, the School Board should provide adequate opportunity for public comment through local forums, meetings and/or appropriate surveys in addition to formal hearings.

Student Impact Committee

Limitations on Conclusion, Additional Recommendations – p. 6

- **Transportation Re-engineering required.**
  - Phase I Committees of the TTF (Flip, Slide and Tweak) proposed a range of transportation re-engineering recommendations for implementation and/or further study.
  - These recommendations were designed to both improve the management of current resources and to help balance or offset any expense which may be associated with a bell schedule change. Conclusions on these recommendations by the TTF included:
    - Adoption of recommendation
    - No consensus on recommendation
    - Table, not fully consider, or no vote on recommendation
  - The SIC requests that the TTF fully revisit the work of the Phase I Committees and entertain all suggestions for improving efficiency and flexibility of the bus system and for reducing costs.

Student Impact Committee

Review

- **Option C** most closely met the agreed criteria established by TTF and SIC.
- **"Option F"** was found to be an alternative bell schedule worth consideration by TTF.
- SIC recommends that the TTF final report provide **at least two alternatives** to the School Board in order to enhance flexibility and exchange of views during subsequent Board deliberation and eventual public consideration.

Student Impact Committee

Recommended Bell Schedule #1

OPTION C						
	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:50-8:10	8:35-8:55	9:20-9:40	2:30-2:50	ES 3:15-3:35	ES 4:00-4:20
					HS/MS 3:25-3:45	HS/MS 4:10-4:30
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		xx	XXXX		xx	XXXX
HS/SS		XXXX	xx		XXXX	xx
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

Student Impact Committee

Recommended Bell Schedule #2

"Option F"						
	School Start Times			School End Times		
	Tier 1	Tier 2	Tier 3	Tier 1	Tier 2	Tier 3
	7:40-8:00	8:25-8:45	9:10-9:30	2:20-2:40	ES 3:05-3:25	ES 3:50-4:10
					HS/MS 3:05-3:35	HS/MS 4:00-4:20
ES	XXXX	xxxx	x	XXXX	xxxx	x
MS		xx	XXXX		xx	XXXX
HS/SS		XXXX	xx		XXXX	xx
	Total time span: 1 hour 50 minutes			Total time span: 2 hours		

Student Impact Committee Members

- **Academic Achievement, Health, & Safety**

  Subcommittee 1 led by: Robin Carroll & Phyllis Payne

  - Aste, Mahri
  - Brigleb, Jay –student
  - Carroll, Robin
  - Jakulski, Jill
  - Payne, Phyllis
  - Vennergrund, Carol
  - Wright, Doug

- **Sports & Extracurricular Activities**

  Subcommittee 2 led by: Mark Emery & Jill Hecht

  - Bosley, Mary Ann
  - Emery, Mark
  - Harbeck, Judy
  - Hecht, Jill
  - Nicholson, Beanca – student
  - Vdovjak, John

- **SACC, Daycare, Family, & Student Employment**

  Subcommittee 3 led by: Roger Cryan & Peter Steinberg

  - Cox, Stephanie
  - Cryan, Roger
  - Galicia, Carlos - student
  - Kim, Christina
  - Monaco-Stevenson, Lory
  - Steinberg, Peter

2/28/08

STUDENT IMPACT COMMITTEE: ACADEMICS
Executive Summary

Topic:	**Academic Impact**
Description:	72,000 Secondary Students enrolled in FCPS grades 7-12 includes Mason District Middle Schools include 6th grade Glasgow, Poe, Holmes) 84,000 Elementary Students K-6th , minus 6th graders at Glasgow, Poe, and Holmes) (enrollment approximate: based on 12,000/grade)
Potential Impacts:	**There is mounting medical evidence that the amount of sleep and circadian rhythms play a part in how prepared we are to learn.** The academic benefits of bell schedules more closely aligned with student circadian rhythms include: 1. Students more alert and ready to learn 2. Improved academic performance, including improved class participation, preparedness, concentration, mental processing, problem solving and creativity 3. Improved attendance and reduced tardiness 4. Improved enrollment/fewer dropouts 5. Improved performance for adolescents later in the day. "Given that the primary focus of education is to maximize human potential, then a new task before us is to ensure that the conditions in which learning takes place address the very biology of our learners." (Carskadon, 1999) **FCPS Student Achievement Goals**: 1.1. Achieve their full academic potential in the core disciplines. 2.7. Develop practical life skills including but not limited to: 2.7.1. Problem solving/critical thinking.

ACADEMIC IMPACT SUMMARY

	High School	Middle School	Elementary School
Better Scenario	2nd/3rd tier A, B, C, D, E	2nd/3rd tier A, B, C, D,	A, B, C, D (1st/2nd tier)
Worse Scenario	1st tier *current*	E *current*	E (Late tier 3) *current*

STUDENT IMPACT COMMITTEE: ACADEMICS
Executive Summary

Transition Requirements:	1. Inform and involve all stakeholders, including the community 2. Educate the students, teachers and community about the benefits of sleep and reasons for the change 3. Allow ample time to plan for transition 4. Support families during the transition process 5. Support teachers, school staff, and administrators during the transition process 6. Commit to providing follow-up research regarding the change and implementation process (Wrobel, 1999)
Majority and Minority Opinions:	
TTF Student Representative Comments:	■ We need to have a productive workday for high school students. ■ More sleep would have a positive impact on learning. ■ I have lower grades in my first period classes. ■ Smart to put elementary school before high school. ■ Our high school has built in Learning Seminars (LS) every other day--two 45-minute blocks of time, on a rotating schedule (meaning that we will have an LS for every class during 4 days). I find them extremely helpful, since the LS program was initiated most of us (students) have not had to stay after for remedial help or to make up tests and quizzes. This has eliminated the need for after school help/make-up time. If an LS program is placed into all high school schedules, you could move up practices times.
Research Summary	When adolescents increase their amount of sleep, improvements are measurable in their learning. In jurisdictions that have changed to later start times, students do get more sleep. With later start times, studies show that student academic performance has improved.
Conclusion:	Recommend: Option A, B, C, D Based on academic impact, Option A, B, C or D provide academic advantages for middle and high school students without disadvantaging elementary school students.

STUDENT IMPACT COMMITTEE : ACADEMICS
Research for Student Academic Impact Report

Background: **All Ages** Research	**What does the research about sleep and learning/memory show?** **NIH:** Too little sleep leaves us drowsy and unable to concentrate the next day. It also leads to impaired memory and physical performance and reduced ability to carry out math calculations. If sleep deprivation continues, hallucinations and mood swings may develop. Some experts believe sleep gives neurons used while we are awake a chance to shut down and repair themselves. Without sleep, neurons may become so depleted in energy or so polluted with byproducts of normal cellular activities that they begin to malfunction. Sleep also may give the brain a chance to exercise important neuronal connections that might otherwise deteriorate from lack of activity. **"REM sleep stimulates the brain regions used in learning.** This may be important for normal brain development during infancy, which would explain why infants spend much more time in REM sleep than adults (*see* Sleep: A Dynamic Activity). Like deep sleep, REM sleep is associated with increased production of proteins. **One study found that REM sleep affects learning of certain mental skills. People taught a skill and then deprived of non-REM sleep could recall what they had learned after sleeping, while people deprived of REM sleep could not."** In Your Guide to Healthy Sleep, by the U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, National Institutes of Health, there are many references to improved learning when a person receives adequate sleep. ■ "While you sleep, your brain is hard at work forming the pathways necessary for learning and creating memories and new insights. Without enough sleep, you can't focus and pay attention or respond quickly." P1. ■ "How well rested you are and how well you function depend not just on your total sleep time but on how much of the various stages of sleep you get each night." 1, p.4 ■ **Learning, Memory, and Mood.** Students who have trouble grasping new information or learning new skills are often advised to "sleep on it," and that advice seems well founded. Recent studies reveal that people can learn a task better if they are well rested. They also can remember better what they learned if they get a good night's sleep after learning the task than if they are sleep deprived. Volunteers had to sleep at least 6 hours to show improvement in learning, and the amount of improvement was directly tied to how much time they slept. In other words, volunteers who slept 8 hours outperformed those who slept only 6 or 7 hours. Other studies suggest that all the benefits of training for mentally challenging tasks are maximized after a good night's sleep, rather than immediately following the training or after sleeping for a short period overnight." 1, p12 ■ "Although it has not been shown that dreaming is the driving force behind innovation, one study suggests that sleep is needed for creative problem solving." 1, p13 ■ "Exactly what happens during sleep to improve our learning, memory, and insight isn't known. Experts suspect, however, that while people sleep, they form or reinforce the pathways of brain cells needed to perform these tasks." 1, p13 ■ Not only is a good night's sleep required to form new learning and memory pathways in the brain, but sleep is also necessary for those pathways to work up to speed. Several studies show that lack of sleep causes thinking processes to slow down. Lack of sleep also makes it harder to focus and pay attention. Lack of sleep can make you more easily confused." 1, p13

What does the research about sleep and learning/memory show? (cont.)

"Performance: We need sleep to think clearly, react quickly, and create memories. In fact, the pathways in the brain that help us learn and remember are very active when we sleep. Studies show that people who are taught mentally challenging tasks do better after a good night's sleep."

Creativity and problem solving are directly linked to adequate sleep. (Nature, Jan. 21, 2004)

Skimping on sleep has a price. Cutting back by even 1 hour can make it tough to focus the next day and can slow your response time. Studies also find that when you lack sleep, you are more likely to make bad decisions and take more risks. This can result in lower performance on the job or in school and a greater risk for a car crash." (NIH: http://www.nhlbi.nih.gov/health/public/sleep/healthysleepfs.pdf , p.1)

In the U. of Minn. CAREI report, Vol. 1, there is a summary of empirical research that points to the connection between cognition and sleep loss:

- It has been shown that sleep deprivation is associated with memory deficits (Dinges & Kribbs, 1991; Nilsson, Backman & Karlsson, 1989), impaired performance and alertness (Carskadon & Roth, 1991; Dinges & Kribbs, 1991), as well as time-on task decrements and optimum response shifts (Dinges & Kribbs, 1991).
- The specific loss of REM sleep has also resulted in memory loss (Smith, 1995; Li, Wu, Shao & Liu, 1991).
- Dujardin, Guerrien & Leconte (1990) found that REM sleep affects information processing, while Maas (1995) listed the consequences of REM sleep loss as including: unintended sleep, increased irritability, anxiety and depression, decreased socialization and humor, hyper sexuality, mental fatigue with reduced memory concentration, and decreased ability to handle complex tasks and be creative.

In the text used for AP Psychology at Herndon High School, the authors state the following:

- " sleep helps us recuperate. It helps *restore* body tissues, especially those of the brain." p255
- Without proper rest students are not at their peak: "Teenagers typically need 8 or 9 hours sleep, but they now average nearly 2 hours less sleep a night than their counterparts 80 years ago (Holden, 1993; Maas, 1999). Many fill this need by using their first class for an early siesta and after-lunch study hall for a slumber party. Even when awake, they often function below their peak." p.252.

STUDENT IMPACT COMMITTEE : ACADEMICS
Research for Student Academic Impact Report

	What does research show about sleep and academic performance as measured by grades or test scores? Some studies found a correlation between more sleep or waking up later on school days and higher grades or GPA (Wolfson, 1998, Link, 1995, Fredriksen, 2004), while others found no correlation (Eliasson, 2002 and Eliasson, 2007 Draft). **Navy studies.** In 2002, the Navy shifted from 6-hour sleep schedule to an 8-hour sleep schedule for recruits to coincide with the adolescent/young adult circadian rhythms. The following findings are from a follow-up study: ■ "The purpose of this study was to determine the impact of the new eight-hour sleep regimen using standardized test scores as a performance measure. One year of data with the eight-hour sleep regimen is compared to two separate years when only six hours of sleep was allowed." ■ "There is a significant difference, $F(2, 33) = 29.82$, $p < .0001$, between the test scores of recruits receiving 6-hours of sleep and 8-hours of sleep. **On average test scores rose by 11 percent with the additional sleep**. The odds of observing such a difference by chance is less than one in ten million."
High School Students and Later Start Times: Research	**What does research show about high school start times and learning?** When adolescents increase their amount of sleep, improvements are measurable in their learning and in a reduction in behavior problems. (Stone, 1992) Sleep deprived students scored lower than their well-rested colleagues *even after catching up on lost sleep* (according to a recent study from Harvard Medical School published in *Nature Neuroscience*. www.webmd.aol.com/sleep-disorders) Reading scores for adolescents improve when the instruction is offered in the afternoon as opposed to first thing in the morning. (The Impact of Sleep on Learning and Behavior in Adolescents, *Teachers College Record*, Volume 104, Number 4, June 2002, p. 712) Performance improves later in the day. Researchers recommend giving standardized tests later in the day, i.e. after 10 a.m. (Hansen, 2005, Pediatrics) Navy Studies. A second study by the Navy compared two 8-hour sleep regimens: 2100 to 0500 and 2200 to 0600. This study assessed the quantity and quality of sleep received by a sample cohort of recruits who shifted bedtimes from 2100 to 2200 during

STUDENT IMPACT COMMITTEE : ACADEMICS
Research for Student Academic Impact Report

High School Students and Later Start Times: Research (cont)	Boot Camp. "This research involved the analysis of sleep patterns and activity levels collected by wrist activity monitors." ■ "The results showed that the majority of recruits received more sleep when following the 2200 to 0600 sleep regimen than when following the 2100 to 0500 sleep regimen. On average, the 2200 bedtime resulted in 22 more minutes of sleep per night per recruit. This finding coincides with the predictable shift in young adult circadian rhythms, which favors later bedtimes."
High School Students and Later Start Times: Other Jurisdictions:	**In jurisdictions that changed to later HS start times, what was the change in student alertness and ability to learn?** **Arlington** (June 2005 Impacts Study, Summary) Old: HS, 7:30 am; MS 8:10 am; ES, 8:50 am New: MS, 7:50 am, HS, 8:19 am; ES, 8 am/8:25 am/9 am ■ *Excerpt:* **2. What changes happened for the intended recipients?** Survey data from students suggest that high school **students were more ready to start school, were more alert, and participated in class discussions and activities more frequently after the change in start time than in the year prior to the change.** This trend was **especially apparent with regard to class participation.** Forty-two percent of the high school students reported that they participated in discussions or activities during their first period class "all of the time" during the 2001-02 school year. In contrast, only 31% of these students responded in the same manner when they were asked about the 2000-01 school year. Likewise, **high school teachers reported dramatic increases in the number of first period students who were alert, prepared, and participatory**. The school start time change was made upon the recommendation of the ACI [*Note: Instruction staff*] and after considerable deliberation by the School Board and senior officials of the Arlington Public Schools. Research on the impact of school start times and adolescent behavior guided the decisions about changing the schedules, and **this study concludes that the change had its desired impact on the main beneficiaries, high school students**. On the other hand, the compromises that went into the switch, especially vis-à-vis middle school students *[Note: switching MS to an earlier time*], seem to have kept adverse consequences within acceptable limits. ***Summary: Start Time's Impact on Academic Achievement as Measured by Grades, Absences, Times Tardy and Perceptions*** ● **The first period grades** of both cohorts of high school students—that is, the classes of 2003 and 2004—**improved slightly** after the start time change in 2001. The change, however, was so slight that it **did not represent a change in letter grades** for the students. ● In addition to students' grades and rates of absenteeism and tardiness, students' and teachers' perceptions of factors that may influence academic performance also were examined. In general**, more high school students reported feeling ready to start school and alert during their first period class** after the school start time change ● These student responses seem to be **reinforced by the high school teachers' perceptions. Higher percentages of teachers agreed that their students were more alert, prepared, and participatory** after the start time change than before.

STUDENT IMPACT COMMITTEE : ACADEMICS
Research for Student Academic Impact Report

High School Students and Later Start Times: Other Jurisdictions: (cont)	**Edina, Minn:** Old: HS, 7:20 am New: HS, 8:30 am; MS, 7:45 am; ES, 9:20 am ■ *Excerpt* (Edina Later Start Time Summary): Parents, students and staff all agree it has been a good change. It is unusual to have so much agreement about an issue in education today. Teachers report **more alert students and improved learning** beginning at 8:30 as compared to the 7:25 start. ■ *Excerpt:* (CAREI Case Study on Edina: There seemed to be a general agreement among all eight [teachers] who said that, during first hour, they don't have "people with their heads down on the desk, they seem to be more engaged in what they're doing; they seem to be more focused." A few students said they are doing better academically because they are more awake. One student shared, "I have only fallen asleep once in school this whole year, and last year I fell asleep about three times a week." Another student added that she's "more alert and doesn't 'zone out' as much." On a similar note, a student said, "I feel I pay better attention because my sleep schedule is closer to my normal sleep pattern." Two students added that it feels a lot better now that they leave for school when it is light out, whereas last year during the winter it was dark when they left for school.
High School Students and Later Start Times: Other Jurisdictions:	**What changes in academic performance have been shown by jurisdictions changing to later HS start times?** **Arlington:** (High school moved from 7:30 to 8:19 a.m.) ■ Arlington County posted higher increases in SAT scores following the change than Virginia as a whole (2001 to 2004 Arlington Math scores rose 19 points, 523 to 542, compared with 5 points for Va; 2001-2004 Arlington Verbal rose 35 points, 518 to 543, versus 8 points for Va. (For Black students, math increase was +28 points compared with +14 for Blacks in Va., verbal was +16 point compared with flat for Va. For Hispanic students, was +13, compared with flat for Va. and +12 compared with +2 for Virginia.) **Minnesota:** found slight grade improvement but not statistically significant. Kids more alert, prepared for first class. ■ *Excerpt* (**Changing Times: Findings From the First Longitudinal Study of Later High School Start Times** Kyla Wahlstrom NASSP Bulletin _ Vol. 86 No. 633 December 2002) Given the numerous obstacles to obtaining "clean" data, the analysis took nearly a year. In the and, the comparison of students' letter grades for 3 years prior to the change (starting time of 7:15 a.m.) and 3 years after revealed a **slight improvement in grades earned overall, but the differences were not statistically significant**. The **trend lines** for letter grades earned for all grade levels 9 through 12 for the years of the later start time are **on an upward (positive) slope.** Students' self-report from a written survey on their grades earned corroborate this finding.

STUDENT IMPACT COMMITTEE : ACADEMICS
Research for Student Academic Impact Report

High School Students and Later Start Times: Other Jurisdictions: (cont)	■ *Excerpt (***A Survey of Factors Influencing High School Start Times,** *NASSP Bulletin* Vol. 89 No. 642 March 2005 Amy R. Wolfson and Mary A. Carskadon) Our data indicate that at least as far back as 1986, the majority of the high schools started too early in the morning for most adolescents' sleep needs and schedule, as well as daytime functioning. Many high school and middle level students cannot get to sleep early due to a combination of biological and psychosocial factors, such as homework hours, after-school activities, and family schedules. In addition, **starting school early in the morning interferes with learning, particularly during the first few classes of the day**. School administrators note that many factors prevent adjusting start times later for adolescents, putting the onus for coping with the start time entirely on the students and their families. ■ Increase in SAT scores in Edina: "The actual numbers did show an increase in the SAT outcomes for Edina students after the later start time was initiated" (email correspondence with Kyla Wahlstrom—waiting for data).
High School Students and Later Start Times: Other Jurisdictions:	**How has attendance improved in districts that changed to later HS bell times?** Summary: Three of four jurisdictions reported improved attendance with later start times, including less tardies, fewer sick days, and significant positive impact on at risk students. Another study comparing late and early starting schools found significantly fewer sick days and lower rate of tardies due to oversleeping at the school that started at 8:30 compared to the other two (7:25 and 7:15). **Minnesota:** ■ **Days home sick in past two weeks significantly lower** for 8:30 am start time school (0.28) compared with 7:25 or 7:15 am opening school. ■ *Excerpt:*Second, after the change in start time, **attendance improved for Asian, Hispanic, Black, and White students in grades 9 to 11**. …Attendance rates for all ethnic groups in grade 12 were the same before and after the change in start time. ■ *From Summary*: … **attendance rates for all students in grades 9, 10, and 11 improved in the years from 1995 to 2000, with the greatest rate of improvement for grade 9 students**. ■ Minnesota study compared tardies at three similar jurisdictions with different HS start times (8:30 am, 7:25 am and 7:15 am) and found a **significantly lower rate of tardies** due to oversleeping at 8:30 am starting school. ■ **Edina, Minn**: (high school start times moved from 7:20 to 8:30) ■ We have measured **fewer absences** and fewer students arriving late (Edina later start time summary) **Wilton, Conn**.: (high school start times moved from 7:35-8:15) •Did **not** see any change in attendance or tardiness. **Brevard County,** Fla.: (high school start times changed from 7:30 to 8:30 a.m.) ■ Significant amount of tardies and absences were reduced from first periods.

STUDENT IMPACT COMMITTEE : ACADEMICS
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High School Students and Later Start Times: Other Jurisdictions:	**What changes in continuous enrollment (graduation rates) and dropout rates have been found in districts that changed to later HS bell times?** Continuous enrollment increased, graduation rates improved, and there were fewer dropouts. **Minnesota**: (measured by "continuous enrollment") ■ *Excerpt: (U. of Minn. CAREI study)* A key finding of this study is that the percentage of high school students who were continuously enrolled in the same district or in the same school had **statistically significantly risen** since the 1995–1996 school year. Concurrently, the percentage of students who were not continuously enrolled had decreased significantly. This means that an increasing number of students were staying in the same district or in the same school for 2 or more years, and the number of students who moved in and out of the district or moved from school to school declined steadily. ■ The initial findings from this longitudinal study lead to important considerations for school administrators. Addressing the needs of **students who are at-risk learners, at risk for dropping out of school**, or both is a universal concern. These are often students who have insufficient credits for graduation because they have missed too many first and second hour classes. The study reveals that attendance rates improved significantly when the high schools initiated the later start time; this suggests **that changing start times is one way to recapture those students who might otherwise not complete high school**. (no data from other jurisdictions)
High School Students and Later Start Times: Anecdote:	From a former Fairfax County student: ■ He dropped out of school b/c he had a series of tardies leading to failures. He explained that he was not a "bad" kid. He was NOT out partying all night or even staying up too late, but that he still could not manage to get up early enough to get to school on time every day. He did get his GED and is now working and doing well in college courses. He explained that being able to get enough sleep is making all the difference. He was very happy to hear that FCPS is considering later start times for high school.
Elementary Students Summary	**Academic impacts of earlier start times for Elementary School Students** ■ According to research, all school age children need approximately 9hours of sleep per night. Your Guide to Healthy Sleep, by the U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, National Institutes of Health. Other sources suggest that elementary students need 9-10 hours of sleep per night. ■ Elementary school children differ from teens because their biological clocks have not shifted; therefore, they are able to go to sleep earlier and naturally wake up earlier. ■ As a result, placing elementary schools in the first tier for school start times should not have a negative effect on the amount of sleep that elementary children are able to get, therefore, elementary children should not experience negative effects in their academic performance, purely due to a shift to earlier start times.

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Elementary Students: Research	Some research does suggest that among very young children, morning appears to be the best time of day to engage in learning activities. ■ Staff surveyed by Wheeler (1995) at a child development center reported that children who attended preschool in the morning were better adjusted to school than children who attended in the afternoon. ■ In another study, 154 preschool teachers in a survey conducted in Greece reported twice as many behavior problems in the afternoon than in the morning (Papatheodorou & Ramasut, 1993). It is possible that very young children do better in the morning because they need naps in the afternoon. http://ceep.crc.uiuc.edu/poptopics/timeofday.html#school **Matching teaching time to student learning preferences.** A number of studies suggest that matching time of day to student preference can raise grades, improve test scores, improve behavior, and reduce truancy and tardiness. However, identifying a "best time of day" to teach is difficult because research on preferred time of day shows considerable variation in preference, no matter what the age group. ■ Callan (1998) reported that, based on his research with high school students, less than 10% preferred the early morning, less than 10% preferred late morning, 15% preferred afternoon, 15% preferred evening, and 33% reported no time-of-day preference. The remaining students had two or even three time preferences. ■ Dunn (1985) summarized her time-of-day preference work with elementary school students and reported that 20% preferred early morning, 33% preferred late morning, and 33% preferred afternoon. Comparing Dunn and Callan's statistics on the time-of-day preferences of elementary school students with preferences of high school students suggests that more than twice as many elementary school students as high school students prefer mornings. The data also suggest that throughout childhood and adolescence, children have a wide range of preferred times of day, and there is no one time of day that is good for everyone in any particular age group. After determining their students' preferred learning styles across a variety of factors (e.g., time-of-day preferences, lighting, kinesthetic hands-on learning preferences), teachers in a North Carolina school scheduled more academically challenging subjects at times when the majority of students said they were most alert. There was a vast improvement in teacher reports of overall behavior of the 264 students involved in the study, and test scores gradually improved as well (Klavas, 1994). Gadwa and Griggs (1985) studied learning style preferences of 103 high school dropouts and compared the results with time-of-day preferences of 213 randomly selected high school students from five area high schools and 214 alternative education students. These researchers reported that, among other learning style variables, high school dropouts in Washington preferred evening as their optimal time for learning and had difficulty learning in the morning.

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Elementary Students: Research	Overall, few studies have shown conclusively that, for example, elementary students progress in reading better in the morning or math better in the afternoon. Rather, studies appear to suggest that students do best with any academic subject at their individual preferred time of day. However, some research has been conducted that indicates that elementary students working below grade level do better on reading tasks in the afternoon. ■ Barron, Henderson, and Spurgeon (1994) discovered that below-grade-level first- through fourth-graders at one elementary school (number of subjects not reported) significantly increased their reading achievement scores when instructed in the afternoon as compared to the control group that received morning instruction. Davis (1987) found similar results for 100 first-grade beginning readers (both low-ability and high-ability readers); greater gains were achieved when instruction occurred in the afternoon. ■ In one small study (n = 36), Ammons, Booker, and Killmon (1995) administered the Learning Style Inventory (Dunn, Dunn, & Price, 1990) to fifth-grade students to determine their preferred time of day for learning. The students were then split into two groups and given a science lesson in the morning or afternoon. When tested, students whose preferred time of day matched when they were taught and tested scored significantly higher than students whose time-of-day preference was not matched. Although the authors stress that individual differences preclude saying that all students of a certain grade/age learn best at a certain time, in this study, 24 of the students preferred an afternoon time, 2 a morning time, and 10 had no preference. The authors suggest that schools might consider scheduling more demanding courses in the students' preferred time of day. If this kind of scheduling is not possible for all students, some form of class rotation might be attempted so that all students could have a chance to learn at their preferred times. In other research, Virostko (1983) conducted a study with 286 third- through sixth-graders at one elementary school where either reading or mathematics was offered at the student's preferred time of day for one year. Based on the New York State PEPS test, the students scored significantly higher in the subject that was held at their preferred time of day for learning. In the second year, when the course times were reversed, the results were reversed, and 98% scored higher in the subject that was held at the preferred time of day. Finally, Lynch (1981) studied 136 chronically truant 11th- and 12th-graders and discovered that their attendance and grades in an English class improved dramatically when the scheduled time for the class matched their preferred learning time.
Access to remediation: Comments	**How will the various scenarios impact student access to remedial help (teachers outside of the regular school day, time in the library, and SOL help)?** ■ Teachers will still have the same number of contract hours regardless of bell schedule and will be available for student help outside of the regular school day regardless of bell schedule and/or sports schedules.

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Access to remediation: Comments: (cont)	■ Given the current stress on the transportation system, both in terms of dollars and bus availability, all non-mandated busing is at risk – this includes late buses, especially those that are not directly supporting SOL and NCLB remediation. Under any change in bell schedule, the same stresses will affect the number of buses available for late runs. ■ In the TTF materials on the website, in the questions and answers section, the staff provided the following information in response to a 10/22/07 question: "3. Today, we have 1,143 sets of runs requiring drivers. We have an additional 457 buses used by supervisors, by substitutes, for activity runs at the schools, and for spares. ■ The MPS 2 Report provides data that suggests that more buses would be available for remediation and SOL help if that help were made available in the mornings. This is practical for any schools in the third tier. The MPS charts for all options considered used fewer buses in the morning than in the afternoon. These additional buses could be made available for before school help. Switching to before school remediation and SOL help for schools in the third tier would also allow students to arrive home earlier than if such help were provided after school.
Access to remediation: Other jurisdictions	**What is the experience of school systems that have changed to later start times with regard to students having access to remedial help?** In **Arlington** the majority of teachers reported either the same or more students requesting help before school and almost half of the teachers reported the same or more students requesting help after school. ■ About half of the high school teachers who responded to the teacher survey indicated that they saw about the same number of students before school in 2001-02 as they did in 2000-01. About 13% indicated that they saw more students before school and about 13% indicated they saw fewer students before school in 2001-02. Twenty-five percent of the teachers reported "no opinion" on this item. *Excerpt:* (June 2005 Impact Study) ■ When asked about the number of students they help after school, about 35% of the high school teachers responded "about the same number of students" compared with "last year." About 13% reported helping more students after school whereas about 38% reported seeing fewer students after school during the 2001-2002. About 12% of the teachers selected the "no opinion" response option on this item. *Excerpt:* (June 2005 Impact Study)

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Topic:	**Impacts on School-Based Athletics and Activities** All HS athletics and VHSL Activities; MS intramurals All Co-Curricular and Extra-Curricular Activities; Field Trips; Theater/Dance Productions; Band/Chorus/Orchestras; Literary; Clubs, Middle School After-School Programs; Academic and Remedial Assistance, etc. **Impacts on Non-School-Based Athletics and Activities** All community sports teams and activities; All recreational and individual student sports/athletics; PTA sponsored ES sports and activities; Tutors; Jobs; Religion Classes; Boy/Girl Scouts, Explorers; Music lessons; Youth orchestras (e.g., AYP); Art classes; etc.
Background:	Student activities and athletic programs are an integral part of the total elementary, middle, and high school education program. Fairfax County Public Schools stresses the importance of providing a well-balanced activities program to augment the learning activities in the classroom. Participation in student activities and athletics is truly a learning experience and an enhancement of the regular school day. There is a broad and deep spectrum of national studies and research indicate that: • Participation in athletics and activities promotes citizenship. • Students involved in activities have higher academic performance than do non-participants. • Students involved in activities have better attendance records than do non-participants. • Of all students who drop out of school, 96 percent are NOT involved in school activities. • Participation in school activities is one of the most accurate predictors of success after college The FCPS student activities and athletic program is a progressive experience that will prepare students for the challenges of adult life. The elementary level provides opportunities for students as safety patrols as well as in publications, student government, performing groups, and before-school and after-school enrichment activities. At the middle school level, FCPS provides a comprehensive, high-quality after-school program including intramural sports, and provides for involvement in performing groups, student government, newspaper, yearbook, drama, general interest clubs, and the literary magazine. At the high school level, FCPS offers a wealth of opportunities for student growth and enrichment through athletics, student government, performing groups, publications, honor societies, and special interest clubs. **Within FCPS:** • Approximately 70 percent of the high school population participates in student activities • Nearly 40 percent of all high school students participate in Virginia High School League (VHSL) athletic or academic activities • High school sports had 27,002 participants (2006-07): 8,479 students (Fall 2006); 10,136 students (Winter 2007); 8,387 students (Spring 2007) • Nearly 50 percent of the middle school population participates in The After-school Program Initiative which offers remediation and a variety of clubs including yearbook, intramurals, NJHS, Math Counts, Chess Club and the Spring Musical.
	Benefits of School-Based Athletics and Activities • **Activities Support the Academic Mission of Schools.** They are not a diversion but rather an extension of a good educational program. Students who participate in activity programs tend to have higher grade-point averages, better attendance records, lower dropout rates and fewer discipline problems than students generally. • **Activities are Inherently Educational.** Activity programs provide valuable lessons for practical situations - teamwork, sportsmanship, winning and losing, and hard work. Through

participation in activity programs, students learn self-discipline, build self-confidence and develop skills to handle competitive situations. These are qualities that FCPS hopes to produce in students so that they become responsible adults and productive citizens.

- **Activities Foster Success in Later Life.** Participation in high school activities is often a predictor of later success - in college, a career and becoming a contributing member of society.
- **In essence, athletics and activities support the School Board's new strategic governance initiative and Student Achievement Goals: Academic Achievement, Essential Life Skills, Responsibility to the Community.**

What does the research about participation in school-based athletics and activities show?

- Of the 60 students listed in the May 14, 1998, USA Today's All-USA High School Academic First, Second and Third Teams and the 51 who earned honorable mention, 75 percent were involved in sports, speech, music or debate.
- Sports programs promote responsible social behaviors and greater academic success, confidence in one's physical abilities, an appreciation of personal health and fitness, and strong social bonds with individuals and institutions. Teachers attribute these results to the discipline and work ethic that sports require. (The Role of Sports in Youth Development, Carnegie Corporation, New York, in a report of a meeting in March 1996)
- Students who spend no time in extracurricular activities are 57 percent more likely to have dropped out of school by the time they would have been seniors; 49 percent more likely to have used drugs; 37 percent more likely to have become teen parents; 35 percent more likely to have smoked cigarettes; and 27 percent more likely to have been arrested than those who spend one to four hours per week in extracurricular activities. (Adolescent Time Use, Risky Behavior, and Outcomes: An Analysis of National Data, Department of Health and Human Services, September 1995)
- A study by Search Institute in 1995 indicates that cocurricular activities play a central role in students' healthy development. Yet too many schools are finding it necessary to cut these programs for budgetary reasons. With asset building as a focus, these programs are not peripheral to the school's mission, but important components of a comprehensive strategy.
- Research about participation in high school sports shows: 1) By a 2-to-1 ratio, boys who participate in sports do better in school, do not drop out and have a better chance to get through college. 2) The ratio for girls who participate in sports and do well in school is three to one. 3) About 92 percent of sports participants do not use drugs. 4) School athletes are more self-assured. 5) Sports participants take average and above-average classes. 6) Sports participants receive above-average grades and do above average on skills tests. 7) Those involved in sports have knowledge of and use financial aid and have a chance to finish college. 8) Student-athletes appear to have more parental involvement than other students. 9) Students involved in athletics appear to change focus from cars and money to life accomplishments during the process. (Skip Dane,Hardiness Research, Casper, WY, 1991)
- Athletes do better in the classroom, are more involved in school activity programs and stay involved in the community after graduation. High school athletic participation has a positive educational and social impact on many minority and female students. In addition, sports involvement was significantly related to a lower dropout rate, minority athletes are more socially involved than non-athletes. (Women's Sport Foundations, 1989,U.S. Department of Education's High School and Beyond Study)
- A national survey of high school principals and nearly 7,000 high school students in all 50 states found:

    - 95 percent believed that participation in activities teaches valuable lessons to students that cannot be learned in a regular class routine.
    - 99 percent agreed that participation in activities promotes citizenship.
    - 95 percent agreed that activity programs contribute to the development of "school spirit" among the student body.
    - 76 percent said they believe the demand made on students' time by activities is not excessive.
    - 72 percent said there is strong support for school activity programs from

parents and the community at large.(NASSP, 1985. Indiana University)

Students who participate in school activity programs make higher grades and have better attendance.

- A study of nearly 22,000 students indicates students who participate in some form of interscholastic activities have "significantly higher" grade-point averages than students who do not. Data obtained from the spring 1997 study by Dr. Kevin J. McCarthy revealed student participants in Jefferson County high schools had an overall grade-point average of 3.093 on a 4.0 scale, while the GPA for non-participants was 2.444. (University of Colorado for the Colorado High School Activities Association, 1999)
- In a comprehensive, statewide study of the academic performance of high school student-athletes in North Carolina over a three-year period, the North Carolina High School Athletic Association found significant differences between athletes and non-athletes. Five criteria were used, including grade-point average, attendance rate, discipline referrals, dropout rate and graduation rate, for the 1994-95 academic year.

	Athletes	Non-athletes
Grade-point average	2.86	1.96
Average number of absences per 180-day school year	6.52 days	12.57 days
Discipline referrals	30.51%	40.29%
Dropout rate	0.7%	8.98%
Graduation rate	99.56%	94.66%

- Students participating in athletics and activities reported better attendance than their non-participating classmates. Half of them had no unexcused absences from school and half had never skipped a class, compared with one-third and two-fifths of non-participants, respectively. Students who participated were three times as likely to perform in the top quartile on a composite math and reading assessment compared with non-participants. Participants also were more likely than non-participants to aspire to higher education; two-thirds of participants expected to complete at least a bachelor's degree while about half of non-participants expected to do so. (National Center for Education Statistics, Extracurricular Participation and Student Engagement, June 1995)
- Colorado high school students who participate in some form of interscholastic activity have "significantly higher" grade-point averages and better attendance. Of the students surveyed, the average participant's GPA was 2.96 (on a 4.0 scale), compared to 2.35 for the non-participant. In one school, participants had an average reading test score of 76.30, compared to 58.91 for non-participants. In another school, participants scored 16.17 on the math standardized test, compared to 13.31 for non-participants. A participant missed school an average of 3.59 days a year, while a non-participant missed 5.92 days. The survey showed that the larger the school, the more pronounced the differences in participant and non-participant test scores and attendance results. (Colorado High School Activities Association and the Colorado Department of Education, 1992)
- High school students who compete in activity programs in New Mexico had a 2.80 grade-point average, compared to 2.00 for non-participants. The survey also indicated that more than 60 percent of the state's principals found that GPAs of at-risk students improved by being active in interscholastic activities. (New Mexico Activities Association, 1992)
- 1990-91 study in the Randolph (North Carolina) County school system showed a strong correlation between participation in athletics and positives such as improved grades and increased attendance rates. Athletes in grades 9 through 12 in the school system's four high schools recorded an 86 average, compared to 79 for the general population. Athletes averaged four absences, while the general population averaged seven. Eleven percent of the athletes had discipline referrals, compared to 25 percent of the general population. None of the athletes dropped out, while 3.7 percent of the general population were dropouts.
- In a 1988 survey, John Chevrette and Kenneth Patranella concluded from an investigation in San Antonio, Texas, that educational outcomes related to scholastic performance are enhanced for those secondary students who participate in activity programs. A study of a high school population of 3,536 students found that secondary pupils who participated in more

than one activity during a semester tended to experience higher academic performance levels than other participants and non-participants.

- Students participating in a number of activities not only achieve better academically but also express greater satisfaction with the total high school experience than students who do not participate, according to a 1985 survey conducted for the NFHS by Indiana University. The grade-point average for "high activity" students was 3.05 on a 4.0 scale, compared to a GPA of 2.54 for "low activity" students. Researchers defined high activity as involvement in four or more activities, while low activity students were involved in one activity or none.

- In North Carolina (the only state with a publicly-funded after-school program specifically for middle school students), 92% of the after-school programs resulted in increased academic performance. (Johnson & Dooley, 1999)
- Children who attend high quality after-school have better peer relations, emotional adjustment, conflict resolution skills, grades, and conduct in school. (Posner & Vandell, 1994; Huang, et al., 2000)
- Compared to students not participating in after-school, those who did showed:

    - stronger motivation to achieve,
    - higher educational aspirations,
    - greater capacity to build friendships, and
    - a higher level of interaction and communication with adults.

    (Harvard Family Research Project, 2003)
- Children attending after-school had fewer absences, better conflict management skills, better work habits, higher aspirations for college. (Dryfoos, 1990; Witt, 2001)
- Compared to students spending time in after-school, those who did <u>not</u> were:
    - 49% more likely to use drugs,
    - 37% more likely to be teen parents. (US Dept. of Ed, 1997)
- After-school programs increase engagement in learning by providing middle school students with opportunities to receive personal attention from adults, a positive peer group, and community service activities. (Miller, 2003)
- In San Francisco, participation rates of over 30 days per year in after-school were correlated with significant improvement in math and reading standardized test score<u>s</u>. (Walker & Albreton, 2002).
- In New York City, a longitudinal study that followed MS after-school students through HS found that students who had attended after-school in MS had higher attendance rates in HS, earned more HS credits, were significantly more likely to be promoted on schedule in HS, and had higher levels of school engagement in HS compared with students who did not attend the MS after-school program. (Russell et al., 2007)
- Research shows that participation in after-school programs at the middle school level was associated with reduced delinquency and lower dropout rates in the high school years. (Goldsmidt et al., 2007; Gottfredson et al., 2004)

- **<u>Within FCPS</u>**, almost 40 percent of FCPS athletes earn at least a 3.5 grade point average GPA (4.0 scale).

- **<u>In Fairfax County</u>**, between 2005 and 2006, the average weekly attendance in the middle school after-school program increased by 67%. During the same period, gang related crime decreased by 32% and has continued to decrease in 2007. (Fairfax County Gang Prevention Status Report, www.fairfaxcounty.gov/gangprevention/gangpreventionreport_092407.pdf)

- **<u>Within FCPS</u>**, outcome data from the middle school after-school program (October, 2007) show an average weekly attendance, across all MS, of 15,000 students, and :

    - From a survey (June 2007), the percentage of classroom teachers expressing an opinion who agreed, or strongly agreed, that students participating in after-school programs have improved in:

        - ✓ Turning homework in on time. 68 percent

- ✓ Behaving well in class. 72 percent
- ✓ Participating in class. 74 percent
- ✓ Achieving satisfactory, or better, academic performance. 76 percent
- ✓ Strengthening relationships with teachers. 81 percent
- ✓ Getting along well with other students. 86 percent

- From a survey of parents (June 2007), of those expressing an opinion, 90 percent agreed, or strongly agreed, that their child enjoys attending an after-school program, and the following percentage reported that since attending an after-school program, their child:
  - ✓ Seems happier or less stressed. 79 percent
  - ✓ Has a better attitude toward school. 77 percent
  - ✓ Is doing better academically. 60 percent
- From a survey (June 2007), the percentage of after-school staff (primarily FCPS teachers) expressing an opinion who agreed, or strongly agreed, that students participating in after-school programs have benefited
  - ✓ Academically 93%
  - ✓ Socially 99%
  - ✓ Behaviorally 89%
- Seven Fairfax County Middle Schools participated in the pilot project and began the five-day after-school program in February 2005. For those schools, between the 2004-05 and 2005-06 schools years, there was a:
  - ✓ 27 percent reduction in the number of student behavior incidents leading to a possible expulsion recommendation.
  - ✓ 9.4 percent reduction in the percent of Ds and Fs received in core subjects (English, mathematics, science, social studies).

Participation in activity programs yields positive results after high school as well.

- A separate study done by the Center for the Social Organization of Schools at Johns Hopkins University found that sports had a "small but consistent" impact on a variety of other positive school outcomes, too. The more involved that 10th graders were in athletics, for example, the more likely they were to feel confident of their academic abilities or to be engaged in their schools.
- The Spring 1999 issue of **Assets**, Search Institute, looked at a report from the North Carolina High School Athletic Association. The NCHSAA identified assets that any school-based sports program would inherently develop, along with an additional 26 that purposeful planning could help foster, including:
  - **School boundaries** - Schools provide clear rules and consequences. Most athletic programs have codes of conduct or rules for behavior in addition to school policies.
  - **Youth programs** - Young person spends three or more hours per week in sports, clubs or organizations at school and/or in the community. This is a given with most secondary school interscholastic athletic programs. In fact, far more than three hours per week is usually required.

	○ **Achievement motivation** - Young person is motivated to do well in school. Most athletic programs have minimum standards of achievement that must be met in order to participate in athletics. ○ **Planning and decision making** - Young person knows how to plan ahead and make choices. Because of practice and game schedules, in addition to other responsibilities, secondary school athletes have learned to manage their time. • The February 1996 Career World examines the factors that really matter in gaining acceptance to a college or university. Admissions officers consider grades, test scores and involvement in extracurricular activities in deciding whether to accept or reject an applicant. • Results of a 1987 survey of individuals at the executive vice-president level or above in 75 Fortune 500 companies indicated that 95 percent of those corporate executives participated in sports during high school. In addition, 54 percent were involved in student government, 43 percent in the National Honor Society, 37 percent in music, 35 percent in scouts and 18 percent in the school's publication. • The American College Testing Service compared the value of four factors in predicting success after high school. "Success" was defined as self-satisfaction and participation in a variety of community activities two years after college. The one yardstick that could be used to predict later success in life was achievement in school activities. Not useful as predictors were high grades in high school, high grades in college or high ACT scores. • The College Entrance Examination Board's Scholastic Aptitude Test (SAT) was examined in much the same way. It was found that having a high SAT score did not necessarily indicate success in a chosen career. The best predictor of later success, the study showed, was a person's independent, self-sustained ventures. Teens who were active in school activities, had hobbies or jobs, were found to be most likely to succeed at their chosen profession and make creative contributions to their community. **Community Use** FCPS facilities are used extensively by community groups. Fairfax County Department of Community and Recreation Services schedules use of all FCPS fields and gymnasiums for use by the athletic community. The Fairfax County Park Authority utilizes school buildings and grounds for classes, camps, and summer Rec-Pac programs as well as other general uses. Over 132,000 individual events will be scheduled in FCPS facilities this year. About 300,000 users utilize 239 gymnasiums and 533 fields from the end of the school day until 10:15 pm Monday through Friday and all day on Saturdays and Sundays.
Potential Impact:	This section examines the Positive and Negative Impacts on both School-Based and Non-School-Based Athletics and Activities by Bell Option (A-E) and grade level (HS, MS, ES). **<u>Positive Impacts</u>:** **A-E**: Community for-profit programs are expected to adjust to any changes in the school schedule to maintain profitability. **<u>HS</u>:** **A-E**: Well rested students may have higher participation in athletics **A-E:** Adequate sleep has positive impact on athletic performance, and recovery from sport training. **A-E:** May have easier time recruiting coaches. **A-E:** schedule will be more like Loudoun county, Arlington county and TJ for interscholastic sports competitions. **A-E:** Plans by the school system and county for new synthetic turf fields, which increase use capacity by 62%, should help ease impacts (FCPA website on 2006 bond and FCPS School

	BoardDocs consent agenda item for Regular Meeting, Jan. 10, 2008) **C, D&E:** Potential for sufficient time for athletics and activities after school and continue to have a positive impact on students' academic, social, emotional, and recreation needs. (Option C was not considered to be a viable option by some members of SIC due to the impact the late 3:45 dismissal time would have on Athletics) **C, D&E:** Those providing music, art, tutoring, SAT, and religion classes have an adequate time window. (Option C was not considered to be a viable option by some members of SIC due to the impact the late 3:45 dismissal time would have on Athletics) **C, D&E:** Potential for sufficient time for recreational athletics and activities after school and continue to have a positive impact on students' academic, social, emotional, and recreation needs(Option C was not considered to be a viable option by some members of SIC due to the impact the late 3:45 dismissal time would have on Athletics) **MS:** **B&E**: Sufficient time to maintain high-quality after-school program and continue to have a positive impact on students' academic, social, emotional, and recreation needs. **B&E**: Sufficient time for recreational athletics and activities after school and continue to have a positive impact on students' academic, social, emotional, and recreation needs. **E**: Those providing music, art, PSAT, tutoring, religion classes have a larger time window **A,C,D:** MS students will have 1 3/4 hours vs. 3 ½ hours for the FCPS after school program which will result in lower costs to the county **ES:** **A-D**: Increased opportunity for enrichment and sports activities after school **A-D**: Fields available earlier for HS conditioning or practice and community use. In most cases, fields are too small for HS game use. **A-D:** Those providing music, art, tutoring, religion classes have a larger time window than present. **Negative Impacts:** **HS:** **A-E:** Would require a revision of nearly all co-curricular and extra-curricular activities and athletics and the possible elimination of some. Reduced opportunity for athletes to receive academic assistance before afternoon practice. Increased competition for gyms and fields between HS, MS, and community users. A later start of the school day will result in a later time at which high school students finish practices, decreasing the time these facilities are open to other community organizations. Athletic practice times may be reduced leading to reduced preparation and possibility of increased injury rates. Warm-up and pre-conditioning times for athletes may be reduced, leading to possibility of increased injury rates. Reduced opportunity for participation in athletics and activities.

	Impact on schedule Swim/Dive pool use and avoid peak public use times. Reduced opportunity for students to complete their community service hours requirements. Increased travel times to practices and Freshmen games due to travel during rush hour. Lack of lighted fields and courts precludes use after dusk limiting the number of fields available for practice. **A-C:** Impact on District band, orchestra, and choral practices and events. **A-C:** Students may need early release to meet co-curricular and activity requirements and athletic events thus missing part of the academic school day. Other jurisdictions that have instituted later high school opening times have commented on this impact: **A-C:** Reduced opportunity for all students to participate in extra-curricular and co-curricular activities after school. Reduced time for practicing instruments, meeting with tutors. Reduced opportunity for recreational athletics**.** Senior Boy/Girl Scouts/Explorers challenged to complete advanced awards. Those providing music, art, tutoring, religion classes, etc. have a much smaller time window **MS:** **A, C, D:** Would require a major revision of nearly all co-curricular and extra-curricular activities and the possible elimination of some. **A, C, D:** Would cause a major revision of and possible elimination of the middle school after-school program which would reduce the opportunity to address the academic, social, emotional, and recreation needs of youth. **A, C, D:** Reduced opportunity to meet with teachers, use library, access computer lab at the end of the day. **A, B, C, D**: Increased competition with HS and community groups for use of gyms and fields. A later start of the school day may result in a later time at which high school students finish practices on MS fields and gyms, decreasing the time these facilities are open to other community organizations.. **A, C, D:** Reduced opportunity for students to complete their community service hours requirements. **A, C, D:** Reduced time for practicing instruments, meeting with tutors **ES:** **A, B, C, D:** Reduced opportunity for enrichment activities in the before school hours.
Transition Requirements:	Options A, B, and C would require a revision of nearly all athletic and co-curricular and extra-curricular activities at the HS level and the possible elimination of some. Options D and E would also require significant adjustment of nearly all athletic and co-curricular and extra-curricular activities at the HS level. Options A, C, and D would require a major revision of and possible elimination of the middle school after-school program which would reduce the opportunity to address the academic, social, emotional, and recreation needs of youth. Options A, B, C, and D would have an impact on access to FCPS gyms and fields by the 300,000 community users. Ending the school day this late will result in later times at which HS and MS

<table>
<tr><td></td><td>students finish use of the gyms and fields, decreasing the time these facilities are available to other community organizations. Youth and adult leagues access will be pushed to much later in the evening.</td></tr>
<tr><td>Majority & Minority Opinions:</td><td>Majority of this sub-committee believes this transition can work with HS ending at 3:25-3:45 pm and MS ending at 4:10-4:30. Some members of the committee believe that before school conditioning, practices and activities occur now and are therefore a viable and effective solution if later start times are adopted. Their recommendation:

<table>
<tr><td></td><td>HS</td><td>MS</td><td>ES</td></tr>
<tr><td>Better Option</td><td>C, D E</td><td>A, B C, D</td><td>A, C</td></tr>
<tr><td>Worse Option</td><td>A, B, D, E</td><td>A, B, D, E</td><td></td></tr>
</table>

Minority of our committee believes that any option that extends HS beyond 3:15-3:30 would have an extremely negative impact on HS activities and athletics. They also believe that any option that extends MS beyond 3:30 – 3:45 would have an extremely negative impact on the Middle School After-School Program. Their recommendation:

<table>
<tr><td></td><td>HS</td><td>MS</td><td>ES</td></tr>
<tr><td>Better Option</td><td>D, E</td><td>B, E</td><td>A-E</td></tr>
<tr><td>Worse Option</td><td>A, B, C</td><td>A, C, D</td><td></td></tr>
</table>

Discussion followed about merging by 10 minutes C & D. ES would go earlier, but MS/HS would be release earlier. No vote was taken by SIC members, but the idea will be brought up to the TTF.</td></tr>
<tr><td>High School Student Comments:</td><td>Student A: Thinks it would be possible to start practices closer to the end of the school day.
Student B: With a later start time, the after school activities may be put on the “back burner” relative to sports due to the need to get children home before dark. Students are already getting picked up from their practices late (8 – 9pm). I am not advocating the late release of students, seeing that some athletes may not have rides home that late into the night. For some sports it is too dark to practice outside at a late time. I feel that if this is already happening now, that it should not be a huge factor in the final product.
Student B: The Learning Seminars (LS, blocks of time on a rotating schedule during the school day for students to meet with teachers) have been extremely helpful. If LS are placed in all HS, you could move up the practice time because there would be no need for remedial help after the school day.
Student B: Morning practices are already happening in the HS. Club swimming and conditioning for multiple sports are taking place in the morning.</td></tr>
<tr><td>Other Models:</td><td>Findings from the CAREI Report show:

<u>Minnesota:</u> Sports and activity participation stayed the same. Practices shortened. Generally positive feedback from coaches after the change, but some still firmly opposed. Some students had to leave last period of day early for away games/meets.

Excerpt of U. of Minn. CAREI Report: Minnesota study compared three demographically similar jurisdictions with different HS start times (8:30 am, 7:25 am and 7:15 am) and found students at all three participated in after school sports and extracurriculars at similar rates. Concluded that later start time did not restrict participation.

In all districts with the later start in the morning, afterschool athletic and other activity practices, extended-day programs, and rehearsals were shortened, with students arriving home at a later hour than they did in 1997. However, actual participation rates in afterschool activities, including sports and cocurricular activities, remained at the same levels after the implementation of the later high school start time as they had been before the change. Coaches and activity leaders were generally supportive of the change because they saw students who were less tired and seemingly more mentally alert at the end of</td></tr>
</table>

	the day. A few coaches whose sports involved long practices and traveling long distances for events were outspoken about their dislike of the later start and dismissal time for the school day. (Wahlstrom, Changing Times: Findings from the First Longitudinal Study of Later High School Start Times, NASSP Bulletin, December 2002) Parents, students and staff all agree it has been a good change. It is unusual to have so much agreement about an issue in education today . . . beginning at 8:30 as compared to the 7:25 start. There has been no drop off in after-school sport or extracurricular activities as was predicted. In fact, there has been a slight increase. We have continued the start time for four years, believe it to be very beneficial to our students and plan to continue it into the future. (Dement, Stanford University, published in 2006, Edina Public Schools News & Reports) Educators who have experienced the change to a later start as positive speak forcefully about its impact. "Even though the change in starting time has affected after-school activities, I feel that the benefit – of having school hours more tuned into "teenage clocks" – are significant." Said one teacher. Another commented, "if you are involved in any kind of after-school activity, it can be difficult to take care of personal business, but the positives for the kids outweigh this single personal consideration.". (CAREI Report Bemis, and Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999) Because of early dismissal for activities, sports practices, and personal appointments, many students missed the last period. Teachers were unable to cover the desired amount of curriculum and students missed class discussions, labs, and required assignments. One teacher wrote, "Now, I lose ½ of my sixth hour IB class in the fall due to sports' start times." Another teacher-coach, "I had to excuse my student athletes from class 13 times this spring for track meets." (CAREI Report and Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999) Less than 28% of all Minneapolis high school students participate in interscholastic sports activities. The participation rates at the seven HS are: 17%,19%, 23%, 23%,31%, 31%, 43%. (MPS, Dept. of Athletics) The CAREI Report documents significant differences in both implementation and initial outcomes of later HS start times in Minnesota between small, suburban, affluent communities (Edina) and large, urban school divisions (Minneapolis). How the policy process played out in each community had a substantial impact on how the changes were received by families. Some school districts and individual schools took great pains to involve the school community and keep members informed of the anticipated changes in school starting time. Other districts and schools had as little as one week to implement the change in schedule. Clearly, those districts and school communities that had ample warning reported less difficulty in making the necessary adjustments. In the large, urban school division focus groups, students report felt more tired at the end of the day, decreased participation in extracurricular activities, had less time to study, practices were shorter and sometimes held in the morning, defeating the purpose of later start times, conflicts in schedules forced students to restrict the number and type of extracurricular activities in which they could participate, later dismissal restricted the number of hours they could work, the amount of money they could earn, and the type of jobs available to them. Teachers report students were less involved in extracurricular activities, fewer students sought academic help before and after school, because of the need to release student athletes early for games/meets, students often chose electives over required courses when required courses were scheduled for last period, because of late-day weariness and personal obligations, there was decreased teacher supervision for after-school activities. (CAREI Report; Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999; Wobel, The Impact of School Starting Time on Family Life, Phi Delta Kappan, January, 1999)) However, the majority of students in the suburban focus groups said that they felt less tired at the end of the day when they did their homework and that the later dismissal had not negatively affected their involvement in after-school activities. Nearly all the students in the focus groups noted that they we re feeling more rested and alert for the first hour of class and that they were generally going to bed at the same time as they had been when the starting time was an hour earlier —thus they were, indeed, getting about one hour more of sleep each school night. Indeed, almost three-quarters of the teachers surveyed (72.7%) chose a starting time of 8 a.m. or later. (CAREI Report Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999)

	It was apparent when looking at the data across communities that not all schools were equally supported in making the schedule changes. Some communities expended substantial effort to ensure that schedules for before- and after-school activities were accommodating. In other communities, respondents told us that the school schedule was the only one to change and that they felt out of synch with the rest of the world. The conflicting schedules affected opportunities for recreation and sports, medical appointments, and jobs for teens. (CAREI Report Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999; Wobel, The Impact of School Starting Time on Family Life, Phi Delta Kappan, January, 1999) Also of note is the negative impact on academics when school districts shifted their sports practices and activities to the morning after shifting to later HS start times. CAREI found a statistically significant negative correlation between scheduling sports practices in the morning and academic success; i.e., the more practices held in the morning, the lower the students' self reported grades. They found no relationship between participation in sports and letter grades when practice occurs after school or on the weekend; that is, letter grades are not affected positively or negatively if students practice after school or on the weekend. An interesting sub finding is that in looking at hours of practice instead of days of practice per week, there was a statistically significant, positive relationship between the numbers of hours of practice on school days and self-reported grades. However, this effect was only found *if practice did not occur before school*. One may speculate that the fewer hours a student has available, the more efficient the student will manage his/her time. Finally, there is no statistically significant relationship between participation in extracurricular activities other than sports and self-reported letter grades. In other words, letter grades are not affected positively or negatively by participation in extracurricular activities other than sports. (CAREI, 1998 Executive Summary) Middle School Comparisons: Perhaps the most important information discovered is that there are not many variables on which these two districts differ significantly, despite the fact that the start times are dramatically different (i.e., Minneapolis middle schools start at 9:40 AM and District B middle schools start at 7:30 AM). However, the findings that do demonstrate statistically significant differences all support the argument that changing Minneapolis middle school start times does not negatively impact Minneapolis middle school students. Of importance is that students in Minneapolis are getting more sleep each night, on average, than students in District B (compare 8 hrs, 42 min to 7 hrs, 25 min). "Clearly, the least desirable and most problematic start time was the 9:40 start time at the middle schools." (Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999; Minneapolis Public Schools Start Time Study, Executive Summary, Nov., 1998) A survey by a middle school student designed to assess students' opinion of the later start for a class project showed a majority of his peers favored the later start, with reports of less fatigue and easier learning in early classes. (CAREI Report Bemis, and Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999) Teachers report that the late start time did not provide a sufficient amount of prime time learning in the morning. Although a few commented that they were better able to handle discipline problems and that students were more alert and doing better, the majority of teachers reported students to be more difficult to motivate at the end of the day as a result of teacher and student fatigue. Teachers report decreased effectiveness in managing student behavior. Teachers report students involved in co-curricular and extra-curricular activities often had to leave class early, missing all or part of the last academic period, disrupting learning for others. Activities were simply too late in the day and the time remaining after school was too short. Fewer MS students participated in after-school activities. Fewer students stayed for tutoring at the end of the school day. The late start time seemed to communicate to personnel and students that learning was not a priority. Parents were concerned about students participating in after-school activities because of the late arrival home when it was particularly unsafe. Safety was also a concern in the morning, when parents left for work and students had to get themselves off to school. (CAREI Report; Kubow, Wahlstrom, and Bemis, Starting Time and School Life, Phi Delta Kappan, January, 1999; Wobel, The Impact of School Starting Time on Family Life, Phi Delta Kappan, January, 1999) Judy Farmer, Minneapolis School Board Member said, "…middle school parents … have made it clear

	that 9:40 am is too late to be starting school. The 4:10 pm dismissal time has also played havoc with after-school activities for middle schoolers. By then it's pretty late to squeeze stuff in before dinner." (The School Administrator, AASA, March, 1999) After School Activities: In terms of after school activities other than homework, start time does not seem to be restricting student participation in organized sports. If anything, Minneapolis students spend more time than those in District B, on average, participating in organized sports during the school week. Minneapolis Student Council Members spend the most time participating in organized sports during the school week compared to the other two groups. This finding is not related to school start time, which, to reiterate, does not appear to restrict student participation in organized sports. Also there is no statistical significance between the amount of time spent participating in extracurricular activities on the weekend among these three groups. This finding also supports the assertion that school start time is not restricting student participation in extracurricular activities. (Minneapolis Public Schools Start Time Study, Executive Summary, November 1998, K. Wahlstrom, G. Wrobel and P. Kubow,Center for Applied Research and Educational Improvement, University of Minnesota) **Arlington:** Two-thirds of students had the same or increased participation in extracurriculars. School staff able to accommodate extracurriculars, able to minimize impact. Excerpt: (June 2005 Impact Study, summary) How effectively were the system's resources used to achieve the identified goals? The transportation system handled the switch with minor glitches, and the school staff did an admirable job in accommodating the changes, including minimizing the impact on extracurricular activites. Background:The final consideration built into the proposal was that the change should not adversely impact astudent's potential to participate in extracurricular activities. The intention was that the same activities would be available to students at times adjusted around the new academic day. Data Sources, Student Survey: Attendance data are not systematically maintained for extracurricular activities in a manner that allows for comparison between years. Therefore, the survey responses from students were analyzed to address this evaluation question. The student survey included an item that asked students to compare their participation in afterschool activities during the 2001-02 school year versus the 2000-01 school year. Students were instructed to respond "true," "false," or "no difference" to the statement: "This year I am participating in more after-school activities than last year." They responded: 29% True 29% False 36% No Difference 6% No Response It appears from the responses of high school students that students were able to participate in after-school activities after the start time changes. That is, about 65% of the students indicated that either there was no difference in their participation or that they were participating more in 2001-2002. (Arlington Public Schools, Impact of 2001 Adjustments to High School and Middle School Start Times) Very few negative impacts on sports practices and games from later start and end time. Away games for freshman basketball had to be scheduled for a half hour later than before (from 4 pm to 4:30 pm). Other basketball games that follow only shifted by 15 minutes. Now away games are 4:30 pm (freshman BB), 6 pm (JV) and 7:45 pm (Varsity). Practices: Most practices start at 3:30 pm. All three high schools have synthetic turf fields. In order to share with community that also wants to use those fields, high school teams have to get off the fields at 6:30 pm. Some teams practice on natural grass fields so they can go longer (football, for example, goes longer). Some high school practices are at middle schools, which dismiss earlier. HS can use MS gyms until 6:30 pm. They don't use ES fields for HS practices. Arlington provides three PM buses daily for high school students to go from school to home: 1) at 3:01 pm dismissal, 2) late bus at 4:30 pm M-Thurs for kids who need to stay after for tutoring, etc. 3) sports bus at 6:30 pm. (Debbie DeFranco, Supervisor, Health, Physical Education & Athletics for Arlington County, was a member of Arlington County's School Start Time Steering Committee, Interview 12-4-07)

Note that although the Arlington HS shifted to a later start time, the MS shifted to an earlier start time - from 8:10 am to 7:50 am. Arlington found an increase in the number of students participating in middle school after-school enrichment activities after the change. (Arlington Public Schools, Impact of 2001 Adjustments to High School and Middle School Start Times**)**

Wilton, Conn. (School district with one HS of 1300 students): Wilton saw increased sports participation and one of its best sports seasons ever. Only problem proved to be some students having to leave last period early for some away games.

Excerpt (NSF Case Study, reviewed by Wilton school system)

Wilton faced two main challenges in proposing a change in start times. First, Wilton is a self described "sports town." The Wilton Sports Council, a body representing the interests of the little league, soccer clubs and other private sports organizations, was a tough opponent to the change. They insisted that any change in start times would lead to the expulsion of Wilton teams from the athletic conference, a price too high to pay for any other possible benefit. Second, there were reservations raised by the parents of younger children, who would not reap the benefits of changing starting times, especially if their children now would have to arrive earlier.

Teachers who also coached at the schools were concerned before the change that they would be unable to make it to practices, but this turned out not to be a problem. Wilton High School had one of its best athletic seasons, even earning several state championships. The high school athletic programs saw a continued rise in participation.

The only problems were for students who had to be pulled out of class early for away games, and for students who participated in more than one sport, although this full schedule would be difficult with any school start time.

Excerpts (League of Women Voters of Connecticut Concurrence Statement, 2005):

In Wilton, the percentage [of students participating in extracurricular activities] has been estimated at more than 75%. Because many student organizations and clubs meet weekly or monthly -- frequently outside of school hours, in the morning or evening, a shift in the school day schedule should affect these organizations only minimally, if at all…

Edina, Minn (District has one HS): Excerpt (Edina public schools later start time summary): There has been no drop off in after-school sport or extracurricular activities as was predicted. In fact, there has been a slight increase.

Edina, Minn (District has one HS): Since shifting to a later start time, Edina HS has added a "Zero Hour" Program from 7:30 am – 8:30 am from Monday through Friday. In addition to two semesters of Recreational Fitness, Health, and Varsity Choir, they also offer Chemistry, AP US History, and AP European History from 7:30 – 8:30 am.

Brevard County, Fla.: Middle School: They hold before school activities rather than after school, with students providing their own transportation.

Fairfax, VA (TJ)

Thomas Jefferson HSST can serve as a model: TJ's schedule is 8:30 to 3:50 pm, a day that starts more than an hour later than all other Fairfax high schools and ends 1 hour and 45 minutes later (because of its longer school day). TJ nonetheless has a vibrant sports program (offering all the same sports as other high schools) and extensive clubs and extracurricular activities, despite the fact that students come from as far away as Fauquier County. TJ also has an activity period built into their schedule. TJ students

	also work and have internships, which are worked around the school schedule. The sports that require early release from TJ during class time are freshman boys' and girls' basketball and boys' and girls' tennis for some away games. (interview 12/3/07 with Melody Modell, TJHSST Director of Student Activities and Athletics) At South County Secondary School, which opened in 2005, participation in the middle school after-school program has varied (135 average daily attendance in 2005-06, 40 average daily attendance in second quarter 2006-07, 64 average daily attendance in first quarter 2007-08). The reasons for this drop in attendance are unclear. A change in bell schedule (2005-06 dismissal at 2:30, 2006-07 dismissal at 4:05) may have excessively reduced the time for these after-school activities. The drop in attendance may also reflect instability as the after-school program develops a full complement of activities and recruits sponsors, as well as space and logistical issues with an increased population of students in the building. The School Board is urged to evaluate the reasons for these changes.
Research:	On the FCPS Athletic Programs: Health Information Page 1. Sleep Athletes are putting extra demands on their bodies and need adequate time to recover from a demanding schedule of school and sports training. A good night's sleep is essential for an athlete to succeed. Managing time is essential for success, in the classroom and in the sports world. http://www.fcps.edu/supt/activities/athletics/health.htm ScienceDaily (Jun. 14, 2007) — Athletes who get an extra amount of sleep are more likely to improve their performance in a game, according to recent research. Sleep May Be Athletes' Best Performance Booster, Lynne Lamberg Chronobiology studies are giving athletes and coaches valuable information on sleep strategies that could help ensure that an athlete's performance doesn't become a victim of too little sleep. http://pn.psychiatryonline.org/cgi/content/full/40/16/21 School start time & teen sleep, Wahlstrom, High School Magazine, May 2000 Sleep and Sports: Get the Winning Edge! Bond V et al. Effects of sleep deprivation on performance during submaximal and maximal exercise. Journal of Sports Medicine 1986; 26: 169-174. Ketchum BJ. Sleep deprivation can hinder sports performance. SportsMedicine.com 1999. Martin B and Chen H. Sleep loss and the sympathoadrenal response to exercise. Medicine and Science in Sports and Exercise 1984; 16(1) 56-69. Martin B, Gaddis G. Exercise after sleep deprivation. Medicine and Science in Sports and Exercise 1981; 13(4): 220-223. Montelpare W, Plyley M, Shephard R. Evaluating the influence of sleep deprivation upon circadian rhythms of exercise metabolism. Canadian Journal of Sports Science 1992; 17(2): 94-97. Mougin F, Simon-Rigaud M. Effects of sleep disturbances on subsequent physical performance. European Journal of Applied Physiology 1991; 63: 77-82. Powell NB et al. A comparative model: Reaction time performance in sleep-disordered breathing breathing versus alcohol-impaired controls. Laryngoscope Oct. 1999; 109(10): 1648-1654. Reilly T, Deykin T. Effects of partial sleep loss on subjective states, psychomotor and physical

performance tests. Journal of Human Movement Studies 1983; 9:157-170.

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From FCPS Office of After-School Programs:

Why After-School?

Providing after-school, weekend, and summer activities for children and youth has been a long tradition in public schools. Two factors have lead to the explosive growth, over the past few years, of after-school programs in many schools. First, the development of challenging standards for all students is creating the need to provide additional time and opportunity for those who may be struggling academically. Second, an increasing number of parents, married and single, are working full time, leaving many young people without adult contact or supervision at home at the end of the regular school day.

Many states and local districts have taken the initiative to establish and fund after-school opportunities for elementary, middle, and high school youth to: provide a safe haven for young people, improve academic achievement, improve student behavior, and reduce risk-taking behaviors and substance abuse. In addition, after-school programs can create a powerful dynamic for crafting collaborative relationships to create great programs among schools, youth, community organizations, cultural institutions, and other entities.

Recent published research by Dr. Robert Blum, stemming from the National Longitudinal Study of Adolescent Health (Add Health Study), showed that race, ethnicity, family income, and family structure cannot predict whether a teen is likely to participate in risky or unhealthy behaviors. This long-term study of 12,000 youth from 137 middle and high schools did show the two strongest predictors of adolescent substance abuse and behavioral issues: (1) academic difficulties in school and (2) unsupervised time after school. (Blum et al.) In addition, being at academic risk was nearly universally associated with every health risk factor. This extensive study supports the importance of young people having a safe, supervised learning environment during those critical hours after school. High-quality after-school programs can directly address the two strongest risk factors impacting children and youth.

In their original analysis of Add Health data, Resnick et al. showed that students who feel connected to school are less likely to: use alcohol and other drugs, engage in violent or delinquent behavior, become pregnant, and experience emotional distress. School connectedness (a student's feeling of being part of and cared for at school) was identified as the only school-related variable that helped build resilience to eight different health risk outcomes among adolescents. School connectedness plays in significantly reducing risk-taking behavior in adolescents; such was the theme of Dr. Robert Blum's keynote address at a recent Safe and Drug Free Youth Conference. McNeely et al. have recently shown that student participation in after-school activities (extracurricular) and improved school attendance are two of the key factors that lead to improved school connectedness.

There is a growing body of research evidence (National Institute of Out-of-School Time (NIOST) Fact Sheet) indicating that high quality after-school programs can improve: school connectedness, student

attendance, student classroom behavior and reduce risk-taking behavior. A recent multi-year study of four after-school programs (Grossman, et al.) showed a significant reduction in risky behavior in students who participated in the after-school programs. In essence, there is solid research evidence showing that after-school programs reduce youth violence and gang activity, reduce alcohol, tobacco, and drug use, increase school and community connectedness, improve academic achievement and narrow the achievement gap.

After-school opportunities can provide young people with a positive alternative to spending time on the streets or being home alone. Clearly there is great need for sustaining and increasing proven and effective programs that serve the needs of young people during the after school hours.

What does the national data say about risk factors impacting children and youth?

In 69% of all married-couple families with children ages 6 - 17, both parents work outside the home; in 78% of female-headed families and 84% of male-headed families, the custodial parent works outside the home. (NIOST, 2004)

The gap between parents' work schedules and children's school schedules is about 22 hours per week. (Annie E. Casey Fdn./ US Dept. of ED, 2000)

On school days, between 3 pm - 6 pm, violent juvenile crime triples. (FBI, 2003)

The most common time for youth to engage in sexual activity is between 3 pm and 6 pm. (Howell, 1998)

Children who are unsupervised for 11+ hours/week are twice as likely to use alcohol, tobacco, or other drugs (ATOD). (Mulhall, 1996)

Middle school students who spend 3+ hours home alone after school are significantly more likely to: use drugs and alcohol, have high levels of stress & anger, experience behavior problems, perform poorly academically. (Center for Prevention Research and Development, 1998)

The number of overweight teens has tripled in the past 30 years. (Ogden et al., 2002)

What does the local data say about risk factors?

In January 2001, the Communities That Care survey was administered to roughly 40% of the 8th, 10th, and 12th graders in the Fairfax County Public Schools. Survey results further support the need for structured programming for youth. For example, 57% of respondents indicated that they spend time at a friend's house without an adult present; 34% spend time at least once a week when no parents are present; and 50% indicated that they hung out at a mall or parking lot, 3 or more times a month. Key findings related to risk and protective factors identified elevated risk factors in all four domains. Youth in Fairfax County indicated less than average feelings of neighborhood attachment, adequate family supervision and discipline, and commitment, or connectedness, towards school. Specific findings related to substance abuse and violence-related behaviors included the following:

- 10% of 8th graders reported smoking cigarettes in the last 30 days
- 21% of 8th graders reported they currently consume alcohol
- Almost 5% of youth in 8th grade reported current use of inhalants
- 5.1% of youth in 8th grade indicated current use of marijuana
- The number of times respondents indicated they used alcohol in the past 30 days

increased for each grade

- 46% of all respondents indicated that they had been bullied, taunted, ridiculed, or teased at least once, with 11.8% reporting ten or more occasions in the past year

The 2003 Virginia Youth survey indicated that these numbers have fallen a small amount, but are still large. There is ample evidence indicating a substantial increase in youth gang activity and gang recruitment in Northern Virginia that was not addressed in detail in either survey.

The Fairfax-Falls Church Community Services Board (CSB) completes annual Community-Based Prevention Plans that involve input from the entire community: residents, community organizations, service providers, faith communities, public safety, youth, businesses, and the school system. This plan prioritizes prevention needs and services. Each year, the needs identified by hundreds of stakeholders have consistently related to after-school programming for youth, especially in identified high-risk communities. Identified concerns included unsupervised youth during after-school hours and a lack of positive youth activities at neighborhood levels.

What does the research say about the outcomes of after-school programs?

In North Carolina (the only state with a publicly-funded after-school program specifically for middle school students), 92% of the after-school programs resulted in increased academic performance. (Johnson & Dooley, 1999)

Children who attend high quality after-school have better peer relations, emotional adjustment, conflict resolution skills, grades, and conduct in school. (Posner & Vandell, 1994; Huang, et al., 2000)

Compared to students not participating in after-school programs, those who did showed:

- stronger motivation to achieve,
- higher educational aspirations,
- greater capacity to build friendships, and
- a higher level of interaction and communication with adults. (Harvard Family Research Project, 2003)

Children attending after-school had fewer absences, better conflict management skills, better work habits, higher aspirations for college. (Dryfoos, 1990; Witt, 2001)

Compared to students spending time in after-school, those who did not were:

- 49% more likely to use drugs,
- 37% more likely to be teen parents. (US Dept. of Ed, 1997)

After-school programs increase engagement in learning by providing middle school students with opportunities to receive personal attention from adults, a positive peer group, and community service activities. (Miller, 2003)

In San Francisco, participation rates of over 30 days per year in after-school were correlated with significant improvement in math and reading standardized test scores. (Walker & Albreton, 2002).

Much of this research indicates that quality after-school programs can markedly increase engagement in learning and students who are engaged in learning behave better in school, have better work habits, improved attitudes towards school, a greater sense of belonging to the community, and better

relationships with parents. Children and youth are not the only ones to benefit. When disruptive behavior in the classroom is reduced, teachers have more time to engage all students in learning. Positive effects extend to families, employers, and the community. Recent research indicates that after-school programs are likely to produce a significant return on the initial investment.

A survey of 1178 police chiefs, sheriffs, and prosecutors, by greater than a 4 to 1 margin, reports that after-school programs have the greatest impact on reducing youth violence and crime (Mason-Dixon Polling & Research, 2002). In a different poll, nearly 9 in 10 police chiefs said that expanding after-school programs will "greatly reduce youth crime and violence." (Poll of Police Chiefs, Fight Crime: Invest in Kids, 1999)

In a cost-benefit analysis done in Wisconsin, researchers concluded that 64 schools saved over $1,000,000 during a one-year period due to the reduced number of students retained in grade or referred to special services due to the child's participation in after-school programs (Riley, et al., 1994). A California study compared the number of after-school students retained in grade compared to the general school population and projected cost savings of over $11 million in 2001 – 2002 alone. Brown et al, 2002 calculated the benefits associated with California's new after-school initiative and estimated the return to the taxpayers ranges from $8.90 - $12.90 for every dollar invested in the program.

In addition to savings for the taxpayer, businesses report reduced turnover, lowered absenteeism, and increased productivity where quality after-school programs were available. (Barnett, 2004). In a recent needs assessment conducted by the Fairfax County After-School Network, working parents of middle school students responded to the lack of after-school programs at the following rates:

- 84% worry about their children at home alone.
- 46% have limited their work hours or choice of employment.
- 43% have had to take time off work.
- 48% report negative impact on productivity at work.

A growing concern in Fairfax County is the rapid increase in youth gang activity. The after-school hours (3 to 6 pm) are the prime time for juvenile crime and gang-related crime on school days. In addition, a leading risk factor for joining gangs is unsupervised time spent with friends. Work by Fight Crime: Invest in Kids shows that shutting off the pipeline that delivers youth into gangs can be very effective. After-school programs and anti-bullying programs can protect youth from gang violence and remove some of the pressures to join gangs.

High-quality after-school opportunities can provide young people with a positive alternative to spending time on the streets or being home alone. Participating in positive, goal-directed activities can give all youth an opportunity to develop skills, build character, and partake in challenging, fulfilling opportunities. It can also lessen their chances of engaging in risk-taking behaviors by occupying idle time, strengthening commitment to school and community, and exposure to positive peer and adult influences.

After-school programs are a critical community need for young people. High-quality after-school programs help all youth

- be safe,
- stay drug- and alcohol-free,
- avoid the pressure of gangs,

- succeed in school,
- form positive relationships with adults,
- make new friends,
- contribute to the community, and
- learn new skills.

Prepared by the Office of After-School Programs, Fairfax County Public Schools (1/2005).

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<table>
<tr><td>Topic:</td><td>Student Employment</td></tr>
<tr><td>Description:</td><td>Secondary Students: 72,000 enrolled in FCPS grades 7-12. Mason District Middle Schools include 6th grade (Glasgow, Poe, Holmes)

Summary of options:
<table>
<tr><td></td><td>High School</td><td>Middle School</td><td>Elementary School</td></tr>
<tr><td>Better Option</td><td>C, D, E</td><td></td><td></td></tr>
<tr><td>Worse Option</td><td>A, B</td><td></td><td></td></tr>
</table>
Based on student employment, Option C, D or E</td></tr>
<tr><td>Potential Impacts:</td><td>1. Later start times have no impact on the number of hours worked or the ability to shift work schedules (Minnesota Start Time Study). In focus groups, some urban students reported a negative impact on the number of hours worked, amount of income earned and the types of jobs available. (Kubow, P.K., Wahlstrom, K.L., & Bemis, A.E. (1999). "Starting time and school life: Reflections from educators and students" Phi Delta Kappan, 80 (5), 366-371.)

2. Sleep gain for working students</td></tr>
<tr><td>Transition Requirements:</td><td>Student employment schedules will need to shift with the changes in bell schedules.</td></tr>
<tr><td>Majority & Minority Opinions:</td><td>Majority opinion: Changes in start times will not impact student employment because employers will accommodate bell changes with shifts in work schedules.

Minority opinion: Restricted after-school employment opportunities could disproportionately impact low-income families.</td></tr>
<tr><td>Other comments:</td><td>Data from 2004-2005 parent and student surveys at JEB Stuart High School, one of the most diverse in the county with a high percentage of low-income students, shows that under current bell schedules, working students average fewer hours of sleep on school nights than non- working students. Students working 20 or more hours per week average 37 minutes less sleep per school night than non-working students according to Adam Winsler, Ph.D., co-author of the study.</td></tr>
</table>

Other Models:	**Excerpt from Minnesota Start Time Study:** **Employers Report (N=15)** The overall impression that the employers, managers and human resource workers gave was that there would be **little or no impact** from a later school dismissal time. Four employers stated there would be an impact in the after-school work shifts, but when asked if a one hour later start time would have an impact, three said that one hour would not make much of an impact, that they "could deal with it" or that they are "flexible." Most of the employers said that their high school employees either do not start right after school or that they could "adjust the day workers" shifts to accommodate a later arrival of the students. **Fairfax County:** The 1998 Task Force interviewed local employers and concluded that later start and end times would **not interfere** with student work opportunities. They found that employers generally use student workers on weekends and evenings, schedules that would not conflict with later end times. (see pp 26-28) *Excerpt:* (1998 Task Force Report, pp 27-28): In a poll of fifteen Fairfax businesses employing high school students, they were unanimous in stating that the **later start time would not impact student work hours** and that they would continue to hire students. The following employers were contacted: 1. Baskin Robbins Ice Cream 2. Bath and Body 3. Blockbuster Video 4. Burger King 5. Friendly's 6. Giant Food Stores 7. K-Mart (Burke) 8. Kohls 9. Multiplex Movie 10. Penney's (Fair Oaks) 1 1. Safeway 12. Subway 13. Taco Bell 14. Target (Burke) 15. TCBY Also, most parents report that their children do not work out of need, but rather to pay for gas money, CDs, cigarettes and other niceties that the parents might not otherwise pay for. Dr. Carskadon substantiated this fact in her presentation to the Task Force when she stated that most students don't work to save for college or to supplement family income, they work to buy personal consumables. Also, students work at jobs that are usually unskilled, entry level positions. **Fairfax County:** Data from 2004-2005 parent and student surveys at JEB Stuart High School, one of the most diverse in the county, indicate that later school schedules will have **little impact on student jobs, parent work schedules** or child care arrangements.

- Of the 23 percent of Stuart students who work, the **average start time for work on a school day was 4:22 pm, more than two hours after the current school end time**. Students now start work as late as 9 pm on school days (with a later morning start time presumably being easier on students working so late in the evening).
- In the Stuart parent survey, **nearly 90 percent said that a later school day would not conflict with a job held by their student**. Most of the remainder said it would be easy for their students to change work hours to accommodate a later schedule.

Rhode Island Study: A cross-sectional survey of 1,528 female and 1,566 male public high school students in suburban and rural Rhode Island suggests that sleep behaviors may also be related to employment (Carskadon, Mancuso, & Rosekind, 1989). (The ethnic composition of the participants was not detailed in the study report.) In this study, adolescents who worked 20 or more hours per week (high-work students) tended to sleep less and to get to bed later on both weekdays and weekends than did adolescents who worked less than 20 hours or not at all (Carskadon, et al., 1989). The high-work students were also more likely to report being late to school because of oversleeping, and more often fell asleep during the day at school or while doing homework. High-work students also tended to consume more coffee and tea.

In general, researchers tend to consider adolescent sleep deprivation the result of a clash between an increased need for sleep and the variety of time constraints imposed by employment, activities, homework, social involvement, and early school start times (Dahl, 1998; Wolfson & Carskadon, 1998).

Carskadon, M.A., Mancuso, J. & Rosekind, M.R. (1989) Impact of Part-time Employment on Adolescent Sleep Patterns. Sleep Research 18, 114.

Additional CAREI Study Review:

"Participation in all after-school activities has remained the same, and those students who go to after-school jobs did not shorten the number of hours they work. In fact, students found they are less tired at their jobs than they were when they had to get up so much earlier. All in all, the shift to a later starting time has been a good decision. The "growing pains" for making the change are now all but disappeared, and the students, parents, teachers do not want to go back to anything earlier."

	"School Start Time and Teen Sleep," Kyla L Wahlstrom, High School Magazine. Reston: May 2000. Vol. 7, Iss 9; p 40
Conclusions:	A review of potential impacts within Fairfax County and from the other jurisdictions indicates that changes in start times have not had an impact on student employment. Current early bell schedules may be causing added hardship for high-work students (20 or more hrs/wk) who average 37 minutes **LESS** sleep per school night than students who aren't employed. Additional study is recommended to assess potential employment impacts for Fairfax County students.

Executive Summary 1.22.2008

<table>
<tr><td>Topic:</td><td>Student Health Impact</td></tr>
<tr><td>Description:</td><td>
Secondary Students: 72,000 enrolled in FCPS grades 7-12 plus Mason District Middle Schools include 6th grade (Glasgow, Poe, Holmes)

Elementary Students: 84,000 K-6th (minus 6th graders at Glasgow, Poe, and Holmes)

(enrollment approximate: based on 12,000/grade)

<table>
<tr><td></td><td>High School</td><td>Middle School</td><td>Elementary School</td></tr>
<tr><td>Best Option</td><td>3rd tier A, B,</td><td>3rd tier C, D,</td><td>1st/2nd tier A,C</td></tr>
<tr><td>Worst Option</td><td>1st tier current</td><td>1st tier E, current</td><td>Early 1st tier B, D
Late 3rd tier E</td></tr>
</table>
Based on health impact, Option A or C

FCPS Student Achievement Goals:
2.1. Demonstrate sound moral character and ethical judgment:
2.1.6. Protect others' health and safety.
2.8. Make healthy and safe life choices.

"Health and education go hand in hand; one cannot exist without the other. To believe any differently is to hamper progress. Just as our children have a right to receive the best education available, they have a right to be healthy. As parents, legislators, and educators, it is up to us to see this become a reality." (Former Surgeon General Antonia Novello, Healthy children ready to learn: An essential collaboration between health and education, 1992.)
</td></tr>
<tr><td>Potential Impact:</td><td>
• Improve teen health and quality of life.

• Decrease days absent due to illness. Decrease visits to doctors' offices. Decrease tardies due to oversleeping.

• Set a school schedule that more closely matches teen body clocks. Promote healthy sleep habits for life. Increase the amount of sleep teens get each school night. Protect the health and safety of our teen students and enable them to make healthy and safe life choices.

• Decrease daytime sleepiness, sleeping during class, and falling asleep during homework.

• Improve physical performance, including sports and driving.

• Decrease sleep debt which can impair metabolism and disrupt hormone levels.
</td></tr>
</table>

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	Evidence is growing that sleep is a powerful regulator of appetite, energy use, and weight control. Sleep loss has been linked to increased risk for diabetes. Shorter sleep duration is associated with increased risk for being overweight. • Increase the number of high school students who eat breakfast before school. • If tier 1 schools start too early, shifting more elementary students to tier 1 may have a negative impact on elementary student sleep and therefore, health. Pushing elementary schools into a later third tier may mean less outdoor playtime for elementary students in this tier. A and C move a greater number of elementary starts to the current earliest start of 7:50. This would have little impact on student health as it allows enough time for sleep. • May require a new breakfast distribution plan since breakfasts are prepared in high school kitchens and shipped to elementary schools.
Transition Requirements:	Re-organize the distribution of breakfasts to schools if needed.
Majority & Minority Opinions:	
Other Jurisdictions Report:	**ADDED SLEEP TIME:** **Minnesota:** Statistically significant increase in total sleep time. This is true in both suburban Edina and urban Minneapolis districts. **Wilton, Conn**.: High school students got **35 minutes more sleep** on average after 40-minute later start time change. **Fayette, Ky.:** Students in every grade from 6-12 averaged more sleep in the year after the change, up to 50 extra minutes in the 12th grade. The percent of high school students getting at least eight hours of sleep per night went from 21%-51%. **ATTENDANCE/TARDINESS:** **Minnesota**: Statistically significant improvement in attendance. Attendance improved for Black, Asian, Hispanic, and White students in grades 9-11. Tardies at three similar jurisdictions with different HS start times (8:30 am, 7:25 am and 7:15 am) were significantly lower due to oversleeping at the 8:30 am starting school. **Edina, Minn**: We have measured **fewer absences** and fewer students arriving late **Wilton, Conn.:** Did **not** see any change in attendance or tardiness. **Brevard County, Fla.:** Positive: **Significant amount of tardies and absences were reduced** from first periods **DECREASED DAYTIME SLEEPINESS, FALLING ASLEEP DURING CLASS/HOMEWORK, ETC.** **Minnesota:** The students whose high schools started at 8:30 a.m. or later reported statistically significant better scores on measures of daytime sleepiness, staying awake in class or while doing homework. Also fewer report feeling sleepy while taking a test. Actual scores were nearly identical for urban and suburban students despite the differences in their local economic conditions.

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	IMPROVED PHYSICAL PERFORMANCE/SAFETY: **Fayette, Ky:** While the statewide rate of car crashes increased 8% the rate in Fayette County decreased by over 15% during the two years after Fayette County shifted to later start times. Fayette was previously one of the counties with the highest crash rates. **SPORTS:** **Arlington**: Two-thirds of students had the **same or increased participation** in extracurriculars. School staff **able to accommodate extracurriculars**, able to minimize impact. **Wilton, Conn**.: Sports was a serious concern upfront, but fears proved to be unfounded. Wilton saw increased sports participation and one of its best sports seasons ever. **BREAKFAST:** **Minnesota:** students in Edina said they ate breakfast more (CAREI case study) **Fairfax:** The majority (61.1%) of students do not have enough time to eat breakfast before going to school. Only 39.9% of students eat breakfast before school every day. 89.1% of students report that they would eat breakfast if they had time or if it were available during a block of time at school. (Stuart survey) Some schools provide a breakfast break between 1st and 2nd block (e.g., Langley, Oakton) Some middle school students may not be allowed into the building to get breakfast before school (TTF anecdotes).
Conclusion:	Later middle and high school start times would provide a substantial health benefit for teen students. Options A and C provide these benefits without disadvantage to elementary school students.
Brief Sleep Overview:	Studies show that not getting enough sleep or getting poor quality sleep on a regular basis increases the risk of having high blood pressure, heart disease, and other medical conditions. In addition, during sleep, your body produces valuable hormones. Deep sleep triggers more release of growth hormone, which fuels growth in children, and helps build muscle mass and repair cells and tissues in children and adults. Another type of hormone that increases during sleep works to fight various infections. Hormones released during sleep also affect how the body uses energy. Studies find that the less people sleep, the more likely they are to be overweight or obese, to develop diabetes, and to prefer eating foods that are high in calories and carbohydrates." (http://www.nhlbi.nih.gov/health/public/sleep/healthysleepfs.pdf, p. 2) Sleep is necessary for good health.

Executive Summary 1.22.2008

<table>
<tr><td>Topic:</td><td>Student Mental Health</td></tr>
<tr><td>Description:</td><td>Secondary Students: 72,000 enrolled in FCPS grades 7-12. Mason District Middle Schools include 6th grade (Glasgow, Poe, Holmes)

Summary of options:
<table>
<tr><td></td><td>High School</td><td>Middle School</td><td>Elementary School</td></tr>
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<tr><td>Worst Option</td><td>1st tier
current</td><td>1st tier
E, current</td><td>Early 1st tier
B, D
Late 3rd tier
E</td></tr>
</table>
Based on mental health impact, Option A or C</td></tr>
<tr><td>Potential Impact:</td><td>Improve teen mental health, behavior, mood, and social interactions.

Decrease visits to the school counselor, the school psychologists, and to the office for disciplinary action.

Decrease depression, anxiety and other emotional problems.

Decrease risk-taking behaviors, ADHD symptoms, such as impulse control, irritability and ability to concentrate.</td></tr>
<tr><td>Transition Requirements:</td><td>None. May ease the burden on school counselors and psychologists.

Fairfax County:

2005 Youth Risk Survey shows 33.9% of Fairfax County 8th to 12th graders show classic signs of depression (“During the past 12 month felt so sad or hopeless almost every day for weeks or more in a row that they stopped doing some usual activities.”)

15% of 8th-12th graders (including 18.9% of females) had considered suicide</td></tr>
<tr><td>Majority & Minority Opinions:</td><td></td></tr>
<tr><td>Other comments:</td><td>1. “Unlike adults, children who don’t get enough sleep at night typically become more active than normal during the day. They also show difficulty paying attention and behaving properly. Consequently, they may be misdiagnosed as having attention deficit hyperactivity.” (p. 31 NIH: Your Guide to Healthy Sleep.)

2. A large survey of 12- to 15-year-old subjects showed correlations between sleep problems, rebelliousness, depressive symptoms, and cigarette smoking.” (Hansen, et.al, 2005, Pediatrics, p. 1555-1561)

3. Sleep also affects mood. Insufficient sleep can make you irritable and is linked to poor behavior and trouble with relationships, especially among children and teens. People</td></tr>
</table>

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	who chronically lack sleep are also more likely to become depressed. (National Institutes of Health: http://www.nhlbi.nih.gov/health/public/sleep/healthysleepfs.pdf, p.2)
Other Models:	**Minnesota:** Statistically significant improvement in depression measures. This is true in both suburban Edina and urban Minneapolis districts. **Minnesota:** Statistically significant increase in total sleep time. This is true in both suburban Edina and urban Minneapolis districts. **Minnesota:** High School Principals report the mood of the students in the hallways, during passing times, was now calmer. They also cited that calmness as being evident in their student cafeterias during lunch. **Minnesota:** School counselors and nurses reported significantly fewer students were coming to them to report peer relationship problems and/or difficulties with their parents. They echoed the principals' perceptions that the overall mood in their schools was calmer, with the students' temperaments seeming much more even. **Minnesota:** Both urban and suburban parents noted that their high school children were "easier to live with." They found that they were having fewer confrontations with their children in the morning about getting out of bed and getting to school on time. They also commented that they were having more actual conversations with their teenage children in the morning, finding that they had new "connection time" with their child.

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Sleep Research:	**Why do we need sleep?** From NIH: **http://www.ninds.nih.gov/disorders/brain_basics/understanding_sleep.htm#how_much** "Although scientists are still trying to learn exactly why people need sleep, animal studies show that **sleep is necessary for survival**. For example, while rats normally live for two to three years, those deprived of REM sleep survive only about 5 weeks on average, and rats deprived of all sleep stages live only about 3 weeks. Sleep-deprived rats also develop abnormally low body temperatures and sores on their tail and paws. The sores may develop because the rats' immune systems become impaired. Some studies suggest that sleep deprivation affects the immune system in detrimental ways. **Sleep appears necessary for our nervous systems to work properly**. Too little sleep leaves us drowsy and unable to concentrate the next day. It also **leads to impaired memory and physical performance and reduced ability to carry out math calculations.** If sleep deprivation continues, hallucinations and mood swings may develop. Some experts believe sleep gives neurons used while we are awake a chance to shut down and repair themselves. Without sleep, neurons may become so depleted in energy or so polluted with byproducts of normal cellular activities that they begin to malfunction. Sleep also may give the brain a chance to exercise important neuronal connections that might otherwise deteriorate from lack of activity. **Deep sleep coincides with the release of growth hormone in children and young adults. Many of the body's cells also show increased production and reduced breakdown of proteins during deep sleep.** Since proteins are the building blocks needed for cell growth and for repair of damage from factors like stress and ultraviolet rays, deep sleep may truly be "beauty sleep." **Activity in parts of the brain that control emotions, decision-making processes, and social interactions is drastically reduced during deep sleep, suggesting that this type of sleep may help people maintain optimal emotional and social functioning while they are awake.** A study in rats also showed that certain nerve-signaling patterns which the rats generated during the day were repeated during deep sleep. This pattern repetition may help encode memories and improve learning." **"REM sleep stimulates the brain regions used in learning**. This may be important for normal brain development during infancy, which would explain why infants spend much more time in REM sleep than adults (*see Sleep: A Dynamic Activity*). Like deep sleep, REM sleep is associated with increased production of proteins. **One study found that REM sleep affects learning of certain mental skills**. **People taught a skill and then deprived of non-REM sleep could recall what they had learned after sleeping, while people deprived of REM sleep could not."** From: http://www.helpguide.org/life/sleeping.htm "Sleep helps you to restore and rejuvenate many body functions: • **Memory and learning** – Sleep seems to organize memories, as well as help you to recover memories. After you learn something new, sleep may solidify the learning in your brain. • **Mood enhancement and social behaviors** - The parts of the brain that control emotions, decision-making, and social interactions slow down dramatically during sleep, allowing

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	optimal performance when awake. REM sleep seems especially important for a good mood during the day. Tired people are often cranky and easily frustrated. • **Nervous system** – Some sleep experts suggest that neurons used during the day repair themselves during sleep. When we experience sleep deprivation, neurons are unable to perform effectively, and the nervous system is impaired. • **Immune system** – Without adequate sleep, the immune system becomes weak, and the body becomes more vulnerable to infection and disease. • **Growth and development** – Growth hormones are released during sleep, and sleep is vital to proper physical and mental development. The effects of sleep deprivation can be felt both physically and mentally. These may include: • Poor decision-making, poor judgment, increased risk-taking • Poor performance in school, on the job, and in sports • Impaired driving performance and more car accidents • Increased incidence of obesity, diabetes, illness in general, high blood pressure, and heart disease • Impaired memory, concentration, and ability to learn • Physical impairment, poor coordination, delayed reaction time • Anxiety, depression, and other emotional problems • Magnification of the effects of alcohol on the body • Exacerbation of the symptoms of ADHD, such as impulse control, irritability, and lack of concentration"
Children and Sleep	**How do sleep needs change as students move through our school system?** "Sleep needs … change throughout the lifecycle. Newborns sleep between 16 and 18 hours a day, and children in preschool sleep between 10 and 12 hours a day. Schoolaged children and adolescents need at least 9 hours of sleep a night. The hormonal influences of puberty tend to shift adolescents' biological clocks. As a result, teenagers are more likely to go to bed later than younger children and adults, and they tend to want to sleep later in the morning. This sleep–wake rhythm is contrary to the early-morning start times of many high schools and helps explain why most teenagers get an average of only 7–7.5 hours of sleep a night." 1, p19 Your Guide to Healthy Sleep, by the U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, National Institutes of Health. **"Myth 9: Children who don't get enough sleep at night will show signs of sleepiness during the day.** Unlike adults, children who don't get enough sleep at night typically become more active than normal during the day. They also show difficulty paying attention and behaving properly. Consequently, they may be misdiagnosed as having attention deficit hyperactivity. (p. 31 NIH: Your Guide to Healthy Sleep.)

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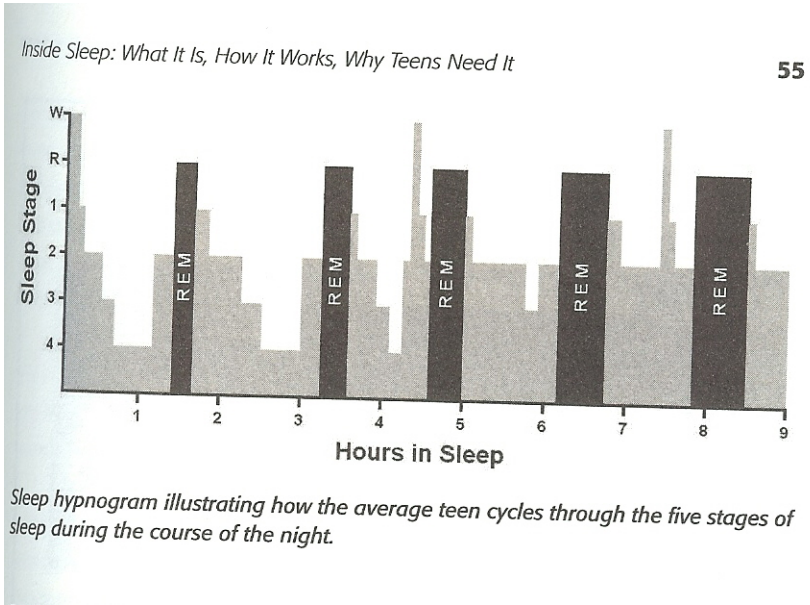
Teens and Sleep	Teen sleep needs and patterns differ from those of younger children and adults. Understanding the differences is important in our deliberations about the bell schedule options. Basic Teen Sleep Information: ▪ Teens NEED about 9 hours of sleep per night. Most teens average 7.5 hours (with ¼ sleeping 6.5 hours or less)—(based on National data—local survey showed an average of less than 7 hours). ▪ To get the requisite 9.25 hours of sleep needed, teens who must get up at 6 a.m. should be in bed and asleep by 8:45! (And, remember, some of the buses are coming before 6 a.m., so . . . .) ▪ Because the teen body clock shifts to a later sleep cycle, 8:45 p.m. is often physically IMPOSSIBLE for teenagers. The hormone, melatonin, that makes people feel sleepy, peaks at a later time in the teen body and stays in their system until later in the morning—about 8 a.m. The tendency to be an early bird or a night owl is genetic, so there is a range of 'normal', but even the body clocks of early birds tend to shift later during adolescence. This 'phase' shift lasts throughout puberty. Teen bodies and brains are still developing. They are NOT the same as adults. They cannot function well on the same amount of sleep as adults do nor should we expect them to. ▪ Teens with later start times do sleep more hours each night. Studies show that teens maintain similar bedtimes before and after a shift in high school start times, so later start times equate with more sleep for teens. REM Sleep  *Sleep hypnogram illustrating how the average teen cycles through the five stages of sleep during the course of the night.* (from: *Snooze or Lose*, 2006, Dr. Helene Emsellem) The average teen cycles through the 5 stages of sleep during the course of a night. Note: This is for a whole night of uninterrupted sleep—9 hours. If a teen goes to sleep at 11 p.m. and wakes up at 6 a.m. for school, we have interrupted their natural sleep cycle at about 7 hours—(average in SLEEP's survey was 10:51 p.m.). This eliminates one of the longest periods of REM sleep.

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	REM sleep is non-negotiable. During REM, the psyche is restored, and recent evidence shows that REM sleep is also involved in the processing of information. REM sleep is also crucial for the anabolic, or energy building and healing, activities that take place in the brain and in the body. If you miss enough of it, your body tries to catch up by taking "micronaps" (or microsleeps) in the middle of the day—these very brief stretches of sleep may interrupt our consciousness in the middle of algebra or while we drive down the street. (*Snooze or Lose*, 2006, Dr. Helene Emsellem) *Contributed by TTF member, Phyllis Payne, MPH:*

BEDTIMES THAT WOULD PROMOTE ENOUGH SLEEP w/ each scenario
(used ***worst case*** transit and ***best case*** prep time; 20 min. arrival for HS and ES).

	BEDTIME ***(15 minutes to fall asleep)***	WAKE TIME	Bus pick-up (worst case transit time: HS/MS=60 minutes) In-boundary	Arrival Time HS/MS: 10-25 minutes for MS/HS	**START TIME**
Teen Body Clock (9 hours)	**11:00 pm**	**8:00 am**	**8:30 am**	**9:30 a.m.**	**9:50 a.m.**
current	**8:15 p.m.**	5:30 am	6:00 a.m.	7:00 a.m.	**7:20 a.m.**
MS Option E	**8:25 p.m.**	5:40 am	6:10 a.m.	7:10 a.m.	**7:30 a.m.**
HS Option A MS Option C	**10:15 p.m.**	7:30 am	8:00 a.m.	9:00 a.m.	**9:20 a.m.**
HS Option B MS Option D	**9:55 p.m.**	7:10 am	7:40 a.m.	8:40 a.m.	**9:00 a.m.**
HS Option C MS Option A	**9:30 p.m.**	6:45 am	7:15 a.m.	8:15 a.m.	**8:35 a.m.**
HS Option D,E MS Option B	**9:10 p.m.**	6:25 am	6:55 a.m.	7:55 a.m.	**8:15 a.m.**
Elementary (need 9 or 10 hours)			transit ES=45 min.	Arrival ES: 5-25 minutes Used 20 minutes	
8:30 bedtime and 10 hours	**8:30 p.m.**	6:30 am	7:00	7:45	**8:05 a.m.**
Options B, D, (small # E)	**7:55-8:55 p.m.**	5:55 am	6:25 a.m.**	7:10 a.m.	**7:30 a.m.**
Options A, C (*current)*	**8:15-9:15 pm**	6:15 am	6:45 a.m.	7:30	**7:50 a.m.**

**civil twilight?? Will 7:30 be possible for enough schools?

Sleep and Health, Metabolism, and Hormone Levels	"The combination of delayed circadian sleep phase and early start times at high schools in the United States causes adolescents to lose sleep during the school week. Chronic partial sleep loss has negative effects on neurocognitive performance, mood, and health. A large survey of 12- to 15-year-old subjects showed correlations between sleep problems, rebelliousness, depressive symptoms, and cigarette smoking." (Hansen, et.al, 2005, Pediatrics, p. 1555-1561) **Minnesota:** Correlations were found between sleep deprivation and: ▪ deficits in information processing and memory,

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	▪ increased irritability, ▪ anxiety, ▪ depression, ▪ hyper-sexuality, ▪ decreased creativity, ▪ poor ability to handle complex tasks, ▪ increased potential for drug and alcohol use, and ▪ vulnerability for accidents. ▪ Sleep lag syndrome correlates with poorer grades. (Patricia Velkoff's TTF summary--Kyla Wahlstrom, Ph.D., Center for Applied Research and Educational Improvement (CAREI), University of Minnesota (1998 & 2001) **How does sleep affect metabolism and hormone levels?** "Evidence is growing that sleep is a powerful regulator of appetite, energy use, and weight control. During sleep, the body's production of the appetite suppressor *leptin* increases, and the appetite stimulant *grehlin* decreases. Studies find that the less people sleep, the more likely they are to be overweight or obese and prefer eating foods that are higher in calories and carbohydrates. People who report an average total sleep time of 5 hours a night, for example, are much more likely to become obese compared to people who sleep 7–8 hours a night. A number of hormones released during sleep also control the body's use of energy. A distinct rise and fall of blood sugar levels during sleep appears to be linked to sleep stage. Not getting enough sleep overall or enough of each stage of sleep disrupts this pattern. One study found that, when healthy young men slept only 4 hours a night for 6 nights in a row, their insulin and blood sugar levels mimicked those seen in people who were developing diabetes. Another study found that women who slept *less than 7 hours* a night were more likely to develop diabetes over time than those who slept between 7 and 8 hours a night." (NIH: http://www.nhlbi.nih.gov/health/public/sleep/healthy_sleep.pdf, p. 21)
Sleep and Performance	**FCPS:** On the FCPS Athletic Programs: Health Information Page http://www.fcps.edu/supt/activities/athletics/health.htm **Sleep (*and athletes)*** Athletes are putting extra demands on their bodies and need adequate time to recover from a demanding schedule of school and sports training. A good night's sleep is essential for an athlete to succeed. Managing time is essential for success, in the classroom and in the sports world. http://www.fcps.edu/DIS/gt/faqsprocess.htm **FCPS:** From the Gifted and Talented Frequently Asked Questions page: Question: How can I prepare my child to take the tests? Can I see sample questions or practice sheets? Answer: Sample questions are practiced by students as part of the test preparation. Sample tests are not commercially available. The best test preparation is a good night's sleep and a healthy breakfast. http://pn.psychiatryonline.org/cgi/content/full/40/16/21

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Hans Van Dongen, Ph.D., and David Dinges, Ph.D., of the University of Pennsylvania, described studies assessing psychomotor vigilance performance after sleep deprivation. This skill involves reaction time and sustained attention. It is needed for not only sports performance but also everyday activities such as driving. It is highly sensitive to sleep loss, often experienced by athletes on road trips, particularly after they cross multiple time zones.

`Sleep Debt' Snowballs

Chronic sleep restriction, widespread among American adults, has serious adverse consequences for physical and mental performance, asserted sleep researcher William Dement, M.D., Ph.D., a professor of psychiatry at Stanford University. The most important aspect of the body's homeostatic regulation of sleep, he said, is that sleep loss is cumulative. "When total nightly sleep is reduced by exactly the same amount each night for several consecutive nights," he reported, "the tendency to fall asleep in the daytime becomes progressively stronger each day."

Dement calls this phenomenon "sleep debt." As he explains, the brain records as a debt every hour of sleep that is less than a person's nightly requirement. This snowballing debt may include an hour of sleep lost a week or month ago, as well as the hour lost last night, he speculated. A large sleep debt can be reduced only by extra sleep.

In a landmark 1994 National Institute of Mental Health study, subjects stayed in bed in the dark 14 hours every night for 28 consecutive nights. At first, they slept as long as 12 hours a night, suggesting they entered the study with sizeable sleep debts, Dement said. By the fourth week, their sleep stabilized at a nightly average of eight hours and 15 minutes—a figure interpreted to mean that most adults need this amount of sleep each night.

Does `Secret' Advantage Accrue?

When subjects slept until "slept out," their mood, energy level, and sense of well-being as indicated on daily questionnaires all improved. Athletes who obtain all the sleep they need, Dement suggested, might have a "secret" advantage over their competition.

The adage "practice makes perfect," long a truism of athletic training, has been modified by sleep and chronobiology studies in the past decade, according to Matthew Walker, Ph.D., and Robert Stickgold, Ph.D., of Harvard Medical School. After initial training, the human brain continues to learn in the absence of further practice, they said. The improvement develops in sleep.

These findings have a direct application to athletes' training schedules, they asserted. Athletes who train consistently across the day and then cut short their sleep to get up early the next morning for practice might shortchange their

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	brains of sleep-dependent consolidation and plasticity. http://www.sciencedaily.com/releases/2005/05/050511072041.htm Lack of sleep doesn't just affect athletics in teenagers. Studies repeatedly show that reaction time, vigilance, learning and alertness are impaired by insufficient sleep; so students with short nights and irregular sleep patterns perform poorly in school and in other aspects of their life and have a tendency for a depressed mood.

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Executive Summary

Topic:	**Safety Impact**
Description:	72,000 Secondary Students enrolled in FCPS grades 7-12 includes Mason District Middle Schools include 6th grade Glasgow, Poe, Holmes) 84,000 Elementary Students K-6th , minus 6th graders at Glasgow, Poe, and Holmes) (enrollment approximate: based on 12,000/grade) **SAFETY IMPACT SUMMARY**

	High School	Middle School	Elementary School
Better Scenario	2nd/3rd tier A, B, C, D, E	3rd tier C, D,	Late 1st tier A,C or 2nd/3rd tier
Worse Scenario	1st tier *Current*	1st tier E, *current*	Early 1st tier B, D, E

Potential Impacts:

The potential impacts of safety issues and school bell schedules include the following:

1. Car accidents
   - The number 1 killer of teens
   - Drowsy driving is a major contributing factor

2. Crime and Gang Activity during unsupervised hours after school
   - Later HS and MS start times mean reduced opportunity for youth crime victimization & juvenile crime including gang-related crime, all of which peak during after-school hours
   - These problems will not shift to before-school hours

3. Students walking to or from school or arriving at bus stops in the dark

FCPS Student Achievement Goals:

2.1. Demonstrate sound moral character and ethical judgment:
   2.1.6. Protect others' health and safety.
2.8. Make healthy and safe life choices.

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Executive Summary

Transition Requirements:	Civil twilight parameters as voted on by the TTF need to be followed during implementation. The safety of Elementary Students is dependent on enforcing the limits (earliest pickup of 7:00AM for base school and special education students) recommended by the Task Force.
Majority and Minority Opinions:	
TTF Student Representative Comments:	■ Do not want to compromise the safety of elementary students. ■ More sleep would have a positive impact on health, safety and learning—too tired to drive some mornings, but has to anyway. ■ Chantilly has started late (on Fridays) for the past 2 years now. During the early stages last year (first 3 quarters), there was a large problem with traffic. The neighboring middle school starts at the same time as Chantilly does on Friday resulting in massive amounts of traffic. The **solution** was community outreach. The high school and middle school worked together, along with the parents, to devise a plan to lower the traveling time. Shifting lanes and changing traffic patterns had an immediate effect, and there is no longer an issue.
Conclusion:	Recommend: Option C Based on safety, A and C are better for elementary students. C and D do the most to reduce unsupervised time for middle school students in the afternoon. All options improve driving safety for high school students by reducing drowsy driving and increasing their driving during daylight hours.

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Potential Impacts:	**The major issues with safety and school bell schedules include the following:** ■ Car accidents ■ Crime and Gang Activity during unsupervised hours after school ■ Students walking to or from school or arriving at bus stops in the dark
	Car Accidents Driving accident rates are a key component of the safety factor because a high percentage of Fairfax County high school students drive to school each day. In conversations with parents, a high percentage expressed their concern about their children driving to school, especially in the winter when it is still dark and roads can be hazardous.
Car Accident Research	**What research is there about student driving accidents and safety?** Car crashes are the No. 1 killer of teens, according to the National Highway Traffic Safety Administration (NHTSA). ■ Experts attribute the high rate of car crashes to many factors, including inexperience, speed, risk-taking, use of drugs and alcohol, **as well as drowsy driving.** ■ According to the U.S. Department of Transportation National Highway Traffic Safety Administration, there were 269 reported deaths in 1996 for drivers between the ages of 15 to 19 in which the factors of drowsiness, sleepiness, asleep at the wheel or fatigue were involved. The Arlington Advisory Council on Instruction Research Report included information that the worst time for these incidents is early in the morning. The 1998 FCPS Task Force, included the following information about student driving in their report: ▪ "A higher risk of morbidity and mortality is associated with chronic sleep deprivation in that most common of adolescent preoccupations - driving. In a study of driving behavior, Dr. David Brown, Director of the Center of Sleep Evaluation at Optima Health in Manchester, NH reported that 17percent of 166 high school drivers reported having fallen asleep at the wheel at least once. Some 64 percent of students surveyed believed that sleep deprivation worsened their school performance, but only 35 percent felt that sleep deprivation impaired their ability to drive. This is a potentially life threatening misconception according to Dr. Brown. It may not be until a student experiences a close call or accident that the danger of sleepiness will be appreciated.

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Car accident research (cont)	■ In the study, "Characteristics of Crashes Attributed To The Driver Having Fallen Asleep," 55 percent of these accidents were with drivers 25 years of age or younger, and the peak age was 20 years old. There were almost an equal number of accidents for those 18 and 19 years of age. The study notes that the **"high rate of fall-asleep crashes in young drivers is probably the result of them being excessively sleepy due to sleep deprivation secondary to lifestyle."** The study goes on to note that **sleepiness in the driver, even if the driver does not fall asleep, "degrades performance with reduced vigilance, slowed reaction times and attention deficits."** The result is that there may be even more accidents where sleepiness has played a role than the actual number of fall-asleep crashes. This study was conducted in the state of North Carolina where police officers note the physical condition of the driver in an accident report. The codes include "fatigued" and "asleep" (Pack et.al., 1994). 1998 Task Force, pp 24-26): Other studies show the following: ■ More than half (55%) of all asleep-at-the-wheel car crashes involve drivers 25 and younger, according to a North Carolina study. ■ A National Sleep Foundation 2006 poll of teens found that 51 percent said they have driven drowsy in the past year, and 15 percent at least once a week. (This rose to 68 percent and 20 percent, respectively, by 12th grade.) In addition, **9 percent of 12th-graders said they have actually fallen asleep at the wheel** in the past year. ■ According to a 2007 **Children's Hospital of Philadelphia/State Farm study** of teen driving habits, based on a survey of 5,665 students: Taking the wheel without having enough sleep is not often considered to be as much of a risk as driving after drinking. However, the consequences are certainly as great for teens, who are often challenged by academic pressures, multiple extracurricular activities and early school start times. The majority of drowsy driving-related crashes are caused by drivers who are younger than 25 years. ■ RISKY DRIVING BEHAVIORS – Although only half of teens report seeing drunk driving by teen drivers at least sometimes, **three-fourths of respondents report seeing fatigued driving by teens**. http://stokes.chop.edu/programs/injury/files/PCPS_Reports/1289teen.pdf ■ According to the NHTSA expert panel on Driver Fatigue and Sleepiness "Young people, and males in particular, were the most likely to be involved in fall asleep crashes" (Pack et al, 1995). The same study reported sleepiness-related crashes are most common in drivers age 16 to 25. ■ "Fall asleep crashes may kill more young Americans than alcohol related crashes."(Mark Mahowald, M.D. in the quarterly *Sleep Medicine Alert*, Summer 1999, published by the National Sleep Foundation.)

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	■ The National Highway Traffic Safety Administration, for example, drowsiness and fatigue cause more than 100,000 traffic accidents each year--and young drivers are at the wheel in more than half of these crashes.
Car Accidents Other Jurisdictions	**Were other jurisdictions concerned about student accident rates?** **Minnesota**: One reason cited for switching to later start times was to lower risk of teen auto accidents. **Have other jurisdictions studied crash rates after shifting to later high school bell schedules?** **Fayette, Ky:** This study also looked at the rate of traffic accidents in the school system before and after the change to a later start. While the statewide rate of crashes increased 8% over the two years after the change, Fayette County, which was previously one of the counties with the highest crash rates**, reduced its crashes by over 15%.** See the following summary from study accepted for publication in Adolescent and Family Health (courtesy of Dr. Fred Danner, U. of Ky.): ■ Moving the school start time one hour later for all of the adolescents in one large county school district (the only county to do so during the period of this study) resulted in meaningful increases in sleep time, an increase in the percentage of students who got an adequate amount of sleep (8-9 hours cf., Carskadon, 1999) and a decrease in catch-up sleep on weekends. It was also **associated with a significant drop in auto collision rates for high school aged drivers** in that county, while crash rates increased in the rest of the state during the same time period. These findings are not necessarily causal since they are not the result of a direct assessment of the sleep habits of drivers who did and did not have accidents. **However, these data are consistent with the idea that allowing adolescents to sleep more on school nights by delaying the start of school not only results in them sleeping more but also may have a measurable positive effect on their driving safety.** *Fred Danner, Ph.D, Department of Educational and Counseling Psychology, 243 Dickey Hall, University of Kentucky, Lexington, KY, 40506. USA; Barbara Phillips, M.D, Department of Internal Medicine, MN618 Medical Science Building, University of Kentucky, Lexington, KY, 40506. USA.*

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	Juvenile Crime The peak time for both juvenile crime and victimization are the afternoon hours after school.
Juvenile Crime Research	A 2006 report from the U.S. Department of Justice Office of Juvenile Justice and Delinquency Prevention shows that **both juvenile violent crime and juvenile victimization peak in the afternoon hours after school.** Concludes there is more potential to filling 3-7 pm time than in juvenile curfews (go to beginning of Chapter 3). http://www.ojjdp.ncjrs.gov/ojstatbb/nr2006/downloads/chapter3.pdf http://www.ojjdp.ncjrs.gov/ojstatbb/nr2006/index.html In the 1999 National Report Series *Juvenile Justice Bulletin entitled* Violence After School the hours after school are identified as critical: http://www.ncjrs.gov/pdffiles1/ojjdp/178992.pdf (located through www.fcps.edu/HerndonHS/Coalition/ResourceCenter.htm and http://www.iir.nygc/publicatons.htm) ■ "The real problem area is not the school itself but the world our children return to after the dismissal bell rings. In today's society, fewer and fewer children have a parent waiting for them at home when school lets out. As a result, youth often supervise themselves and younger siblings after school with varying degrees of oversight by parents and guardians. Most juveniles are responsibly engaged in an array of positive activities, such as sports, clubs, or homework, or they "hang out" harmlessly with friends. However, for youth who have few activities available, whose friends are prone to negative behavior, or who experience other risk factors, the unsupervised hours between school and dinnertime offer ample opportunity to go astray. **Statistics show that serious violent crime committed by juveniles peaks in the hours immediately after the close of school.p.1** ■ At the same time, we should not fail to recognize that during these afterschool hours, juveniles are most likely to become victims of crime, including violent crimes such as robberies and aggravated assaults. In this unsupervised time, youth are more vulnerable and more likely to be exploited, injured, and even killed.p.1 ■ Youth also are at much greater risk of crime victimization in the hours immediately following school dismissal. Youth victimization of violent crimes (murder, assualt, robbery, rape, sexual abuse) increases dramatically at 3:00 pm, and nearly half of all violent crime against youth occurs between 3:00 pm and 8:00 pm on school days. Office of Juvenile Justice and Delinquency Prevention, Juvenile Offenders and Victims: A National Report. Washington, D.C.: U.S. Department of Justice, 1995. ■ Therefore, the rate of juvenile violence in the afterschool period is four times the rate in the juvenile curfew period. This analysis suggests that the potential for reducing a community's juvenile violent crime rate is greater for efforts to reduce juvenile crime after school than for juvenile curfews.p3 Baltimore saw a 44% drop in youth victimization by violent crimes after opening after school programs in a high crime area. Juvenile arrests dropped 10% and the number of armed robberies dropped in half. Baltimore Police Department Division of Planning and Research, Juvenile Victimizations Comparison for Goodnow PAL Center Area. Baltimore, MD: Baltimore Police Athletic League, 1998.

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Juvenile Crime Other Jurisdictions	**What is the experience of other jurisdictions which switched to later start times?** **Arlington** (from Advisory Council on Instruction report) ■ The opportunity that **early dismissal present for anti-social, criminal and high-**risk behavior has also been cited as a concern. According to Arlington County Deputy Police chief John Haas, "We would love to see down time between high school dismissal time and the start time for extracurricular activities eliminated entirely, thus eliminating opportunities for mischief and criminal activity. **Minnesota:** ■ found fewer referrals for disciplinary action at schools ■ Minnesota stated the following in Consequences of Unmet Sleep Needs (from Final Report Summary): Risks for adolescents lacking sleep include daytime sleepiness, **vulnerability to catastrophic accidents** (echoed by Dr. Mark Mahowald, director of the Minnesota Regional Sleep Disorders Center at Hennepin County Medical Center in Minneapolis), mood and behavior problems, **increased vulnerability to drugs and alcohol**, and development of major sleep disorders (Carskadon, 1990).
	Gang Activity Students are vulnerable to gang violence and recruitment during unsupervised hours after school.
Gang Activity Research	The Fairfax County Coordinating Council on Gang prevention lists the following as one of its five major areas of focus: "Bridging the gap – Identifying and coordinating after-school services for youth, a prime recruitment time for gangs." http://www.co.fairfax.va.us/gangprevention/council/ The Virginia Gang Investigators Associations website Tips for Parents indicates "the early adolescent years (12-14 years of age) are a crucial time when youths are exposed to joining a gang." http://www.vgia.org/Tips for Parents.pdf ■ **Nearly 60% of all youth gang-related crime occurs on school days and almost all of that in the hours immediately after school dismissal. The hour between 3:00 pm and 4:00 pm is the worst for gang crime and violence.** H. Snyder and M. Sickmund, Juvenile Offenders and Victims: 1997 Update on Violence. Washington, D.C.: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention, 1997.

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	Civil Twilight It is only logical that students are safer if they are not walking to school or waiting at the bus stop in the dark. Civil twilight has been adopted as a reasonable definition for determining whether it is too dark for students to be walking to school. The term is not used in any FCPS regulations or policies, but is one that is defined by the US Naval Observatory as follows: ■ **Twilight**: Before sunrise and again after sunset there are intervals of time, twilight, during which there is natural light provided by the upper atmosphere, which does receive direct sunlight and reflects part of it toward the Earth's surface. Some outdoor activities may be conducted without artificial illumination during these intervals, and it is useful to have some means to set limits beyond which a certain activity should be assisted by artificial lighting. ■ **Civil Twilight** is defined to begin in the morning, and to end in the evening when the center of the Sun is geometrically 6 degrees below the horizon. This is the limit at which twilight illumination is sufficient, under good weather conditions, for terrestrial objects to be clearly distinguished; at the beginning of morning civil twilight, or end of evening civil twilight, the horizon is clearly defined and the brightest stars are visible under good atmospheric conditions in the absence of moonlight or other illumination. In the morning before the beginning of civil twilight and in the evening after the end of civil twilight, artificial illumination is normally required to carry on ordinary outdoor activities. Complete darkness, however, ends sometime prior to the beginning of morning civil twilight and begins sometime after the end of evening civil twilight. http://aa.usno.navy.mil/faq/docs/RST_defs.php#top ■ The latest morning civil twilight for Fairfax County is approximately 7:10am ■ The earliest evening civil twilight for Fairfax County is approximately 5:17pm
Civil Twilight and The Current Bell Schedule	**In order to assess the impact of the proposed bell schedule changes, one needs to understand the current bell schedule's impact on students traveling to school in the dark.** ■ Based on current start time information, all high schools have a start time of 7:20-7:30am, except for TJHSST. With travel times of up to 1 hour and buses arriving by 7:00am at most of these schools, many students are leaving home at 6:00am, which is before civil twilight for 142 of the 183 school days. ■ Currently, middle schools have more staggered start times. Only 5 middle schools have start times of 7:20 with only 2 schools having buses arrive beginning at or before 7:00am. With a median bus arrival time of 7:25, students with a travel time to school of one hour are leaving home at 6:25, which is before civil twilight for 106 of the 183 school days. ■ Based on the Counts by AM pick up time, over 1,008 bus routes violate civil twilight to some extent. If each of those buses routes carries 25 students, over 25,200 students ride buses that violate civil twilight. Of these, 35 are elementary school routes carrying 875 students.

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	■ Based on the Counts by PM drop off time, assuming the times in the chart are the last drop off, the 53 buses in the 5:15pm+ column are in jeopardy of violating evening civil twilight. The majority of these buses are TJ (48), 4 are from other high schools and 1 from an elementary school.
Civil Twilight and Later Start Times Comments	**Do any of the scenarios increase the number of elementary school students going to and from school in the dark?** By establishing parameters for civil twilight, the TTF has given the transportation department guidelines that avoid civil twilight violations for base school students. The TTF has voted that no elementary students will be picked up before 7am to avoid violating civil twilight except for approximately 11 days per school year. These parameters become a driver of the cost of the various options. The number of civil twilight violations is fixed and is no longer a variable to consider for impacts. When Linda Farbry provided cost data for the TTF at the 1/8/08 meeting, the costs were driven in part by the expected number of buses that were needed to avoid civil twilight violations except as allowed by the TTF's votes on parameters (no pick ups before 7am for base school elementary students). She reported the highest costs for the 7:30AM start times in options B, D, and E, which placed some elementary schools in the first tier with these early start times.

SOURCES:

- Fairfax County Public Schools, Transportation Task Force 2007/2008, website http://www.fcps.edu/fts/taskforce07/documents/index.htm
  - Arlington Advisory Council on Instruction, Research Report
  - 1998 FCPS Task Force Report, pp 24-26.
  - Counts by AM pick up time
  - Counts by PM drop off time

- Dr. Jane Stutts, Principal Investigator, The University of North Carolina Highway Safety Research Center, Drowsy Driving Crash Study. CB# 3430, Chapel Hill, NC 27599, Phone: 919-962-2202 or (in NC) 800-672-4527 Fax: 919-962-8710. http://www.hsrc.unc.edu/news_room/1999-12-21_drowsy_driving_crash_study.cfm

- National Sleep Foundation, 2006 Sleep in America Poll. http://www.sleepfoundation.org/site/c.huIXKjM0IxF/b.2419167/k.14D6/2006_Sleep_in_America_Poll.htm

Research and Information for Student Safety Impact Report

SOURCES: (cont)

- Children's Hospital of Philadelphia and State Farm, the Center for Injury Research and Prevention. Driving: Through the Eyes of Teens. 2007. http://stokes.chop.edu/programs/injury/files/PCPS_Reports/1289teen.pdf

- National Highway Traffic Safety Administration (NHTSA). Expert panel on Driver Fatigue and Sleepiness, (Pack et al, 1995).

- Mark Mahowald, M.D., Sleep Medicine Alert, Summer 1999, published by the National Sleep Foundation.

- Fred Danner, Ph.D, Department of Educational and Counseling Psychology, 243 Dickey Hall, University of Kentucky, Lexington, KY, 40506. USA; Barbara Phillips, M.D, Department of Internal Medicine, MN618 Medical Science Building, University of Kentucky, Lexington, KY, 40506. USA. study accepted for publication in Adolescent and Family Health

- U.S. Department of Justice Office of Juvenile Justice and Delinquency Prevention, 2006 report, Chapter 3. http://www.ojjdp.ncjrs.gov/ojstatbb/nr2006/downloads/chapter3.pdf http://www.ojjdp.ncjrs.gov/ojstatbb/nr2006/index.html

- H. Snyder and M. Sickmund, Juvenile Offenders and Victims: 1997 Update on Violence. Washington, D.C.: U.S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention, 1997.

- Juvenile Offenders and Victims: A National Report. Washington, D.C.: U.S. Department of Justice, 1995.

- National Report Series Juvenile Justice Bulletin, Violence After School, 1999. http://www.ncjrs.gov/pdffiles1/ojjdp/178992.pdf (located through www.fcps.edu/HerndonHS/Coalition/ResourceCenter.htm and http://www.iir.nygc/publicatons.htm)

- Baltimore Police Department Division of Planning and Research, Juvenile Victimizations Comparison for Goodnow PAL Center Area, Baltimore, MD: Baltimore Police Athletic League, 1998.

- Fairfax County Coordinating Council on Gang Prevention. http://www.co.fairfax.va.us/gangprevention/council/

- Virginia Gang Investigators Associations, Tips for Parents, http://www.vgia.org/Tips for Parents.pdf

- US Naval Observatory, "Rise, Set, and Twilight Definitions", http://aa.usno.navy.mil/faq/docs/RST_defs.php#top, February, 2008.

Appendix Q

Non-Parameter Service Recommendations

Recognizing that traffic congestion has, and will increasingly have, a negative affect on the FCPS Transportation Department's (TD) ability to deliver service, the TTF Tweak Committee made the following non-parameter recommendations. The Task Force as a whole believes the School Board should review each and seriously consider them.

Consortia

The FCPS should continue and, preferably accelerate, the process of decentralization and diffusion of special courses and programs, as well as the use of electronic instruction, so all students have opportunities available in either base schools or close locations. By "all students," the TTF means that this should extend to high, middle, and elementary schools so each Cluster/Pyramid is self-contained. The goal is to reduce the number and length of bus rides to reduce bus costs, better preserve communities, and enhance instruction.

Alternative Transportation Methods

FCPS should link transportation alternatives with the Fairfax County government's 20-year environmental plan or "cool counties initiative". FCPS should make a long term commitment to change attitudes by developing a partnership with the PTAs to encourage alternatives to school buses and Kiss-and-Ride, such as "Way to Go" in Richmond, BC, Canada and "Safe Routes to School" in Arlington, County, VA. Alternatives should include "safe walking" to school, riding bicycles, and more. The community can and should be educated in these and other areas. Some suggested sources are on the TTF webs site. FCPS also should survey students on why they travel to school the way they do and what alternative methods they would consider taking.

Thomas Jefferson High School for Science and Technology (TJ)

TD should have one route supervisor whose duties include all of TJ, rather than spreading this one school over several people. Allow students to select their bus stops or centralized pick-up points. TD should work with TJ students, staff, and PTA in developing routes, including busing TJ students on buses carrying middle and elementary school students, and using modes of public transportation.

Efficiencies

TD should consider decentralizing fleet mid-management. This concept has merit and should be examined. TD should ensure, to the extent possible, that overnight bus parking is convenient to the drivers. TD should develop centralized fleet dispatching and invest in communications technology that maximizes flexibility in daily utilization of the bus fleet. TD should continue to develop its analytical capacity to utilize the computer to determine bus routes and stops to maximize the optimization of the transportation system and identify problems/issues that adversely affect optimization.

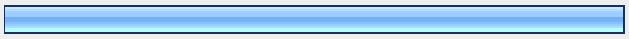
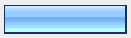
Final Recommended Bell Schedule			Option C versus Option D				Option C versus No Change			Appendix R
Recorded Votes		2/5/08	Vote #1				VOTE #2			
# mtgs/10 possible	Last Name	First Name	C	D	Abstain		C	No Change	Abstain	
9	Ackerman	Rona	X				X			
7	Aste	Mahri	X				X			
9	Auerbach	Jan	X				X			
10	Baker	Laurie	X				X			
8	Berlin	John		X				X		
5	Bosley	Mary Ann								
9	Campo	Ken			X				X	
7	Carlson	Walt	X				X			
9	Carroll	Robin	X				X			
10	Clancy	Mike								
6	Cox	Stephanie								
8	Cryan	Roger	X				X			
5	Culin/Minnich	Susan/Pat								
6	Dumont	Rhonda			X				X	
10	Emery	Mark			X				X	
9	Evans	Sandy	X				X			
8	Floyd	Laura			X			X		
5	Gillette	Kathye			X				X	
8	Harbeck	Judy		X					X	
7	Hecht	Jill	X				X			
9	Jakulski	Jill	X					X		
8	Lindberg	Laurie	X				X			
7	McGrath	Patricia			X			X		
9	McKee	Jan			X				X	
7	Menapace	Michele	X				X			
7	Monaco-Stevenson	Lory	X						X	
8	Monts	Charles		X			X			
5	Newmark	Lisa	X				X			
8	Oehrlein	William								
9	Parker	Marlene			X				X	
10	Payne	Phyllis	X				X			
9	Reed	Dick	X				X			
9	Reinsdorf	Marie	X				X			
7	Ross	Rhonda			X				X	
6	Sims	Roger		X					X	
8	Steinberg	Peter	X				X			
9	Stuebner	Bruce	X				X			
5	Tuley	Therese	X				X			
7	Vdovjak	John			X			X		
10	Velkoff	Patricia			X				X	
7	Vennergrund	Carol	X				X			
7	Vesilind	Rima			X				X	
9	Worley	Chris	X				X			
9	Wright	Doug	X				X			
9	Zikowitz	Brenda			X				X	
			23	4	13		22	5	13	

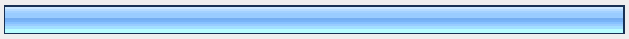
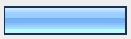
Option C = Reorder Bell schedules so more ES early, with HS in the middle tier and MS last; ES start at 7:50 a.m.

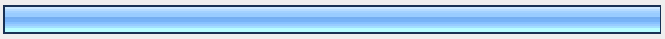
Option D = Shifted of Option C 20 minutes earlier, which would have many ES starting at 7:30 a.m.

FCPS Transportation Task Force: Parameters for Consideration

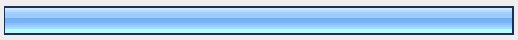
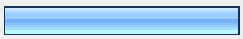
1. What is your name?	
	Response Count
	21
answered question	**21**
skipped question	**0**

2. All students should register prior to the upcoming year for transportation need.			
		Response Percent	**Response Count**
Yes		**83.3%**	15
No		16.7%	3
	Other (please specify)		6
	answered question		**18**
	skipped question		**3**

3. Civil Twilight must be a parameter for Elementary School start times.			
		Response Percent	**Response Count**
Yes		**83.3%**	15
No		16.7%	3
	Other (please specify)		5
	answered question		**18**
	skipped question		**3**

4. Elementary School students should start no earlier than 7:30am.			
		Response Percent	**Response Count**
Yes		**88.2%**	15
No		11.8%	2
	Other (please specify)		3
	answered question		**17**
	skipped question		**4**

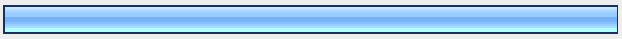
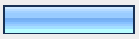
5. Elementary school students should start no later than:			
	Yes	No	**Response Count**
9:00am	30.0% (3)	**70.0% (7)**	10
9:15am	**50.0% (7)**	**50.0% (7)**	14
9:30am	41.7% (5)	**58.3% (7)**	12
		Other (please specify)	4
		answered question	**18**
		skipped question	**3**

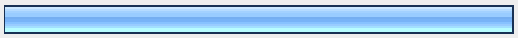
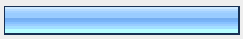
6. Elementary School start times should be ahead of High School start times.			
		Response Percent	**Response Count**
Yes		**68.8%**	11
No		31.3%	5
	Other (please specify)		7
	answered question		**16**
	skipped question		**5**

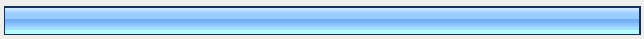
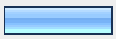
7. Middle School start times should be ahead of High School start times.			
		Response Percent	Response Count
Yes		50.0%	5
No		50.0%	5
	Other (please specify)		9
	answered question		10
	skipped question		11

8. Start times for High School should be no earlier than:			
	Yes	No	Response Count
8:00am	**54.5% (6)**	45.5% (5)	11
8:15am	**63.6% (7)**	36.4% (4)	11
8:30am	44.4% (4)	**55.6% (5)**	9
9:00am	12.5% (1)	**87.5% (7)**	8
		Other (please specify)	9
		answered question	15
		skipped question	6

9. End of Day for High School should not be later than:			
	Yes	No	Response Count
2:45pm	20.0% (2)	**80.0% (8)**	10
3:00pm	27.3% (3)	**72.7% (8)**	11
3:15pm	**50.0% (7)**	**50.0% (7)**	14
3:30pm	27.3% (3)	**72.7% (8)**	11
		Other (please specify)	8
		answered question	15
		skipped question	6

10. Students and parents should utilize more centralized pick-up points.			
		Response Percent	Response Count
Yes		**82.4%**	14
No		17.7%	3
	Other (please specify)		4
	answered question		**17**
	skipped question		**4**

11. Students (ES, MS, HS) should not ride the bus for more than 45 minutes.			
		Response Percent	Response Count
Yes		**68.8%**	11
No		31.3%	5
	Other (please specify)		8
	answered question		**16**
	skipped question		**5**

12. Students (MS, HS) should not ride the bus for more than 60 minutes.			
		Response Percent	Response Count
Yes		**85.7%**	12
No		14.3%	2
	Other (please specify)		7
	answered question		**14**
	skipped question		**7**

13. Grandfathering should be ended for non-mandatory transportation.

	Response Percent	Response Count
Yes	**82.4%**	14
No	17.7%	3
Other (please specify)		8
answered question		**17**
skipped question		**4**

14. A minimum number of 10 students per bus should be imposed for non-mandated out-of-boundary bus trips.

	Response Percent	Response Count
Yes	**70.6%**	12
No	29.4%	5
Other (please specify)		4
answered question		**17**
skipped question		**4**

15. All non-mandatory out-of-boundary trips should be ended.

	Response Percent	Response Count
Yes	43.8%	7
No	**56.3%**	9
Other (please specify)		7
answered question		**16**
skipped question		**5**

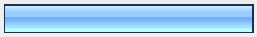
16. Bus arrival times before the first bell should be:

	Yes	No	Response Count
ES 5-15 minutes	**100.0% (15)**	0.0% (0)	15
MS 5-20 minutes	**100.0% (15)**	0.0% (0)	15
HS 5-20 minutes	**86.7% (13)**	13.3% (2)	15
HS 5-30 minutes	40.0% (4)	**60.0% (6)**	10
		Other (please specify)	5
		answered question	**15**
		skipped question	**6**

17. The MS/HS walking distance should be lengthened by 0.5 (one-half) mile.

		Response Percent	Response Count
Yes		42.9%	6
No		**57.1%**	8
		Other (please specify)	10
		answered question	**14**
		skipped question	**7**

18. Each Elementary School should be made a GT Center.

		Response Percent	Response Count
Yes		33.3%	5
No		**66.7%**	10
		Other (please specify)	10
		answered question	**15**
		skipped question	**6**

19. FCPS should no longer provide transportation to GT Centers for those ES students whose base school has a GT program.

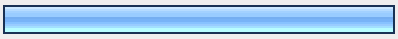
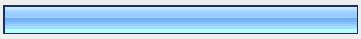
	Response Percent	Response Count
Yes	**58.8%**	10
No	41.2%	7
Other (please specify)		8
answered question		**17**
skipped question		**4**

20. All Middle Schools should have GT Centers.

	Response Percent	Response Count
Yes	**71.4%**	10
No	28.6%	4
Other (please specify)		7
answered question		**14**
skipped question		**7**

21. GT Center pupil placement will still be possible, but transportation will not be provided.

	Response Percent	Response Count
Yes	**66.7%**	10
No	33.3%	5
Other (please specify)		6
answered question		**15**
skipped question		**6**

22. High School activities should occur only after the end of the school day.			
		Response Percent	**Response Count**
Yes		**52.9%**	9
No		47.1%	8
	Other (please specify)		6
	answered question		**17**
	skipped question		**4**

23. My preference for the next committee assignment is as follows:				
	1	2	3	**Response Count**
Student Impact Committee	**75.0% (9)**	25.0% (3)	0.0% (0)	12
Teacher Impact Committee	0.0% (0)	25.0% (3)	**75.0% (9)**	12
Community Impact Committee	33.3% (5)	**53.3% (8)**	13.3% (2)	15
			Other (please specify)	8
			answered question	**15**
			skipped question	**6**

Appendix T

Middle School After-School Program Details

On average across all Middle Schools in the FCPS, nearly 2/3 of the after-school participants are at-risk and they attend after-school programs 2.5 – 3 days per week. Across all the MS, between the 2005-06 and 2006-07 school years, there was a 10 percent reduction in the percentage of D and F letter grades received in all subjects; a 6 percent reduction in the percent of Ds and Fs received in the core subjects (English, mathematics, science, social studies) (FCPS EDSL); and, across 22 FCPS middle schools (data from the four secondary schools has not been disaggregated), between the 2004-05 and 2006-07 school years, there was a 18% reduction in the number of student offenders meriting suspension and a 22 % reduction in the actual number of offenses meriting suspension (VA Department of Education, Safe Schools Information Resource).

Appendix U

Community Impacts from Other Jurisdictions Changing to Later HS Start Times, And Other Local Data

One striking element in looking at reports from other jurisdictions that have changed to later high school start times is that the Community Impact issues in each are very similar to those in Fairfax County. There were serious concerns about sports and extra-curriculars (including availability of coaches, fields and gyms), child care, teacher impact, community acceptance, and disrupted parent schedules. Questions were raised about the benefits to be gained.

Follow-up studies and reports have shown that the jurisdictions that have made the change found few negative impacts and significant positive ones:

- High school students did get more sleep after the change
- Sports and extracurriculars were not negatively impacted (in fact, in some cases, participation and performance rose)
- Parents and teachers quickly accepted and adapted to the change, with high positive ratings by both
- Child care was not as big an issue as feared
- Students and teachers both report higher levels of student alertness and participation in class, particularly first periods
- Absenteeism, tardiness and illnesses declined
- Family and peer relationships improved
- School disciplinary actions and referrals to counselors declined
- In one study, teen traffic accidents were found to decline while rates in surrounding jurisdictions rose

One exception to the smooth transition was Fayette, KY, one of the early adopters, which had significant difficulty in reaching a consensus and in gaining community acceptance. Some observers attributed this to the lack of community and stakeholder involvement in the process. But Fayette is reported to be happy with the change nearly a decade after making it, and nearby Jessamine learned from its neighbor's experience and itself succeeded in having a smooth transition by taking its time and fully involving the community.

The experiences of other jurisdictions and communities are grouped by subject matter in the sections that follow. References for these items are in Appendix E.

SPORTS AND EXTRA-CURRICULAR ACTIVITIES

Minnesota: Sports and activity participation continued at the same rate. Practices were shortened. There was generally positive feedback from coaches after the change, but

some were still firmly opposed. Some students had to leave last period of day early for away games and meets in some cases.

- *U. of Minnesota CAREI Report (excerpt):* In all districts with the later start in the morning, after school athletic and other activity practices, extended-day programs, and rehearsals were shortened, with students arriving home at a later hour than they did in 1997. However, actual participation rates in after school activities, including sports and co-curricular activities, remained at the same levels after the implementation of the later high school start time as they had been before the change. Coaches and activity leaders were generally supportive of the change because they saw students who were less tired and seemingly more mentally alert at the end of the day. A few coaches whose sports involved long practices and traveling long distances for events were outspoken about their dislike of the later start and dismissal time for the school day.
- *Minnesota study*: Compared three demographically similar jurisdictions with different HS start times (8:30 am, 7:25 am and 7:15 am) and found students at all three participated in after school sports and extra-curricular activities at similar rates. The study concluded that later start time did not restrict participation.

Arlington, VA: Two-thirds of its students had the same or increased participation in extracurricular activities after start times were changed. School staff was able to accommodate extracurricular activities, and were able to minimize the impact.

- *June 2005 Impact Study; Summary (excerpts):*

  How well did we implement? It appears from the data that the implementation of the new start times for high schools was done reasonably well and with a minimal amount of disruption. Few parents called the APS hotline set up during the summer of 2001; and few teachers reported leaving the system to teach elsewhere because of the change to the schedule. Further, implementation allowed students to continue participating in extracurricular activities both at the middle and high school levels. For example, 66% of the 255 middle school students indicated that there was no difference in their participation or that they participated in more after-school activities after the start time change than they did before the change. Similarly, about 65% of the 231 high school students who were surveyed responded that there was no difference in their participation or that they were participating in more after-school activities following the time change.

  How effectively were the system's resources used to achieve the identified goals? The transportation system handled the switch with minor glitches, and the school staff did an admirable job in accommodating the changes, including minimizing the impact on extracurricular activities. (From the study) It appears from the responses of high school students that students were able to participate in after-school activities after the start time changes. That is, about 65% of the students indicated that either there was no difference in their participation or that they were participating more in 2001-02.

Wilton, CN: Sports was a serious concern upfront, but the fears proved to be unfounded. Wilton actually saw increased sports participation and one of its best sports seasons ever. The only problem proved to be some students having to leave last period early for some away games.

- *NSF Case Study (reviewed by Wilton school system – excerpt):* Wilton faced two main challenges in proposing a change in start times. First, Wilton is a self-described "sports town." The Wilton Sports Council, a body representing the interests of the little league, soccer clubs and other private sports organizations, was a tough opponent to the change. They insisted that any change in start times would lead to the expulsion of Wilton teams from the athletic conference, a price too high to pay for any other possible benefit. Second, there were reservations raised by the parents of younger children, who would not reap the benefits of changing starting times, especially if their children now would have to arrive earlier.

  Teachers who also coached at the schools were concerned before the change that they would be unable to make it to practices, but this also turned out not to be a problem. Wilton High School had one of its best athletic seasons, even earning several Connecticut State championships. The high school athletic programs saw a continued rise in participation. Even at the 35 grade schools participation increased in extracurricular activities.

  The only problems were for those students who had to be pulled out of class early for away games, and for students who participated in more than one sport, although this full schedule would be difficult with any school start time.

- *League of Women Voters of Connecticut Concurrence Statement, 2005 (excerpts):* In Wilton, the percentage [of students participating in extracurricular activities] has been estimated at more than 75%. Because many student organizations and clubs meet weekly or monthly – frequently outside of school hours, in the morning or evening – a shift in the school day schedule should affect these organizations only minimally, if at all.

  Sports: A school system can both maintain strong participation in interscholastic athletics and align school schedules with adolescents' biological clocks. In developing a plan for later school start times; a school district should consider creative, "out-of-the-box" approaches to the scheduling, duration, and frequency of athletic practices. For instance, morning practices, already common for swim and hockey teams, would require only those athletes choosing to play a sport to wake up early, not the entire student body. The cooperation of interscholastic leagues in scheduling games is important. Some towns have granted team members an occasional early dismissal for travel time to out-of-conference away-games. Interestingly, school systems, including Wilton, which have made the change to later start times, continue to enjoy robust participation in athletics and a great deal of success on the field.

Edina, MN: *Edina public schools later start time summary (excerpt):* There has been no drop off in after-school sport or extra curricular activities, as was predicted. In fact, there has been a slight increase.

DROP-OUT RATES / AT-RISK STUDENTS

Minnesota: declined significantly (measured by "continuous enrollment")

- *U. of Minnesota CAREI study (excerpt):*
  Enrollment: A key finding of this study is that the percentage of high school students who were continuously enrolled in the same district or in the same school had statistically significantly risen since the 1995–1996 school year. Concurrently, the percentage of students who were not continuously enrolled had decreased significantly. This means that an increasing number of students were staying in the same district or in the same school for 2 or more years, and the number of students who moved in and out of the district or moved from school to school declined steadily.

  The initial findings from this longitudinal study lead to important considerations for school administrators. Addressing the needs of students who are at-risk learners, at risk for dropping out of school, or both is a universal concern. These are often students who have insufficient credits for graduation because they have missed too many first and second hour classes. The study reveals that attendance rates improved significantly when the high schools initiated the later start time; this suggests that changing start times is one way to recapture those students who might otherwise not complete high school.

ATTENDANCE/TARDINESS

Minnesota: improved significantly for the most mobile students (those not "continuously enrolled") and for most ethnic groups, grades 9-11.

- *U. of Minnesota CAREI study (excerpts):* In the 2-year period (school years 1995–1996 and 1996–1997) when school started at 7:15 a.m., the average rate of attendance rate for non-continuously enrolled students in grade 9 was 72%. During the 3 years after the later start time was in effect, the average rate climbed to nearly 76%. This change in attendance rate was highly statistically significant (at the .001 level). That is, the change in rate is not likely to be merely a chance occurrence. Equally notable were the improvements in attendance rates for students in grades 10 and 11. Their combined rates moved from an average of 73.7% with the early start to 77.5% with the later start, with the largest gains seen among students in grade 11.

  Second, after the change in start time, attendance improved for Asian, Hispanic, Black, and White students in grades 9 to 11. Attendance rates for all ethnic groups in grade 12 were the same before and after the change in start time.

  (from Summary): The students benefited the most. For example, attendance rates for all students in grades 9, 10, and 11 improved in the years from 1995 to 2000, with the greatest rate of improvement for grade 9 students. Furthermore, students who did not have a pattern of continuous enrollment in the school district showed a marked

improvement in their daily attendance rates after the initiation of the later start time in 1997–1998.

- *Minnesota study:* compared tardiness at three similar jurisdictions with different HS start times (8:30 am, 7:25 am and 7:15 am) and found a significantly lower rate of tardiness due to oversleeping at 8:30 am starting school.

Edina, MN: "We have measured fewer absences and fewer students arriving late" *(Edina later start time summary)*

Wilton, CN: Did not see any change in attendance or tardiness.

Brevard County, FL: Significant amount of tardiness and absences were reduced from first periods.

STUDENT HEALTH / DEPRESSION

Minnesota: Days home sick in past two weeks significantly lower for 8:30 am start time school (0.28) compared with 7:25 or 7:15 am opening school (0.42 and 0.47, respectively). There was evidence of significant improvements in depression measures.

Edina, MN: Students in Edina said they ate breakfast more.

- *U. of Minn. CAREI study (excerpt):* The students whose high schools started at 8:30 a.m. or later reported statistically significant less depressive feelings on those questions than did the early start students (*p* ranged from < .05 to < .001). Similarly, scores on questions measuring daytime sleepiness, the struggle to stay awake in class, and sleepiness while doing homework all showed statistically significant better outcomes for the students whose school day started later. For example, students in late-start schools reported being less likely to arrive late to class because of oversleeping, or to fall asleep in a morning or afternoon class, or to feel sleepy while taking a test. They also reported statistically significant fewer feelings of sleepiness when at a computer, reading, or studying. (More details about these findings are at: http://education.umn.edu/CAREI/Programs/start_time/VIIexec_summ.html).

  Many of the benefits of the later start time were similar for both urban and suburban students, with their actual scores being nearly identical despite the differences in their local economic conditions.

Fairfax County:

- 2005 Youth Risk Survey: Shows 33.9 percent of Fairfax County 8th to 12th graders show classic signs of depression ("During the past 12 months felt so sad or hopeless almost every day for weeks or more in a row that they stopped doing some usual activities."). Fifteen percent of 8th-12th graders (including 18.9 percent of females) had considered suicide.

PARENT / PEER RELATIONSHIPS / ATTITUDE

Minnesota: improved relationships with peers and parents.

- *U. of Minn. CAREI study (excerpts):* High school principals were personally interviewed about what changes, if any, they saw in their schools as a result of the change to a later start. The most common response was that the mood of the students in the hallways, during passing times, was now calmer. They also cited that calmness as being evident in their student cafeterias during lunch. As a result, five of the eight principals noted that they were dealing with fewer disciplinary referrals to their offices. With fewer students arriving tardy, their offices were much less congested in the morning, and there were fewer record-keeping tasks associated with tardiness and students dropping out of their first-hour classes. Seventeen school counselors and three school nurses also provided personal comments, noting that significantly fewer students were coming to them to report peer relationship problems and/or difficulties with their parents. They echoed the principals' perceptions that the overall mood in their schools was calmer, with the students' temperaments seeming much more even.

  Parents who attended their child's high school conference were asked to complete a written survey; about 92% of suburban parents supported the change. Their negative comments centered on the later times that their children were now coming home after participating in after school activities or sports. Urban parents were interviewed in focus groups; their reactions were more mixed, often with negative comments related to changes required in work schedules and transportation limitations. Both urban and suburban parents noted that their high school children were "easier to live with." They found that they were having fewer confrontations with their children in the morning about getting out of bed and getting to school on time. They also commented that they were having more actual conversations with their teenage children in the morning, finding that they had new "connection time" with their child.

  One issue brought up and echoed by all respondents was that the new schedule makes conferences between counselors and parents easier to schedule. Parents appreciate the convenience of later meetings, and they feel more free to ask the counselor for a 4:00 PM or even later meeting.

Arlington, VA:

- *June 2005 Impact Study (excerpts)*: The point was raised before the implementation of new start times that the impact would be felt not only on students, teachers, and the school system as a whole, but also on families. For example, there was a concern that with older siblings in school later, there would be an increased demand for Extended Day or a greater demand for the after-school Check-In Program at middle schools. The concern turned out to be unfounded. Extended Day staff did not see an increase in demand for Extended Day that could be attributed to the start time change.
- *Summary: Impact on Groups Other than High School Students:* In general, it appears that teachers and families adjusted to the change in school start times. Teachers did not leave the system because of the change and there was not an increased demand for Extended Day services.

Wilton, CN: *NSF Case Study (excerpt):* Teachers recognized a change in student behavior: they were more awake, had better attitudes and were overall more pleasant. Parents also reported changes in their kids' attitudes, and became increasingly supportive as they adjusted to the new routines**.**

Jessamine, KY: *NSF Case Study (excerpts):* Jessamine County parents and students were very accepting of the results of the change. There were very few complaints about the change, and few problems with the transportation situation… The community, especially the teachers, was supportive of the proposed change, and has seen positive results.

TRANSPORTATION COSTS

Minnesota: no increase in bus costs

- *Excerpt:* Transportation costs are often cited as the reason that the change will not work in a district. In fact, neither the suburban school district of Edina, Minnesota nor the urban district of Minneapolis, Minnesota, found that the change to a later start increased their transportation costs. The same buses and routes were used; the only changes made were the times the buses used the routes.

Arlington: no increase in resources.

Wilton, CN:

- *(LWV Concurrence Study, 2005 (excerpt):* Because Wilton's new schedule did not involve leasing any new buses, the implementation process was made simpler for the administration, and parents and students reported an adjustment period of only about two months to the new schedules.

Jessamine, KY: No additional drivers were required to make the transportation work.

Brevard County, FL: Did not need to increase the number of buses**.** The transportation time actually decreased between serving schools by fifteen minutes.

AUTOMOBILE ACCIDENTS

Background: Car crashes are the Number 1 killer of teens, according to the National Highway Traffic Safety Administration (NHTSA). Experts attribute the high rate of car crashes to many factors, including inexperience, speed, risk-taking, use of drugs and alcohol, as well as drowsy driving. A National Sleep Foundation 2006 poll of teens found that 51 percent said they have driven drowsy in the past year, and 15 percent at least once a week. This rose to 68 percent and 20 percent, respectively, by 12th grade. In addition, 9 percent of 12th-graders said they have actually fallen asleep at the wheel in the past year. More than half (55%) of all asleep-at-the-wheel car crashes involve drivers 25 and younger, according to a North Carolina study. According to a 2007 Children's

Hospital of Philadelphia/State Farm study of teen driving habits (based on a survey of 5,665 students): drivers who are younger than 25 cause the majority of drowsy driving-related crashes. Although only half of teens report seeing drunk driving by teen drivers at least sometimes, three-fourths of respondents report seeing fatigued driving by teens.

- (Excerpt from Advisory Council on Instruction research report): The frequency of crashes in which the driver was judged by state police to not be intoxicated but judged to have been asleep are highest for young people between the ages of 16 and 20. The highest most frequent time of occurrence for sleepy drivers is between 5 AM and 8 AM.
- According to an NHSTSA expert panel on Driver Fatigue and Sleepiness: "Young people, and males in particular, were the most likely to be involved in fall asleep crashes."
- "Fall asleep crashes may kill more young Americans than alcohol related crashes."(Mark Mahowald, MD, in the quarterly *Sleep Medicine Alert*, Summer 1999, published by the National Sleep Foundation.)

Minnesota: One reason cited for switch to later HS start times was to lower risk of teen auto accidents.

- *Consequences of Unmet Sleep Needs (from Final Report Summary):* Risks for adolescents lacking sleep include daytime sleepiness, vulnerability to catastrophic accidents (echoed by Dr. Mark Mahowald, director of the Minnesota Regional Sleep Disorders Center at Hennepin County Medical Center in Minneapolis), mood and behavior problems, increased vulnerability to drugs and alcohol, and development of major sleep disorders (Carskadon, 1990).

Fayette, KY: A study looked at the rate of traffic accidents in the school system before and after the change to a later start. While the statewide rate of crashes increased 8 percent over the two years after the change, Fayette County, which was previously one of the counties with the highest crash rates, reduced its crashes by over 15 percent.

- *Summary from study accepted for publication in Adolescent and Family Health (courtesy of Dr. Fred Danner, U. of Ky.):*
  Moving the school start time one hour later for all of the adolescents in one large county school district (the only county to do so during the period of this study) resulted in meaningful increases in sleep time, an increase in the percentage of students who got an adequate amount of sleep (8-9 hours cf., Carskadon, 1999) and a decrease in catch-up sleep on weekends. It was also associated with a significant drop in auto collision rates for high school aged drivers in that county, while crash rates increased in the rest of the state during the same time period. These findings are not necessarily causal since they are not the result of a direct assessment of the sleep habits of drivers who did and did not have accidents. However, these data are consistent with the idea that allowing adolescents to sleep more on school nights by delaying the start of school not only results in them sleeping more but also may have a measurable positive effect on their driving safety. *(Fred Danner, PhD, Department of Educational and Counseling Psychology, 243 Dickey Hall, University of Kentucky, Lexington, KY, 40506. USA; Barbara Phillips, M.D, Department of Internal*

Medicine, MN618 Medical Science Building, University of Kentucky, Lexington, KY, 40506. USA.)

CHILD CARE

Jessamine, KY: The only complaints were about childcare for younger students. The local YMCA responded by offering before school care for middle school students who now had the latest start times.

Brevard County, FL:

- **Negative:** After school care needs increased.
- **Positive:** Eliminates before school care needs.
- **Middle School:** They hold before school activities rather than after school, using own transportation.

Arlington, VA:

- *June 2005 Impact Study (Summary):* **What happened that was unexpected or unintended?** An unexpected outcome was the lack of added demand placed on Extended Day and the paucity of complaints registered by parents and families.
- *Impact on Groups Other than High School Students:* In general, it appears that teachers and families adjusted to the change in school start times. Teachers did not leave the system because of the change and there was not an increased demand for Extended Day services.

Fairfax County, VA – JEB Stuart High School: Data from 2004-2005 parent and student surveys at JEB Stuart High School indicate that later school schedules would have little impact on student jobs, parent work schedules or child care arrangements. Nearly 90 percent of parents said a later school day would not cause a problem for their work schedule or current child care arrangements. Of the few for whom there was a potential problem only about one quarter said it would be difficult to make a change. The net result is that less than three percent had a conflict that they believed would be hard to resolve.

JOBS / EMPLOYERS

Minnesota – *Minnesota Start Time Study (excerpt):* The overall impression that employers, managers and human resource workers gave was that there would be little or no impact from a later school dismissal time. Four employers stated there would be an impact in the after-school work shifts, but when asked if a one hour later start time would have an impact, three said that one hour would not have much of an impact, that they "could deal with it" or that they are "flexible." Most of the employers said that their high school employees either do not start right after school or that they could "adjust the day workers" shifts to accommodate a later arrival of the students.

Fairfax County: Data from 2004-2005 parent and student surveys at JEB Stuart High School indicate that later school schedules will have little impact on student jobs, parent work schedules or child care arrangements.

- Of the 23 percent of Stuart students who work, the average start time for work on a school day was 4:22 pm, more than two hours after the current school end time. Students now start work as late as 9 pm on school days.
- In the Stuart parent survey, nearly 90 percent said that a later school day would not conflict with a job held by their student. Most of the remainder said it would be easy for their students to change work hours to accommodate a later schedule.
- The 1998 Task Force interviewed local employers and concluded that later start and end times would NOT interfere with student work opportunities. They found that employers generally use student workers on weekends and evenings, schedules that would not conflict with later end times. In a poll of fifteen Fairfax businesses employing high school students, they were unanimous in stating that the later start time would not impact student work hours and that they would continue to hire students. The following employers were contacted: Baskin Robbins Ice Cream, Bath and Body, Blockbuster Video, Burger King, Friendly's, Giant Food, K-Mart (Burke), Kohl's, Multiplex Movie, Penney's (Fair Oaks), Safeway, Subway, Taco Bell, Target (Burke), TCBY (Report; pp 27-28).

JUVENILE CRIME & GANG ACTIVITY / PUBLIC SAFETY

Arlington *(advisory Council on Instruction report):* The opportunity that early dismissal presents for anti-social, criminal and high-risk behavior has also been cited as a concern. According to Arlington County Deputy Police chief John Haas, "We would love to see down time between high school dismissal time and the start time for extracurricular activities eliminated entirely, thus eliminating opportunities for mischief and criminal activity.

Minnesota: found fewer referrals for disciplinary action at schools.

TEEN SLEEP IMPACTS

Minnesota: Studies found Minneapolis students with an 8:40 am start time got an hour more sleep per school night than students in comparable high schools that started an hour earlier. Follow-up three years later found that the students with later start times were still getting an hour more sleep per school night:

- *Minneapolis Public Schools Start Time Study, Executive Summary, August 2001):* Student Survey - Preliminary Results The School Sleep Habits Survey developed by Bradley Hospital at Brown University was administered to a stratified random sample of Minneapolis Public School 9^{th} – 12^{th} graders in December, 1997 (school year 1997-98) and again in January, 2001 (school year 2000-2001). All students in both years attended schools with 8:40am start times:

- Students in the 1997 survey reported a mean school day bedtime of 10:48pm. This time is statistically similar to the 2001 reported a mean bedtime of 10:41pm.
- Students in 1997 reported a mean weekend bedtime of 12:40am, statistically similar to the reported weekend bedtime of 12:42am in 2001. Likewise, students in 1997 reported a mean weekend wakeup time of 9:51am, while students in 2001 reported a mean weekend wakeup time of 9:49am, not a statistically significant difference.
- Minneapolis high school students continue to get an hour's more sleep each school night or obtain five more hours' sleep per week than students whose high schools begin an hour earlier than Minneapolis schools**.** This finding supports the medical researchers' finding that nearly all teenagers become sleepy at about 11:00 PM**.** It also lays to rest the fears and expectations that a later start would mean that Minneapolis students would just end up staying up an hour later on school nights.

  http://cehd.umn.edu/CAREI/Reports/docs/SST-2001ES.rtf (Executive Summary)
  http://cehd.umn.edu/CAREI/Reports/docs/SST-2002Bulletin.pdf (see pp. 12-14)

Wilton, CN: High school students got 35 minutes more sleep on average after 40-minute later start time change.

- NSF Case Study (excerpt): The results have been impressive: students are getting more sleep and are healthier and happier.
- The following fall, the local sleep disorders center administered a sleep survey in the high school, with results showing that the students were, in fact, sleeping an extra hour each morning.
- The Norwalk Hospital Sleep Disorders Center, which conducted the sleep study before the change, continued with a follow up survey to assess the impact. They used a truncated version of the self-administered School Sleep Habits Questionnaire, which asked questions about sleep, sleepiness and grades. The results have shown that Wilton High School students are getting 35 minutes more sleep than before the change. The number of students who reported that daytime sleepiness was not a problem doubled. Their bedtimes did not change.

Fayette, KY: NSF Case Study: Students in every grade from 6-12 averaged more sleep in the year after the change, up to 50 extra minutes in the 12th grade. The percent of high school students getting at least eight hours of sleep per night went from 21%-51%.

TEEN ACADEMICS IMPACTS

Arlington, VA *June 2005 Impacts Study, Summary* (excerpts):

- **What changes happened for the intended recipients?** Survey data from students suggest that high school students were more ready to start school, were more alert,

and participated in class discussions and activities more frequently after the change in start time than in the year prior to the change. This trend was especially apparent with regard to class participation. Forty-two percent of the high school students reported that they participated in discussions or activities during their first period classes "all of the time" during the 2001-02 school year. In contrast, only 31% of these students responded in the same manner when they were asked about the 2000-01 school year. Likewise, high school teachers reported dramatic increases in the number of first period students who were alert, prepared, and participatory.

- **How well was our approach validated?** The school start-time change was made upon the recommendation of the ACI [*Note: Instruction staff*] and after considerable deliberation by the School Board and senior officials of the Arlington Public Schools. Research on the impact of school start times and adolescent behavior guided the decisions about changing the schedules, and this study concludes that the change had its desired impact on the main beneficiaries, high school students. On the other hand, the compromises that went into the switch, especially vis-à-vis middle school students *[switching MS to an earlier time*], seem to have kept adverse consequences within acceptable limits.
- **Is this the most effective way to achieve success?** It appears this change came at the expense of middle school students (many of whom are also adolescents) *[MS switched to earlier time, before HS*], and a more effective approach might have been to shift elementary start times. Given the complications of bus schedules and parents' work schedules, this was not possible.

Summary: Start Time's Impact on Academic Achievement as Measured by Grades, Absences, Times Tardy and Perceptions:

- The first period grades of both cohorts of high school students – that is, the classes of 2003 and 2004 – improved slightly after the start time change in 2001. The change, however, was so slight that it did not represent a change in letter grades.
- In general**,** more high school students reported feeling ready to start school and alert during their first period class after the school start time change
- Higher percentages of teachers agreed that their students were more alert, prepared, and participatory after the start time change than before.

Minnesota: found slight grade improvement but not statistically significant. Kids more alert, prepared for first class of the day.

- *Changing Times: Findings From the First Longitudinal Study of Later High School Start Times* **(**Kyla Wahlstrom, NASSP Bulletin - Vol. 86 No. 633 December 2002): Given the numerous obstacles to obtaining "clean" data, the analysis took nearly a year. In the end, the comparison of students' letter grades for 3 years prior to the change (starting time of 7:15 a.m.) and 3 years after revealed a slight improvement in grades earned overall, but the differences were not statistically significant. The trend lines for letter grades earned for all grade levels 9 through 12 for the years of the later start time are on an upward (positive) slope. Students' self-report from a written survey on their grades earned corroborate this finding.

Edina, MN:

- E*dina Later Start Time Summary*: Parents, students and staff all agree it has been a good change. Teachers report more alert students and improved learning beginning at 8:30 as compared to the 7:25 start.
- *CAREI Case Study on Edina*: There seemed to be a general agreement among all eight [teachers] who said that, during first hour, they doesn't have "people with their heads down on the desk, they seem to be more engaged in what they're doing; they seem to be more focused."

  A few students said they are doing better academically because they are more awake. One student shared, "I have only fallen asleep once in school this whole year, and last year I fell asleep about three times a week." Another student added that she's "more alert and doesn't 'zone out' as much." On a similar note, a student said, "I feel I pay better attention because my sleep schedule is closer to my normal sleep pattern." Two students added that it feels a lot better now that they leave for school when it is light out, whereas last year during the winter it was dark when they left for school.

BEFORE & AFTER-SCHOOL ASSISTANCE

Arlington: *June 2005 Impact Study:* About half of the high school teachers who responded to the teacher survey indicated that they saw about the same number of students before school in 2001-02 as they did in 2000-01. About 13 percent indicated that they saw more students before school and about 13 percent indicated they saw fewer students before school in 2001-02.

When asked about the number of students they help after school, about 35 percent of the high school teachers responded "about the same number of students" compared with "last year." About 13 percent reported helping more students after school whereas about 38 percent reported seeing fewer students after school during the 2001-2002.

COMMUNITY ACCEPTANCE

Minnesota: Parents who attended their child's high school conference were asked to complete a written survey, and about 92% of suburban parents supported the change.

Arlington: *June 2005 Impact Study, Summary:*

- **How well did we implement?** It appears from the data that the implementation of the new start times for high schools was done reasonably well and with a minimal amount of disruption. Few parents called the APS hotline set up during the summer of 2001.
- **What happened that was unexpected or unintended?** An unexpected outcome was the lack of added demand placed on Extended Day and the paucity of complaints registered by parents and families. Although not included in the data analyzed for this report, an information telephone line was set up prior to the start time change to

answer parents' questions and gauge the community's attitudes about the change. Few parents called the information line with questions or concerns.

- **How satisfied were the users and clients?** Based on analysis of survey data, the high school students seemed satisfied with the change; and the middle school students were less satisfied. *[MS students were changed to an earlier time.]* For example, 42% of the high school students indicated on the survey that they liked the 2001-2002 start time better than the 2000-2001 start time. Only 22% of the middle school students expressed the same preference.

Arlington's Advisory Council on Instruction Report (telephone survey):

- 60% of the respondents were concerned about their teenagers being too sleepy to learn effectively at 7:30 in the morning.
- About 75% of the respondents favored a later start time. The most popular start times were 8:30 (34%) and 8:00 (26%). About 20% favored the current start time.
- For the "least popular" start time, 52% chose "later than 9:00" and 31% chose 7:30. Nobody chose 8:00 or 8:30 as the worst time.

Wilton, CN:

- *NSF Case Study*: The new schedule was implemented in the fall of 2003. Because Wilton's new schedule did not involve leasing any new buses, the implementation process was made simpler for the administration, and parents and students reported an adjustment period of only about two months to the new schedules.

  The three impacted schools – middle, high and upper elementary – participated in a survey initiated by the Parent Teacher Student Association that was presented to the Board of Education at the end of the first year of the new schedule. Large majorities at all three schools reported satisfaction with the change**.**

- *LWVs of Connecticut Concurrence study, Sept. 2005:* At the close of the first year of the new start time, Wilton's PTAs surveyed the high school, middle school, and upper elementary school communities to determine satisfaction with the new start time. Responses at all three schools were overwhelmingly positive. Also, the Norwalk Hospital Center for Sleep Disorders did surveys of WHS students' sleep patterns before and after the time change. Wilton students report getting an average of 55 minutes more sleep each night after the change. The League of Women Voters has held morning coffee meetings with the principals from all three affected schools to gauge progress over the past two years, with very positive reports from all. During the first year, there were occasional complaints about athletes being late for "away" athletic events. Also, during the second year, in response to parental concerns, the Board of Education adjusted the early bus pick-up times for Wilton's upper elementary school. More importantly, however, no one questions the benefits of the change for Wilton's middle school and high school and no one has recommended returning to the former schedule.

Fayette, KY: NSF Case Study (had a very rocky decision-making process, strong opposition and changing decisions from School board, according to NSF): Now, seven years after the change, you would have a hard time getting Fayette County to go back.

Everyone has adjusted to the different routines, and the students and parents appreciate the more healthy approach to education.

Jessamine, KY: The community learned from the difficult experiences of nearby Fayette, took its time and involved many stakeholders. They educated the community on teen sleep needs, and did extensive surveys (using nationally recognized survey tools) of teen sleep habits and of staff and parent views. Jessamine County parents and students were very accepting of the results of the change. There were very few complaints about the change, and few problems with the transportation situation.

- *NSF Case Study:* The implementation of the change was very smooth. Because Jessamine took their time in studying the issue and included all important decision makers in the process (including transportation directors), the changes were made easily and with little opposition. No additional drivers were required to make the transportation work. The only complaints were about child care for younger students. The local YMCA responded by offering before school care for middle school students who now had the latest start times.

Edina, MN: *Edina Later Start Time*, *Summary:* Parents, students and staff all agree it has been a good change. It is unusual to have so much agreement about an issue in education today.

TEACHER IMPACT

Arlington: *June 2005 Impact Study:* About 75 percent of both high school and middle school teachers indicated that the change in school start times did not cause them to consider changing the level they teach or where they teach. Similarly, few teachers (under 10 percent) responded that they seriously considered teaching at another level. However, about 13 percent of the high school teachers and 10 percent of the middle school teachers did report that they considered teaching in another county as a result of the change. We do not know from these data if any teachers did switch positions because of the time change. According to the Department of Personnel Services, no teachers left Arlington Public Schools in 2001-2002 citing the change in start times as the reason for their departure.

- *Summary: Impact on Groups Other than High School Students:* In general, it appears that teachers and families adjusted to the change in school start times. Teachers did not leave the system because of the change and there was not an increased demand for Extended Day services.
- **How well did we implement?** It appears from the data that the implementation of the new start times for high schools was done reasonably well and with a minimal amount of disruption. Few parents called the APS hotline set up during the summer of 2001; and few teachers reported leaving the system to teach elsewhere because of the change to the schedule.

- **What changes happened for the intended recipients?** Survey data from high school teachers showed that higher percentages of teachers agreed or strongly agreed with the statement that their first period students were alert, prepared, and participatory in 2001-02 than agreed with the statement as it applied to their students from the previous year (before the time change).

SOURCES / LINKS

(Note: Many other references can be found in Appendix E.)

Minnesota:
"Changing Times: Findings from the First Longitudinal Study of Later High School Start Times," Kyla Wahlstrom, associate director of the Center for Applied Research and Educational Improvement (CAREI) at the University of Minnesota, NASSP Bulletin, Vol. 86, No. 633, December 2002.

http://cehd.umn.edu/CAREI/Reports/docs/SST-2002Bulletin.pdf
http://cehd.umn.edu/CAREI/Reports/summary.html#SchoolStart
http://cehd.umn.edu/CAREI/Reports/docs/SST-1998VI.pdf
http://cehd.umn.edu/CAREI/Reports/docs/SST-1998VII.pdf

Edina, MN:
http://www.edina.k12.mn.us/news/reports/laterstart/summary.htm

Arlington, VA:
Impact of 2001 Adjustments to High School and Middle School Start Times (June 2005)
http://www2.apsva.us/1540108292149610/lib/1540108292149610/report0605.pdf

Advisory Council on Instruction High School Start Time Study Committee Report (Dec 1999):
http://www2.apsva.us/1540108292149610/lib/1540108292149610/hs_start_time_report.pdf

Wilton, CN: (NSF Case study, League of Women Voters of Connecticut Concurrence Study)
http://www.sleepfoundation.org/site/c.huIXKjM0IxF/b.2511905/k.80A2/Changing_School_Start_Times_Wilton_Connecticut.htm

http://serv01.siteground126.com/~wiltonlw/images/stories/MiscPDFs/lwvctconcurrence.pdf

Fayette, KY:
http://www.sleepfoundation.org/site/c.huIXKjM0IxF/b.2511919/k.E074/Changing_School_Start_Times_Fayette_County_Kentucky.htm

Jessamine, KY:
http://www.sleepfoundation.org/site/c.huIXKjM0IxF/b.2511911/k.DCEB/Changing_School_Start_Times_Jessamine_County_Kentucky.htm

Minnesota:

http://cehd.umn.edu/CAREI/Reports/docs/SST-1998VII.rtf

*Table 1: Districts and Start Times

http://cehd.umn.edu/CAREI/Reports/docs/SST-1998VII.rtf

Items/Scales from Sleep Survey	**District A 8:30am**	**District B 7:25am**	**District C 7:15am**	**All 17 School Districts**
School Day Rise Time	7:06am1	6:08am2	5:58am3	6:11 am
School Night Bedtime	11:21pm1	11:20pm1	11:09pm1	11:08 pm
School Night Sleep Total	7 hrs, 46 min1	6 hrs, 47 min2	6 hrs, 48 min2	7 hrs, 2 min
Daytime Sleepiness	2.101	2.452	2.973	2.50
Sleepiness Scale (#43)	14.861	15.861	17.742	16.56
Struggled to stay awake or fallen asleep (school related items from #43):				
reading, studying, doing homework	1.951	2.121	2.612	2.23
during a test	1.211	1.341	1.572	1.44
in a class at school	1.981	2.24ns	2.482	2.38
while doing work on a computer or typewriter	1.171	1.32ns	1.422	1.31
Sleep Behavior Scale (#45)	19.191	21.022	22.843	21.71
In the last two weeks, how often have you (#46):				
arrived late to class because you overslept	1.491	1.912	2.022	1.71
fallen asleep in a morning class	1.571	1.952	2.012	2.02
fallen asleep in an afternoon class	1.451	1.70ns	1.852	1.84
Depression Scale (#46)	9.961	10.431	11.432	10.59
Days Home Sick Over 2-weeks (#21)	0.281	0.421	0.471	0.40

Table 4: Comparison of Three Demographically Similar High Schools (grades 10-12):
District A: 8:30 am start time
District B: 7:25 am start time
District C: 7:15 am start time

Hours of organized sports during the week similar:
A: 3 hours/16 minutes
B: 4 hours/14
C: 3 hours/10 minutes

Hours of extracurriculars during school week similar:
A: 2 hrs/44 minutes
B: 1 hour/32 minutes
C: 2 hours/48 minutes

Note: Different superscript values indicate a statistically significant difference between row means at $p < .05$. "ns" superscripts indicate that this district's mean is not significantly different from the other two district means (e.g., for item "School Day Rise Time" each of the three means are significantly different from each other; for the sub-item "struggled to stay awake in class at school" District B was not significantly different from either District A or C, but District A is significantly different from District C).

Transportation Task Force
Final Report – Signatures

Last Name	First	Title	Signature	Support	Oppose	Abstain
Ackerman	Rona	Elementary School Parent		✓		
Aste	Mahri	FCPS Elementary School Principal			✓	
Auerbach	Jan	FC Federation of Citizens Assoc.		✓		
Baker	Laurie	High School Parent		✓		
Berlin	John	Program Services Mgr, Park Svc Div				✓
Bosley	Mary Ann	FCPS High School Asst. Principal				was
Brigleb	Jay	High School Student	Participated, but ineligible to vote Did not attend 50% of meetings			
Campo	Ken	FCPS Safety Specialist			KC	
Carley	Jennifer	Elementary School Parent		✓		
Carlson	Walt	FC Federation of Citizens Assoc.		✓		
Carroll	Robin	Middle School Parent		✓		
Chapman	John	FCPS MS After-School Program Specialist	Participated, but ineligible to vote Did not attend 50% of meetings			
Cherubini	Lisa	Soccer Advisory Council	Participated, but ineligible to vote Did not attend 50% of meetings			
Clancy	Mike	Elementary School Parent TF Vice Chairman		✓		
Cox	Stephanie	Secondary School Parent		✓		
Cryan	Roger	Elementary School Parent		✓		
Culin	Susan	Commander, Traffic Division				
Dumont	Rhonda	FCPS Student Activity Athletic Prog. Specialist			RD	
Ellis	Jesse	Supervisor, Community Use	Resigned			
Emery	Mark	FCPS After-School Program Administrator				
Evans	Sandy	Co-Founder, SLEEP		✓		
Floyd	Laura	Elementary School Parent				
Galicia	Carlos	High School Student	Participated, but ineligible to vote Did not attend 50% of meetings			
Galizio	Lyndsie	FCPS Middle School Special Education Tchr	Participated, but ineligible to vote Did not attend 50% of meetings			

Last Name	First	Title	Signature	Support	Oppose	Abstain
Gillette	Kathye	Secondary School Parent	Kathye Gillette		King	
Goldberger	Margaret	High School Parent	Resigned & Replaced			
Harbeck	Judy	FC County Federation of Citizens Assoc.				
Harris	Kerri	FCPS Elementary School Teacher	Resigned			
Hecht	Jill	Elementary School Parent	Jill A. Hecht	✓		
Jakulski	Jill	FCPS Special Services HS Principal				
Kang	Shirley	Middle School Parent	Resigned			
Kim	Christina	Elementary School Parent	Participated, but ineligible to vote Did not attend 50% of meetings			
Krebs	Barbara	Area Membership Manager	Participated, but ineligible to vote Did not attend 50% of meetings			
Lecos	Mary Anne	FC Federation of Citizens Assoc	Resigned & Replaced			
Lindberg	Laurie	Middle School Parent	Laurie G Lindberg	✓		
Lindner	Jenny	FCPS Secondary School Social Studies Teacher	Participated, but ineligible to vote Did not attend 50% of meetings			
Martinez	Donna	Member Advisory Council Students with Disabilities	Resigned			
McGrath	Patricia	After School Programs Branch Manager	Patricia McGrath			✓
McKee	Jan	FCPS Alternative High School Principal	Jan McKee		✓	
Menapace	Michele	President, FCCPTA	Michele Menapace	✓	Not No!	
Minnich	Pam	Commander, Youth Services Division				
Monaco-Stevenson	Lory	Elementary School Parent/FCPS employee	Lory Monaco-Stevenson			✓
Monts	Charles	Boy Scouts George Mason District Chairman		✓		
Newmark	Lisa	Elementary School Parent	Lisa Newmark	✓		
Nicholson	Beanca	High School Student	Participated, but ineligible to vote Did not attend 50% of meetings			
Oehrlein	William	FCPS Secondary School Principal				
O'Keefe	P.D.	FCPS Violence Prevention Specialist	Participated, but ineligible to vote Did not attend 50% of meetings			
Parker	Marlene	FCPS High School Career & Transition Teacher	Marlene Parker			✓
Payne	Phyllis	Co-Founder, SLEEP	Phyllis Payne	✓		
Pflugrath	Mike	FCPS Athletic Coach/Asst DSA	Participated, but ineligible to vote Did not attend 50% of meetings			
Reed	Dick	Secondary School				

Last Name	First	Title	Signature	Support	Oppose	Abstain
		Parent/TF Chairman				
Reinsdorf	Marie	Secondary School Parent	Marie Reinsdorf	✓		
Ross	Rhonda	SACC Program Administrator	Rhonda Ross		✓	
Rutherford	Mike	Elementary School Parent	Resigned			
Sims	Roger	Springfield representative				
Stefan	Tim	Senior VP, Asset Mgmt, Tysons Corner	Participated, but ineligible to vote Did not attend 50% of meetings			
Steinberg	Peter	Elementary School Parent		✓		
Stuebner	Bruce	FCPS Elementary School P.E. Teacher	Bruce A. Stuebner	✓		
Swarm	Joe	FCPS Athletic Coach/Asst DSA	Participated, but ineligible to vote Did not attend 50% of meetings			
Thibodeau-Robitaille	Jan	FCPS Elementary School Teacher	Participated, but ineligible to vote Did not attend 50% of meetings			
Todd	Jeff	Bd of Dir, Mt. Vernon-Lee Chamber	Participated, but ineligible to vote Did not attend 50% of meetings			
Tuley	Therese	High School Parent	Therese B. Tuley	✓		
Vdovjak	John	FCPS Asst Principal, HS ED Prog				
Velkoff	Patricia	Secondary School Parent	Patricia Velkoff		✓	
Vennergrund	Carol	Middle School Parent	Carol Vennergrund	✓		
Vesilind	Rima	FCPS HS Principal	Rima Vesilind		✓	
Wegener	Christin	Transportation Planner	Participated, but ineligible to vote Did not attend 50% of meetings			
Wood	Gayle	High School Parent	Resigned			
Worley	Chris	Elementary School Parent	Chris Worley	✓		
Wright	Doug	FCPS Academy Administrator	Doug Wright	✓		
Zikowitz	Brenda	FCPS Bus Driver				