



Review of Current Bell Schedule Structure & Considerations for Changes

March 16, 2021

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Today

- Board requested review of structures to shift high school morning start time later
- Request based upon studies by American Pediatric Association & others
- Review of other districts implementation of shift to later start time
- Review of WCPSS options to shift Bell Schedule Structure to provide later HS start times

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Today

- Background on current 3-Tier Bell Schedule Structure
- Today's presentation for information only
- Bring back to Board Work-Session in May 2021 for further unpacking & Board Discussion

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Studies

american academy of pediatrics study

abstract

FREE

The American Academy of Pediatrics recognizes insufficient sleep in adolescents as an important public health issue that significantly affects the health and safety, as well as the academic success, of our nation's middle and high school students. Although a number of factors, including biological changes in sleep associated with puberty, lifestyle choices, and academic demands, negatively affect middle and high school students' ability to obtain sufficient sleep, the evidence strongly implicates earlier school start times (ie, before 8:30 AM) as a key modifiable contributor to insufficient sleep, as well as circadian rhythm disruption, in this population. Furthermore, a substantial body

American Academy of Pediatrics
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Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

POLICY STATEMENT

School Start Times for Adolescents

abstract

FREE

ADOLESCENT SLEEP WORKING GROUP, COMMITTEE ON ADOLESCENCE, and COUNCIL ON SCHOOL HEALTH

KEY WORDS

adolescents, insufficient sleep, school start times

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FACTORS INFLUENCING INSUFFICIENT SLEEP IN ADOLESCENTS

Insufficient sleep represents one of the most common, important, and potentially remediable health risks in children,^{1,2} particularly in the adolescent population, for whom chronic sleep loss has increasingly become the norm.³ The reasons behind the current epidemic of insufficient sleep are complex and interrelated. From a biological perspective, at about the time of pubertal onset, most adolescents begin to experience a sleep-wake "phase delay" (later sleep onset and wake times), manifested as a shift of up to 2 hours relative to sleep-wake cycles in middle childhood.⁴ Two principal biological changes in sleep regulation are thought to be responsible for this phenomenon.^{5,6} One factor is delayed timing of nocturnal melatonin secretion across adolescence^{5,7,8} that parallels a shift in circadian phase preference from more "morning" type to more "evening" type, which consequently results in difficulty falling asleep at an earlier bedtime.⁴ The second biological factor is an altered "sleep drive" across adolescence, in which the pressure to fall asleep accumulates more slowly, as demonstrated by the adolescent brain's response to sleep loss⁹

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WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Studies

[journal of school health, school start times, review of the literature](#)

RESULTS

Most studies reviewed provide evidence that delaying school start time increases weeknight sleep duration among adolescents, primarily by delaying rise times. Most of the studies saw a significant increase in sleep duration even with relatively small delays in start times of half an hour or so. Later start times also generally correspond to improved attendance, less tardiness, less falling asleep in class, better grades, and fewer motor vehicle crashes.

PMC Alt PDF

School Start Times, Sleep, Behavioral, Health, and Academic Outcomes: a Review of the Literature
J Sch Health. 2018 May; 88(5): 363-381. Author manuscript.

The Journal of school health
Author Manuscript HHS Public Access

School Start Times, Sleep, Behavioral, Health, and Academic Outcomes: a Review of the Literature

Anne G. Wheaton, PhD, Daniel P. Chapman, PhD, and Janet B. Croft, PhD

Additional article information

Abstract

BACKGROUND

Insufficient sleep in adolescents has been shown to be associated with a wide variety of adverse outcomes, from poor mental and physical health to behavioral problems and lower academic grades. However, most high school students do not get sufficient sleep. Delaying school start times for adolescents has been proposed as a policy change to address insufficient sleep in this population and potentially to improve students' academic performance, reduce engagement in risk behaviors, and improve health.

METHODS

This paper reviews 38 reports examining the association between school start times, sleep, and other outcomes among adolescent students.

RESULTS

Most studies reviewed provide evidence that delaying school start time increases weeknight sleep duration among adolescents, primarily by delaying rise times. Most of the studies saw a significant increase in sleep duration even with relatively small delays in start times of half an hour or so. Later start times also generally correspond to improved attendance, less tardiness, less falling asleep in class, better grades, and fewer motor vehicle crashes.

CONCLUSIONS

Although additional research is necessary, research results that are already available should be disseminated to stakeholders to enable the development of evidence-based school policies.

Keywords: adolescents, school health, sleep, school start times, policy

BACKGROUND

Sleepy adolescents have doubtlessly been a problem for a long time. However, it is only since the late 1980s that this issue has progressed from teachers' anecdotes of students falling asleep in class and parental complaints of daily struggles to get their children out of bed to scientific investigations into the causes and consequences of insufficient sleep.

Most adolescents may need at least 9 hours sleep per night¹⁻³; however, fewer than 8% of high school students report

getting this amount.⁴ Less than a third of students report 8 or more hours of sleep, and this proportion decreases as school grade level increases so that fewer than a quarter of high school seniors get this amount.⁴ Healthy People 2020, a national initiative designed to guide disease prevention and health promotion efforts to improve the health of all Americans (<http://www.healthypeople.gov/>), contains 4 objectives related to sleep, including one for adolescents.⁵ This objective is to "increase the proportion of students in grades 9 through 12 who get sufficient sleep (defined as 8 or more hours of sleep on an average school night)."

Insufficient sleep in children and adolescents has been shown to be associated with a wide variety of adverse outcomes in multiple aspects of their lives from poor mental and physical health to behavioral problems and poor academic grades. Insufficient sleep has been linked to excess weight,⁶⁻¹³ decreased physical activity,¹⁴ and increased food intake, possibly due to alterations in appetite-regulating hormones.¹² Results of investigations into longitudinal changes in weight attributable to sleep duration, however, have been mixed.^{10,15}

A solid body of literature has found that insufficient sleep in this young population is tied to poor mental health, including depression, depressive symptoms,^{8,16-22} and suicidal ideation.^{8,18,20,22-25} In addition, a few studies have shown an association between insufficient sleep and unhealthy risk behaviors including alcohol use,^{17,19,20,22} tobacco smoking,^{20,22} marijuana use,^{20,22} use of other illicit/prescription drugs,²² unhealthy weight control

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Other District Migrations to a later HS Start Time Reviewed

- Durham, NC
- Winston Salem/Forsyth, NC
- Montgomery County, MD
- Fairfax County, VA
- Anne Arundel, MD

Other Districts Reviewed

- Multi-Year runway used by districts making major Structure changes
- Stakeholders Input Forums & Surveys
 - Parents
 - Students
 - Teachers
 - Support Staff
 - Athletic Directors
 - Before & After School Programs

Options to Consider for Later High School Start Times

- Options presented today are not for the 2021-22 School Year
- 2021-22 Bell Recommendations will mirror 2020-21 with the two changes mentioned in previous presentation
- Options 1-3 presented today do not require significant additional funding

Options to Consider

- Current Structure Standard provides morning start times* of:
 - 7:25 am – High School – Tier 1
 - 8:15 am – Middle School – Tier 2
 - 9:15 am – Elementary School – Tier 3

*with exceptions

Options to Consider

- Option 1 - Keep existing standard tier assignments and shift all to later start time
- Option 2 - Shift ES/MS/HS standard tier assignments
- Option 3 - Combination of both

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Option 1 - Shift Existing 3-Tier Structure to Later Start Time*

| | <u>Current</u> | | <u>30 minute shift</u> | | <u>45 minute shift</u> | | <u>60 minute shift</u> | |
|-----------|----------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|
| HS | 7:25 AM | 2:20 PM | 7:55 AM | 2:50 PM | 8:10 AM | 3:05 PM | 8:25 AM | 3:20 PM |
| MS | 8:30 AM | 3:00 PM | 9:00 AM | 3:30 PM | 9:15 AM | 3:45 PM | 9:30 AM | 4:00 PM |
| ES | 9:15 AM | 3:45 PM | 9:45 AM | 4:15 PM | 10:00 AM | 4:30 PM | 10:15 AM | 4:45 PM |

*Buses target morning arrival 30 minutes prior to bell

*Ride times from morning stop pick-up to school to be considered too

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Option 1 - Shift Existing 3-Tier Structure to Later Start Time*

- Under Current Structure the earliest AM stop time = 5:13 AM
- Under Current Structure the latest PM stop time = 5:14 PM

| | <u>Current</u> | | <u>30 minute shift</u> | | <u>45 minute shift</u> | | <u>60 minute shift</u> | |
|-----------|----------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|
| HS | 7:25 AM | 2:20 PM | 7:55 AM | 2:50 PM | 8:10 AM | 3:05 PM | 8:25 AM | 3:20 PM |
| MS | 8:30 AM | 3:00 PM | 9:00 AM | 3:30 PM | 9:15 AM | 3:45 PM | 9:30 AM | 4:00 PM |
| ES | 9:15 AM | 3:45 PM | 9:45 AM | 4:15 PM | 10:00 AM | 4:30 PM | 10:15 AM | 4:45 PM |

*Buses target morning arrival 30 minutes prior to bell

Option 2 - Swap HS, MS, ES Standard Tier Assignments*

ES 7:30 AM 2:00 PM

MS 8:15 AM 3:00 PM

HS 9:15 AM 4:10 PM

*Buses target morning arrival 30 minutes prior to bell

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Option 3 - Swap HS, MS, ES Standard Tier Assignment & Possible Shift to Later Start

| | <u>30 minute shift</u> | | <u>45 minute shift</u> | | <u>60 minute shift</u> | | | |
|-----------|------------------------|---------|------------------------|---------|------------------------|---------|----------|---------|
| ES | 7:30 AM | 2:00 PM | 8:00 AM | 2:30 PM | 8:15 AM | 2:45 PM | 8:30 AM | 3:00 PM |
| MS | 8:15 AM | 3:00 PM | 8:45 AM | 3:30 PM | 9:00 AM | 3:45 PM | 9:15 AM | 4:00 PM |
| HS | 9:15 AM | 4:10 PM | 9:45 AM | 4:40 PM | 10:00 AM | 4:55 PM | 10:15 AM | 5:10 PM |

Other District Migrations to a later HS Start Time Reviewed

- Durham NC – Swapped Standard Tier Assignments – now ES/MS/HS*
- Winston Salem/Forsyth NC - Swapped Standard Tier Assignments – now MS/ES/HS*
- Montgomery County MD – Kept existing Tier Structure & shifted all start time 20 minutes later
- Fairfax County VA - Swapped Standard Tier Assignments – now MS/HS/ES*
- Anne Arundel MD – Kept existing Tier Structure & shifted school start times 13-15 minutes later

*with exceptions

Other District Migrations to a later HS Start Time Reviewed

- A bit about Fairfax's experience

The Fairfax County, Va., district, for example, took years of planning and discussions to change its start times, a plan that took effect this year. But even after seeking community input and consulting with the National Children's Hospital in Washington, the district's new start times fall short of the recommendations from the American Academy of Pediatrics.

Under the new schedule, high school start times shifted from 7:20 a.m. to between 8:00 and 8:10 a.m., and middle schools start earlier, shifting from 7:55 a.m. to 7:30 a.m. The move cost the 185,000-student district about \$5 million, according to the plan approved by the school board.

EdW

Teens Need More Sleep, But Districts Struggle to Shift Start Times



Tough Decisions

Shifting school times often causes conflicts with carefully crafted family schedules and the timing of afterschool activities and sports.



A student boards a bus bound for the School of Creative Studies, a magnet for grades 6-12 in Durham, N.C. Next year, most of the district's high schools will start around 9 a.m. to allow teens more time to sleep. — Justin Cook for Education Week

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In nearby Montgomery County, Md., parents and students campaigned for later high school start times for years, even holding "sleep-in" protests in pajamas and sleeping bags. But their efforts won only a modest change in schedules.

The 157,000-student district's board voted down a plan to move the earliest high school start times from 7:25 a.m. to 8:50 a.m., in part because of a \$3.9 million annual cost associated with the change. The board opted instead to shift the earliest bells to 7:45, giving teens 20 extra minutes of sleep.

Other District Migrations to a later HS Start Time Reviewed

- A bit about Durham's experience

Following the research, the school board first advised leaders to draft plans for starting high schools no earlier than 8:30 a.m. The district then surveyed parents and held focus groups to see how amenable families would be to various schedule changes, Denton said.

The plan the board eventually adopted required many elementary schools to start earlier to compensate for changes at the high school level without adding transportation costs. District leaders acknowledge it will take some time to get used to the changes, and there may be some bumps in the road.

EdW

Teens Need More Sleep, But Districts Struggle to Shift Start Times



The change wasn't easy in Durham, either, district leaders said.

Following the research, the school board first advised leaders to draft plans for starting high schools no earlier than 8:30 a.m. The district then surveyed parents and held focus groups to see how amenable families would be to various schedule changes, Denton said.

"It was almost 50-50 for a lot of the questions we asked," he said.

Parents were concerned about elementary school start times that wouldn't align with their work schedules and later end times for high school students, which would leave some younger siblings at home alone after they were dropped off.

But there are also families who will benefit from a school schedule change, Denton said, "and the reason you don't hear from those people is they're used to dealing with it."

"There are going to be logistical challenges no matter what," he added.

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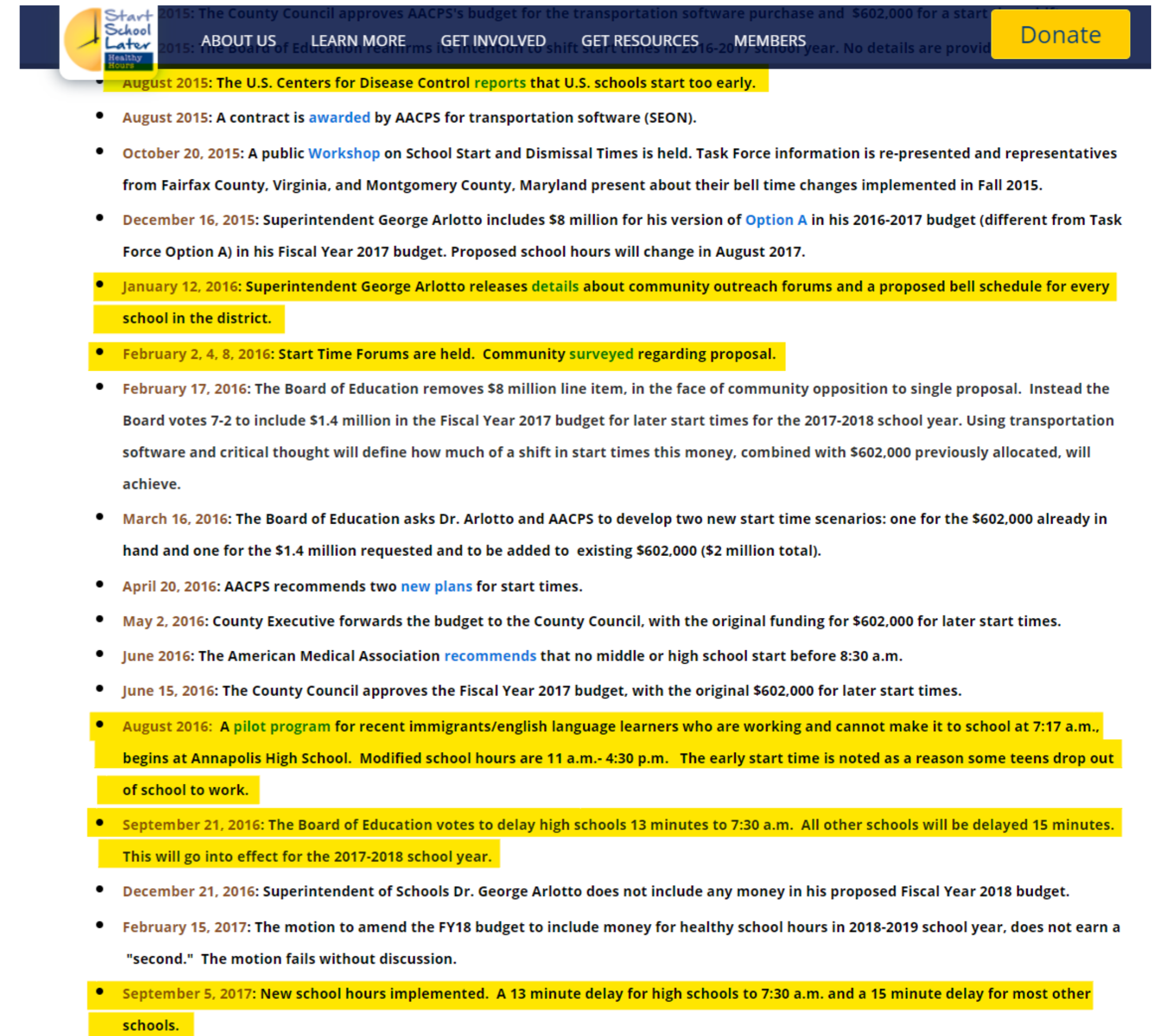
It's a change many districts say they don't have the capacity, resources, or parental will to make.

But authors of the recent international report say it's worth it.

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Other District Migrations to a later HS Start Time Reviewed

- A bit about Anne Arundel's experience



The screenshot shows the 'Start School Later' website with a navigation bar containing 'ABOUT US', 'LEARN MORE', 'GET INVOLVED', 'GET RESOURCES', and 'MEMBERS', along with a 'Donate' button. The main content area features a timeline of events:

- August 2015: The U.S. Centers for Disease Control reports that U.S. schools start too early.
- August 2015: A contract is awarded by AACPS for transportation software (SEON).
- October 20, 2015: A public Workshop on School Start and Dismissal Times is held. Task Force information is re-presented and representatives from Fairfax County, Virginia, and Montgomery County, Maryland present about their bell time changes implemented in Fall 2015.
- December 16, 2015: Superintendent George Arlotto includes \$8 million for his version of Option A in his 2016-2017 budget (different from Task Force Option A) in his Fiscal Year 2017 budget. Proposed school hours will change in August 2017.
- January 12, 2016: Superintendent George Arlotto releases details about community outreach forums and a proposed bell schedule for every school in the district.
- February 2, 4, 8, 2016: Start Time Forums are held. Community surveyed regarding proposal.
- February 17, 2016: The Board of Education removes \$8 million line item, in the face of community opposition to single proposal. Instead the Board votes 7-2 to include \$1.4 million in the Fiscal Year 2017 budget for later start times for the 2017-2018 school year. Using transportation software and critical thought will define how much of a shift in start times this money, combined with \$602,000 previously allocated, will achieve.
- March 16, 2016: The Board of Education asks Dr. Arlotto and AACPS to develop two new start time scenarios: one for the \$602,000 already in hand and one for the \$1.4 million requested and to be added to existing \$602,000 (\$2 million total).
- April 20, 2016: AACPS recommends two new plans for start times.
- May 2, 2016: County Executive forwards the budget to the County Council, with the original funding for \$602,000 for later start times.
- June 2016: The American Medical Association recommends that no middle or high school start before 8:30 a.m.
- June 15, 2016: The County Council approves the Fiscal Year 2017 budget, with the original \$602,000 for later start times.
- August 2016: A pilot program for recent immigrants/english language learners who are working and cannot make it to school at 7:17 a.m., begins at Annapolis High School. Modified school hours are 11 a.m.- 4:30 p.m. The early start time is noted as a reason some teens drop out of school to work.
- September 21, 2016: The Board of Education votes to delay high schools 13 minutes to 7:30 a.m. All other schools will be delayed 15 minutes. This will go into effect for the 2017-2018 school year.
- December 21, 2016: Superintendent of Schools Dr. George Arlotto does not include any money in his proposed Fiscal Year 2018 budget.
- February 15, 2017: The motion to amend the FY18 budget to include money for healthy school hours in 2018-2019 school year, does not earn a "second." The motion fails without discussion.
- September 5, 2017: New school hours implemented. A 13 minute delay for high schools to 7:30 a.m. and a 15 minute delay for most other schools.

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Other District Migrations to a later HS Start Time Reviewed

- A bit about Anne Arundel's experience

October 20, 2015: A public **Workshop** on School Start and Dismissal Times is held. Task Force information is re-presented and representatives from Fairfax County, Virginia, and Montgomery County, Maryland present about their bell time changes implemented in Fall 2015.

January 12, 2016: Superintendent George Arlotto releases **details** about community outreach forums and a proposed bell schedule for every school in the district.

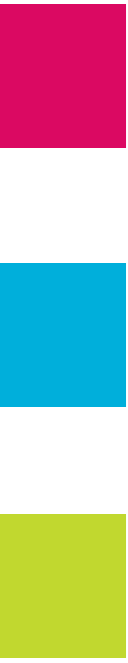
February 2, 4, 8, 2016: Start Time Forums are held. Community **surveyed** regarding proposal.

September 21, 2016: The Board of Education votes to delay high schools 13 minutes to 7:30 a.m. All other schools will be delayed 15 minutes. This will go into effect for the 2017-2018 school year.

Other District Migrations to a later HS Start Time Reviewed - Takeaways

- Stakeholder input & buy-in critical
- Requires a well-planned runway that may be long
- The transition is a School District & Community matter.....
- If the current 3-tier structure is maintained, the Transportation component might be one of the easier parts of the transition

Background on 3-Tier Structure



Background on 3-Tier Structure

- Current 3-Tier Structure provides morning start times* of
 - 7:25 am – High School
 - 8:15 am – Middle School
 - 9:15 am – Elementary School
- Provides structure to maintain effective use of resources

Background on 3-Tier Structure

- Wake County is not unique in utilizing 3-Tier Structure
- Durham, NC – 54 Schools
- Charlotte Mecklenburg, NC – 179 Schools
- Anne Arundel, MD – 126 Schools
- Montgomery, MD – 206 Schools

Single Tier System

- Why not just have all schools start & end at the same time?
- For example, an 8:30 am to 3:00 pm bell schedule
- Option 4 – Single Tier System?
- What would it take to implement?

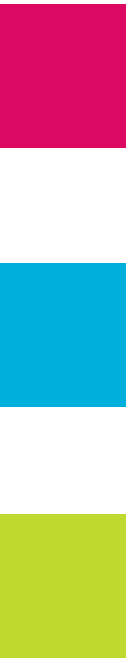
Single Tier System

- Shift to Single-Tier \approx triples key variable resources required for delivery
 - Yellow buses
 - Drivers
 - Mechanics
 - Parts
 - EC Vendor Vehicles
- If the Board would like to pursue an Option 4 – Single Tier Structure, significant additional funding will be required.

Single Tier Option will require

- Significant additional recurring funding
- Recruiting & retaining \approx 3 times the current bus driver staff levels
- Current Bus Driver recruiting challenges remain
- Single Tier Structure would reduce driver hours and total pay
- A shift below the threshold to receive Health Benefits would further impact hiring
- A 2-Tier Structure will have similar requirements but with a 2x rather than 3x impact

Considerations as we Review Options to Shift to a later High School Start time



Considerations as Options 1, 2, & 3 are Explored

- Implications for Staff & Parent's Schedules
- Implications for Before & After School Providers
- Implications for After School Activities (Athletics, Arts, Daycare Providers, Student Jobs)
- Initial modelling indicates similar levels no material budget implications
- Detailed modelling will be required to confirm
- Would ridership levels change?
- Implications for children of Transportation Staff?

Considerations as Options are Explored

- Other Districts have used a 1-3 year runway to consider & make significant Bell changes:
 - Stakeholder input & buy-in is critical
 - Significant Community Change
 - Stakeholder / Community Input Forums & Surveys to inform decisions

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Potential Draft Timeline

May/June/July/August – Additional information from staff on related implications for:

- Athletics
- Extra Curricular Activities
- Before, After Care Providers, & Other groups and activities impacted by a shift

May/June/July/August – Concurrent Board discussion of options to shift for HS later start time

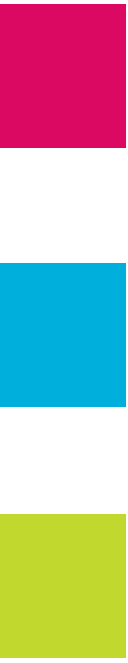
September/October – Stakeholder input via Community Forums & Surveys

November/December – Assessment of Stakeholder input & reporting out

January-March 2022 – Board Discussion & Decision Making on 2022-23 Bell Schedules

WCPSS Bell Schedule Structure - Options to Consider for a Later High School Start Time

Q & A





Review of Current Bell Schedule Structure & Considerations for Changes

March 16, 2021