

**ANDOVER PUBLIC SCHOOL  
SCHOOL START TIME EVALUATION**  
Frequently Asked Questions (FAQs)  
October 2019

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## **1. Why is Andover considering a change in school start times?**

Andover Public Schools continues to seek ways to improve student wellbeing, including physical health, mental health and academic performance. In that effort, an evaluation of school start times follows science-based recommendations from a significant number of professional medical and public health organizations that school not begin before 8:30 AM for middle and high school students.

## **2. What is the overall goal of reconsidering school start times?**

In August 2018, the Andover School Committee developed a set of guiding principles to direct the school start time evaluation. The stated goal is to make an overall positive impact on student wellbeing including physical health, mental health and academic performance.

Additionally, the guiding principles stated that the bell time evaluation needs to consider:

- Impact on family and staff schedules (work schedules, before/after school child care arrangements, homework)
- Impact on extracurricular activities (athletics, drama, music, clubs) and after-school jobs
- Cost to families and district (transportation costs, before/after school childcare costs)
- Consultation with the Andover Educator Association (AEA)
- Coordination with other Merrimack Valley Communities

## **3. What is the sleep problem Andover is trying to address?**

There is a biological shift in sleep cycle during adolescence, making it hard for middle and high school students to fall asleep much before 11:00 PM or wake up before 8:00 AM. This is a temporary biological change, roughly from the onset of puberty until the early 20s.

There is substantial evidence that this sleep shift, combined with early school start times for middle and high schools, has created a widespread health crisis where adolescents are perpetually sleep deprived. According to the American Academy of Pediatrics, “Insufficient sleep represents one of the most common, important, and potentially remediable health risks in children, particularly in the adolescent population, for whom chronic sleep loss has increasingly become the norm.”<sup>1</sup>

It’s not just the amount of sleep, but also the timing of sleep that is important. More REM sleep occurs toward the end of the night, and it is this type of sleep that plays an important role in learning and memory. The later adolescents sleep toward 8:00 AM, the more critical morning/REM sleep they get.

<sup>1</sup> American Academy of Pediatrics, 2014, School Start Times for Adolescents policy statement, <https://pediatrics.aappublications.org/content/pediatrics/134/3/642.full.pdf>

Scientists have concluded that the sleep and circadian “sweet spot” for middle and high school bell time is 8:30 AM or later in order to allow students to receive the amount of sleep they need at the right time. For links to some of these opinions, see question 6.

#### **4. Why would changing start times improve student wellbeing?**

Research has concluded that delaying school start times is an effective countermeasure to chronic sleep loss in adolescents, and has a wide range of potential benefits to students with regard to physical and mental health, safety, and academic achievement.<sup>2,3</sup>

As a summary, delaying middle school and high school start times has been shown to promote student health and performance,<sup>4</sup> is linked to higher attendance and graduation rates,<sup>5</sup> shows improvement in standardized test scores,<sup>6</sup> reduces injuries to student-athletes,<sup>7</sup> and reduces car accidents among teen drivers.<sup>8</sup>

With specific regard to mental health, Dr. Judith Owens said the following during her November 2018 presentation in Andover:

*“Delayed school start times are also associated with improvements in mood in virtually every study that has looked at mood and symptoms of depression. It is a highly statistically significant change for the better after you change school start times. Remember that third highest cause of mortality in adolescents is suicide.”*

The community of Andover is not unique in that anxiety, depression and other mental health concerns are identified with increasing frequency in middle and high school students. Considering a change in school start time to lessen this problem is a responsible step.

#### **5. What are some of the downsides to adolescents not getting enough sleep?**

Adolescent sleep loss poses a serious risk to the physical and emotional health, academic success, and safety of our nation’s youth.<sup>9</sup>

Adolescents who do not get enough sleep are more likely to:

<sup>2</sup> American Academy of Pediatrics, Adolescent Sleep Working Group, *School Start Times for Adolescents Policy Statement*, 2014

<sup>3</sup> Wheaton AG, 2016, *School Start Times, Sleep, Behavioral, Health and Academic Outcomes: A Review of the Literature*

<sup>4</sup> American Academy of Sleep Medicine, 2017

<sup>5</sup> Reuters Health, Feb 2017

<sup>6</sup> Wheaton AG, 2016, *School Start Times, Sleep, Behavioral, Health and Academic Outcomes: A Review of the Literature*

<sup>7</sup> Dr. Mathew Milewski, American Academy of Pediatrics Conference, 2012

<sup>8</sup> Dr. Wendy Troxel, *Why School Should Start Later for Teens* Ted Talk, 2017

<sup>9</sup> Dr. Judith Owens and American Academy of Pediatrics, 2014

- Engage in unhealthy risk behaviors such as drinking alcohol, smoking tobacco, and using illicit drugs; perform poorly in school; be overweight; suffer from depressive symptoms.<sup>10</sup>
- Sleeping less than 8 hours at night is associated with an almost threefold increased risk of suicide attempts.<sup>11</sup>
- Sleep deprivation lowers impulse control and reaction times. An estimated 27% of all drowsy-driving-related car crashes involve 16-19 year old drivers.<sup>12</sup>

## 6. Have any professional medical or public health organizations weighed in on this issue?

Yes, many professional medical and public health organizations have made the recommendation that middle and high schools should not start before 8:30 AM in order to provide adolescents more sleep.

Those organizations include: [American Academy of Child & Adolescent Psychiatry](#), [American Academy of Pediatrics](#), [American Academy of Sleep Medicine](#), [American Academy of Sleep Technicians](#), [American Medical Association](#), [American Psychological Association](#), [American Sleep Association](#), [American Thoracic Society](#), [Centers for Disease Control](#), [National Association of School Nurses](#), [National Parent Teacher Association](#), [National Sleep Foundation](#), [Society of Behavioral Medicine](#), and [Society of Pediatric Nurses](#).

## 7. If school starts later, won't students just stay up later?

No. Though wake up times are generally set with alarm clocks, sleep times are significantly influenced by biology. The two-hour biological shift in circadian rhythm is what pushes bedtime later for adolescents, more than lifestyle choices.

In her November 2018 presentation in Andover, Dr. Judith Owens summarized a review of 38 reports examining the association between school start times, sleep and behavioral health and academic outcomes among adolescent students by saying: When school start times are later, bedtimes remain about same but total sleep time is increased.

Additionally, in one study by Dr. Owens at an independent school, bedtimes actually shifted earlier by about 20 minutes. When school start was delayed by a half hour, students were getting 50 minutes of additional sleep on school nights. Anecdotally, students said they felt so much better sleeping they were motivated to go to bed earlier. They also reported that because they were better rested and more alert, they could get through their homework faster, and were able to get to bed earlier.

Dr. Wendy Troxel agrees, saying in her popular [Ted Talk, Why school should start later for teens](#), “To the naysayers who may think that if schools start later, teens will just stay up

<sup>10</sup> CDC, Aug 2015 and others

<sup>11</sup> Liu X, *Sleep and adolescent suicidal behavior*. *Sleep*, 2004

<sup>12</sup> AAA Foundation, 2018

later, the truth is, their bedtimes stay the same, but their wake-up times get extended, resulting in more sleep.”

### **8. Can't we just have teenagers turn off their phones so they can get enough sleep?**

Limiting electronics and other external distractions at bedtime is always a good idea, but that will not eliminate the biological conditions that keep adolescents awake.

Scientists have explained, “students cannot force themselves to fall asleep at a time early enough to get an adequate night’s rest... sleep researchers have found that adolescents stay awake later largely for biological reasons.”<sup>13</sup> Additionally, because an adolescent’s body continues to secrete melatonin until at least 8:00 AM, “simply going to bed earlier does not necessarily make someone less tired in the early morning hours.”<sup>14</sup>

Sleep scientist Dr. Wendy Troxel puts it bluntly in her popular [Ted Talk, Why school should start later for teens](#): “There are many factors contributing to this (sleep) epidemic, but a major factor preventing teens from getting the sleep they need is actually a matter of public policy. Not hormones, social lives or Snapchat.”

### **9. If we push start times later, aren't we doing a disservice by not preparing students for future jobs and the real world?**

For everyone, getting the sleep your body biologically needs is a responsible way to prepare for daily activities. This sometimes requires responding to natural changes in human development.

Adolescence isn't the only time sleep patterns change. For example, it is common for toddlers to require two naps a day. Disallowing naps in pre-school does not help prepare children for kindergarten.

Similarly, moving middle and high school start time responds to the temporary shift in adolescent sleep patterns by accounting for this normal phase of development.

### **10. I get that adolescents need more sleep, but won't a change potentially come at the expense of elementary students?**

Realistically, due to the cost of buses, Andover schools will need to have staggered start times, meaning some schools will begin earlier than others. Today, middle and high schools start earlier than elementary schools, but some options that allow adolescents more sleep could have elementary schools starting earlier than they do now.

<sup>13</sup> <https://www.aeaweb.org/articles?id=10.1257/pol.3.3.62>

<sup>14</sup> <https://www.apa.org/pi/families/resources/school-start-times.pdf>

Sleep scientists have spent less time studying the impact of school start times on elementary school age children than adolescents and medical professionals have not identified chronic sleep deprivation as a public health crisis for both sets of students.

However, in her November 2018 presentation to the Andover community, Dr. Judith Owens from Boston Children's Hospital summarized the available research on early start times for elementary school students. She said the following:

*“They (elementary school students) in general, as opposed to adolescents, are ‘morning larks’ in terms of their circadian preference. Their natural tendency is to go to bed earlier and to wake up earlier.*

*“Now, they’re also affected by competing priorities for sleep, like electronic exposure, homework and other kinds of issues that help to contribute to insufficient sleep.*

*“But I would contend - as opposed to adolescents - elementary school students are biologically, environmentally and socially more amenable to manipulation of bedtime. In other words, you can move their bedtimes earlier to accommodate an earlier wake time and earlier school start times.*

*“So, is there a sweet spot for elementary school students? We don’t know nearly as much about that as we do about high school students. But, overall the data suggests that somewhere between 7:30 and 9 is probably an optimal range for school start times in elementary schools.”*

For more information on the potential impact of earlier start times for elementary-aged children, see Appendix A.

## **11. Are any other Massachusetts school districts considering changing start time to allow adolescents more sleep?**

Yes. There are districts that have already changed start times, plan to change start times, or are evaluating a change in start times including:

[Acton-Boxboro](#) (2018/19), [Arlington](#) (2020/21), [Ashland](#) (2017/18), [Barnstable/Monomoy](#), (2017/18), [Bellingham](#) (2017/18), [Belmont](#) (2019/20), [Beverly](#) (2017/18), [Burlington](#) (2018/19), [Concord-Carlisle](#) (2018/19), [Dighton-Rehoboth](#), [Dover-Sherborn](#) (2020/21), [Duxbury](#) (2016/17), [Franklin](#) (2020/21 target), [Grafton](#) (2020/21), [Holliston](#), [Hanover](#), [Lexington](#) (2020/21 target), [Masconomet](#), [Mashpee](#) (2019/20), [Melrose](#) (2018/19), [Nauset Regional](#) (2012/13), [Needham](#) (2004/05), [Newton](#), [Peabody](#), [Reading](#) (2019/20), [Scituate](#) (2019/20), [Sharon](#) (2010/11), [Stoneham](#) (2018/19), [Sudbury](#), [Watertown](#) (2018/19), [Wayland](#) (2019/20), [Westborough](#) (2018/19), [Weston](#) (2019/20), [Wilmington](#), [Winchester](#) (2018/19).

School year of change or planned change is indicated, where applicable. This is not a comprehensive list.

For additional information about existing or planned bell times for these districts, see Appendix B.

**12. Have there been any public forums or ways for the Andover community to get more information and provide feedback on these issues?**

Yes. There have been and continue to be multiple opportunities to provide feedback on the issue of start times:

- A. **FORUMS** In fall 2018, APS hosted Dr. Judith Owens, Director of Sleep Medicine at Boston Children’s Hospital and Professor of Neurology at Harvard Medical School. Dr. Owens conducted a presentation on the consequences of insufficient sleep, as well as the evidence of an 8:30 a.m. school start time as a way to optimize the health of adolescents. She also took questions from the audience.

The full Start Time Working Group held two community forums in Spring 2019. The forums began with a brief presentation and then encouraged participants to provide feedback and/or ask questions of the Working Group members.

You can view each of these forums at the following links:

- [Presentation by Dr. Judith Owens](#) in Andover on November 13, 2018
- [Community Forum](#) at the Doherty auditorium on May 22, 2019
- [Community Forum](#) at the West Middle auditorium on June 11, 2019

The next community forum is planned for Wednesday, October 16th at 7pm in the Andover High School media center.

- B. **MEETINGS AT SCHOOLS** Members of the Start Time Working Group have also been invited by school community groups to discuss the topic of start times at each of Andover’s 10 schools. This has included PTO/PAC meetings, meetings of student government, and other meetings coordinated by Principals.
- C. **SURVEYS** Three surveys were widely distributed in Spring 2019, one for parents (preK to 12), one for students (grades 4 to 12), and one for faculty and staff. The initial readout of survey results was discussed at the July 17, 2019 School Committee meeting, and further analysis was compiled and presented at the September 18, 2019 School Committee workshop.

You can watch a [replay of the School Committee workshop held to discuss survey data](#).

An analysis of survey data is also online: [analysis of survey responses](#), along with the raw survey data: [student survey](#), [parent & guardian survey](#), [staff & administrator survey](#)

- D. **WEBSITE AND EMAIL** A [start times webpage](#) provides up-to-date information on the project initiative. Updates have been provided in regular email communications from the



district. Additionally, [SchoolStartTimes@andoverma.us](mailto:SchoolStartTimes@andoverma.us) is an active email address for community feedback and questions.

### **13. Has there been a survey conducted? What were the results?**

Three surveys were widely distributed in Spring 2019, one for parents (preK to 12), one for students (grades 4 to 12), and one for all faculty and staff. The initial readout of survey results was discussed at the July 17, 2019 School Committee meeting, and further analysis was compiled and presented at the September 18, 2019 School Committee workshop.

You can watch a [replay of the School Committee workshop held to discuss survey data](#).

An analysis of survey data is also online: [analysis of survey responses](#), along with the raw survey data: [student survey](#), [parent & guardian survey](#), [staff & administrator survey](#)

At a high level, the survey showed that:

- Parents are more likely to support a change in school start times if they currently have children in middle school or high school
- The percentage of students saying they are tired in class increases dramatically as students get older
- As students get older, they are less likely to feel they have enough time for homework, activities, and enough sleep
- As students get older, the amount of weeknight sleep decreases while the amount of weekend sleep remains relatively constant
- As the discrepancy between weekend and weeknight sleep grows with age, so too does student support for in change in school start time
- Middle school and high school teachers are less likely than elementary teachers to identify students who appear alert and ready to learn
- More students self-report they are tired at school, particularly in later grades, than teachers and parents identify
- Teachers, especially teachers of high school students, are more likely to favor a change in school start times when their students do not appear to be alert and ready to learn
- Parents are less likely to support a change in school start times if they believe doing so will impact their child's ability to participate in after-school activities
- Parents of Middle and High Schoolers who favor the status quo believe their children get more sleep than do parents who favor a change
- Middle and High School students get less sleep than their parents think they do
- Most parents who responded to the survey are at least somewhat familiar with the current research and discussion about changing school start times. However,

elementary and middle school parent respondents who are unfamiliar with this topic are less likely to support a change

#### **14. Are Andover students really tired in class?**

Surveys conducted by the Start Time Working Group asked questions to help gauge how tired students are or appear to be, and the responses indicated:

- As students age, they have more homework and get less sleep. 7.4% of fourth graders reported being tired in class, and the number rose at each grade level, with 68.1% of 11th graders reporting the same.
- The number of students saying they do not feel alert and awake when they arrive at school rises from 12.5% in fourth grade to 63.8% in 11th grade.
- High school teachers (53.7%) and middle school teachers (63.8%) are less likely than elementary teachers (90.8%) to identify students who appear alert and ready to learn at the beginning of the school day

#### **15. How can I get up to speed quickly on the issue of adolescent sleep?**

If you only have 10 minutes, watch this [Ted Talk, Why Schools Should Start Later for Teens](#) by Wendy Troxel.

If you have 20 minutes, watch this [presentation at the start of the May 2019 community forum](#) by the Start Time Working Group.

If you have 45 minutes, watch the [presentation from sleep expert Dr. Judith Owens](#), Director of Sleep Medicine at Boston Children's Hospital can professor of Neurology at Harvard Medical School. (Forward to 5 minutes into the replay.)

If you have more time, FAQ question 6 links to position statements from multiple professional medical and public health organizations that summarize issues related to sleep.

#### **16. What are the preliminary start time options that have been developed?**

Initial cost-neutral options have been developed that use the existing number of buses, and drivers, and maintains the same bus routes as this current school year. These options that have been circulated within the community for feedback are:

1. Status Quo: Does not make a change from existing 2019/20 bell times.
2. Shift: Elementary continues to begin after middle & high schools, with middle & high starting around 8:30 AM. This would put elementary school start at approximately 9:30 AM (without investment in additional buses or any changes in existing bus routes and schedules).

3. Flip: Elementary begins *before* middle & high schools, with middle & high starting around 8:30 AM. This would put elementary school start at approximately 7:30 AM (without investment in additional buses or any changes in existing bus routes and schedules).

To estimate the transportation impact to your student in these no-cost scenarios, you can take the time they currently arrive home and then add or subtract accordingly based on the bell time of each scenario compared to current bell time at your school.

The Start Time Working Group continues to look for ways to refine these options, including through work underway to analyze how additional investment in transportation could improve scenarios (see questions 17 and 18).

### **17. What additional work is still being done to refine and/or solidify start time options?**

To improve upon and further develop the initial no-cost options for start times, the district independently contracted with a school transportation specialist to examine whether and how our current bus routes can be optimized. This, along with the Start Time Working Group's own continued study, may identify options that eliminate B runs, shorten bus routes and/or compress interval time between tiers of busing. ("B runs" operate at most schools, when a bus does a relatively short run bringing students to or from school, then does a second longer run servicing the same school. The overall impact is that it extends the amount of time it takes for all students to be transported.)

Specifically, the transportation consultant has been asked to:

- Optimize routes in the current scenario (using existing bell times, same number of buses)
- Optimize bell schedule with elementary before middle/high (flip) and with same number of buses
- Optimize bell schedule with elementary before middle/high (flip) and eliminate "B runs"
- Optimize bell schedule with middle/high before elementary (status quo or shift) and eliminate "B runs"
- Optimize bell schedule sequencing elementary then middle then high (decouples bell time for middle & high)
- Compress bell time between elementary and secondary levels (45 min vs current 60 min)

This work is expected to be completed in late October 2019, and will inform recommendations of the Start Time Working Group to the full School Committee in November 2019.

### **18. Can you summarize how Andover currently uses buses for student transportation?**

Transportation of students is expensive, and each year Andover Public Schools spends approximately \$2 million on regular education and in-town special education transportation to Andover's ten public and three private schools.<sup>15</sup> An additional \$365,000 per year from student bus fees (grades 7 to 12 at both public and private schools) is used to offset expenses.

Andover currently runs 35 buses, each of which is "tiered," meaning that each bus transports to and from multiple schools each day. Generally, a bus will first transport to middle and/or high schools, then transport to elementary and/or private schools. Buses are generally at capacity, with a seat available for every eligible elementary student and every student who buys a bus pass, whether it is used every day or not.

Of the 35 buses, 15 have 3 runs and 25 have 2 runs to and from schools each day. For example, bus 27 delivers students to AHS and Doherty, then to Montessori and Pike, then to Bancroft every morning.

Most schools (Sanborn, South, High Plain, WestEl, Wood Hill, West Middle and Andover High) have "B runs" where a bus does a relatively short route to or from school, then goes back out for a longer run servicing the same school. This extends the overall time it takes to transport students to one "tier" of schools. In the 2019/20 school year, there are 8 buses that do multiple "B runs" for an individual school.

Additionally, Andover runs mid-day buses to transport half-day kindergarten students home.

### **19. If start times change, will some children need to wait at the bus stop in the dark?**

Even with no change to start times, some students are waiting for the bus in the dark already. Current bus routes pick up middle and high school students as early as 6:40 am. In the winter of 2018/19, there were roughly 6 to 11 days that these middle and high school students were on Andover school buses before civil twilight.

It would be best if zero students were at bus stops before civil twilight, which could happen if all schools move later (the "shift" option). Otherwise, the cost of significantly improving the current situation may be logistically unrealistic for all 180 days of school. In order to evaluate this concern, parents and students have been asked about bus stops at multiple school meetings with Start Time Working Group members. Their feedback indicates it is common in Andover for parents to accompany elementary students to bus stops, but middle and high school students generally stand without adults.

<sup>15</sup> By law, Andover Public Schools is required to transport Andover students to private schools within the town of Andover. Eight buses (bus 19, bus 22, bus 25, bus 27, bus 28, bus 29, bus 30, and bus 33) have routes that transport Andover students to and from Pike, Montessori and/or St. Augustine schools daily.

## 20. Can everyone in Andover start school at or around the same time?

This would be possible if Andover were to make a significant investment in transportation – estimated at an additional \$2 million to roughly double the regular and in-town special education bus fleets. Such a large increase to the school department budget may not be feasible, in which case Andover schools would continue to have staggered start times.

Today, there is one hour between two school “tiers,” with high and middle school starting at 7:44/7:45am and elementary schools starting at 8:45am. If optimizing bus routes is possible and/or the district is able to invest in more buses (at approximately \$65,000 per bus), there is potential to reduce this hour, compressing the time between school starting bells. The Start Time Working Group is looking at this with the help of a transportation consultant.

## 21. Is there realization that start time changes would impact my child care situation?

Yes. The Start Time Working Group has heard from families with many different types of child care arrangements. Under the current schedule, some families rely on before-school care, some rely on after-school care, and some rely on both. A change in elementary times, in particular, could require families to eliminate or add hours of child care depending on their individual circumstances.

Andover currently has options for in-school before- and after-school child care, including the SHED Kid’s Club before school program<sup>16</sup> (currently running at all five elementary schools) and Andover Recreation’s Kid Care after school program<sup>17</sup> (currently running at four of five elementary schools).

## 22. Has there been consideration to the impact of after school activities, including athletics?

Depending on each revised start time scenario, school could let out earlier or later than it does today for some students, allowing more or less time for after school activities and athletics.

[Results of the surveys](#) conducted by the Start Time Working Group confirmed that, under the current schedule, as students get older, they are less likely to feel they have enough time for homework, activities and get enough sleep. 11.6% of fourth graders say they cannot fit everything into a day, and this rises each year with 58.7% of 11th graders saying they do not have enough time for homework, activities and sleep.

With respect to sports, there has been research conducted on the impact sleep has on injury and performance. [A study by the American Academy of Pediatrics](#) concluded lack of sleep is associated with increased risk of injury in adolescent athletes and a Stanford Study found that [athletes who sleep more perform better](#). The [Journal of Pediatric Orthopedics](#) showed that

<sup>16</sup> More information on the SHED before school program in elementary schools can be found at: <https://www.shedchildrenscampus.org/before-school/>

<sup>17</sup> More information on the Andover Recreation after school program in elementary schools can be found at: <https://andoverrec.com/kidcare/index>

young competitive athletes who slept eight or more hours each night were 68% less likely to be injured than athletes who regularly slept less.

In consideration of the “health and safety of student athletes,” the [Massachusetts Interscholastic Athletic Association \(MIAA\) issued a statement](#) in 2016 fully supporting of the [American Academy of Pediatrics policy statement](#) for later high school start times. The MIAA said they support “education reform to include changes to later start times for high schools across our state.”

Additionally, Athletic Directors across Massachusetts regularly adjust for a number of factors from weather to EEE risk levels to release times of opponent schools.

### **23. Has there been consideration of how homework impacts student sleep?**

Homework competes for time along with other after school activities, and [results of the surveys](#) conducted by the Start Time Working Group confirmed that as students age, they have more homework and get less sleep. Most 4th, 5th and 6th graders reported less than an hour of homework per night; most 7th & 8th graders had 1 to 2 hours per night, and high school students generally reported 2 to 3 hours per night. However, the number of students reporting greater amounts of homework (more than 3 hours per night) rises from 4.1% in 7th grade to 23.9% in 11th grade.

There is sleep research, including one study by Dr. Judith Owens at an independent school, that shows students who are better rested are more alert and productive when they do their homework. When homework can be done in less time, students are able to get to bed earlier.

### **24. Has there been consideration of how traffic would be impacted by a start time change?**

Yes. The Start Time Working Group met with representatives from the Andover Police Department to understand traffic patterns through town, including peak travel periods. In summary, there is belief that the heaviest normal traffic (not resulting from accidents or construction) is caused mostly by vehicular traffic to schools, with Shawsheen Road (Andover High and West Middle) and Beacon Street (West Elementary) being the most problematic during school drop off times. It is expected that school start time will continue to cause traffic peaks, no matter the time of first bell.

Additionally, it is a well-recognized problem that the Andover High School / West Middle School campus – where nearly 40% of Andover’s students arrive daily – is overcrowded by vehicular traffic during morning drop off, creating problematic traffic on Shawsheen and Red Spring Roads. Traffic studies have been conducted to analyze the issue and adjustments have been made over the years. The long-term solution will likely include a high school facility project and significant site work to improve traffic flow and parking. However, increasing bus ridership would help in the near-term.

Many students and parents have shared that they drive to school in the mornings in order to get additional sleep and push departure time from home as late as possible. If bus transportation to the high school (and middle schools, which share the same buses) picked up

at later times, it seems likely ridership would increase, potentially cutting down on the number of cars on the road and into the high school campus for drop off.

## **25. Who has been working on this effort in Andover?**

The School Start Time Working Group was charged by the School Committee with the following tasks:

- Develop potential options for later start times for secondary students
- Provide objective information to the School Committee as to the benefits and drawbacks of various options
- Provide wide stakeholder feedback to support the School Committee in evaluating the feasibility of and receptivity to potential options
- Develop a report on the feedback and proposed options for changing school start time

The working group is facilitated by Assistant Superintendent for Teaching and Learning Sandy Trach and includes principals at each level (Pamela Lathrop/Michelle Costa, Patrick Bucco and Philip Conrad), as well as representative school district stakeholders (School Committee member Shannon Scully, AEA representative Kerry Costello, Transportation coordinator Mary Lu Walsh and Communications Director Nicole Kieser). The working group typically meets twice each month.

## **26. Which stakeholders have met with the Start Time Working Group?**

In addition to reaching the community through the mechanisms described above, the School Start Time Working Group has met with community stakeholders including the Andover Police and traffic professionals, the AHS Athletic Director, Andover Recreation after-school childcare and the APS facility rental coordinator, as examples. Draft school start time options were shared and implications discussed.

This process of meeting with community stakeholders continues to serve as a valuable means of insight into understanding school start time scenarios and potential impacts.

## **27. What is the timeline of the school start time evaluation?**

The school start time evaluation has been underway in Andover since May 2018 and has included these important activities:

- May 2018: School Committee start time workshop including a presentation on the issue of later school start times by an Andover High Student and discussion of lessons learned in exploring start times with Burlington Superintendent, Eric Conti
- August 2018: School Committee adopts Guiding Principles for start time evaluation
- October 2018: Start Time Working Group formed, meeting regularly approximately every two weeks

- November 2018: Community forum at Doherty auditorium with sleep expert, Dr. Judith Owens, Director of Sleep Medicine at Boston Children's Hospital and Professor of Neurology at Harvard Medical School
- March to April 2019: Informational coffees and school meetings (PACs, PTOs, student government, etc.)
- May to June 2019: Surveys for students, faculty and staff, and parents/guardians.
- May 2019: Community forum in the Doherty auditorium
- June 2019: Community forum in the West Middle auditorium
- Summer 2019: Analysis of survey results
- September 2019: Survey results shared and discussed at School Committee workshop
- October 2019: Community forum in the Andover High School media center, additional informational coffees and meetings, transportation analysis completed
- November 2019: Start time options presented to School Committee for public deliberations and potential decision



### **Appendix A: Additional information on the potential impact of earlier start times for elementary-aged children**

This is not a comprehensive list but, rather, links to Internet-accessible information on this topic.

- Anecdotal information from a local district that used the “flip” option

<https://www.wgbh.org/news/2018/02/01/news/what-earlier-school-start-times-mean-young-brains>

- “School start time change did not decrease total amount of sleep.”

School start time changes and sleep patterns in elementary school students, Erica R. Applman and others

<https://www.sciencedirect.com/science/article/abs/pii/S2352721815000522>

- “The results suggest that the association between school start time and elementary students’ academic achievement in Wyzata Public Schools is small to non-existent, particularly when controlling for student demographic characteristics, grade, and school.”

The association between elementary school start time and student’s academic achievement in Wyzata Public Schools, Danielle N. Dupuis

<https://files.eric.ed.gov/fulltext/ED574378.pdf>

- “Findings support the growing body of research showing that early school start times may influence student learning but offer some of the first evidence that this influence may occur for elementary schoolchildren and depend on school characteristics.”

Earlier School Start Times as a Risk Factor for Poor School Performance: An Examination of Public Elementary Schools in the Commonwealth of Kentucky, Dr. Peggy Keller and Dr. Joseph Buckhalt and others

<https://www.apa.org/pubs/journals/releases/edu-a0037195.pdf>

along with critique of the same study:

The problem with interpreting low base rate behaviors, Dr. Wendy Troxel

[https://www.sleephealthjournal.org/article/S2352-7218\(17\)30080-3/fulltext](https://www.sleephealthjournal.org/article/S2352-7218(17)30080-3/fulltext)

- “If elementary students are not affected by later start times, as my data suggest (albeit not definitively), it may be possible to increase test scores for middle school students at no cost by having elementary schools start first.”

Do Schools Begin Too Early, Finley Edwards and Marty West on the EdNext Podcast

<https://www.educationnext.org/do-schools-begin-too-early/>

- Pre-adolescent students have the same degree of focus at 7am that adolescent students have at 8am.

How the Brain Learns: The Blog, Dr. David Sousa

<https://howthebrainlearns.wordpress.com/2011/10/17/impact-of-circadian-rhythms-on-schools-and-classrooms/>

- “While research on start times for young students is sparse, it has shown elementary school students do not benefit from a later start time. Some experts suggest academic achievement of elementary school students would not be adversely impacted by an earlier start time, as young students are alert earlier in the day than adolescent students and start school at a later time than secondary students.”

Impact of School Start Time on Student Learning, Hanover Research

<https://www.dist50.net/cms/lib/IL.02213585/Centricity/Domain/232/StartTime3.pdf>

- “School districts can improve performance while maintaining the current distribution of start times by moving classes earlier for younger children and later for older children.”

Rise and Shine: The Effect of School Start Times on Academic Performance from Childhood Through Puberty, Jennifer Heissel and Samuel Norris

[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2674256](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2674256)

**Appendix B: How other Massachusetts districts have adjusted start times**

District	New Start Times Implemented	Elementary Bell Times	Middle School Bell Times	High School Bell Times
<a href="#">Acton-Boxboro</a>	2018/19	8:50/3:20	8:00/2:36	8:00/2:47
<a href="#">Arlington</a>	2020/21 planned (bell times not yet final)	evaluation ongoing	8:30/2:56	8:30/2:56
<a href="#">Ashland</a>	2017/18	(1) starts at 7:55 (1) starts at 8:50	8:15/2:40	8:20/2:45
<a href="#">Barnstable/Monomoy</a>	2017/18	7:45/2:15	8:45/3:15	8:45/3:15
<a href="#">Bellingham</a>	2017/18	8:00/2:30	9:15/3:45	8:30/3:15
<a href="#">Belmont</a>	2019/20	(1) 8:40/2:50 (1) 8:50/3:00	7:55/2:25	8:00/2:25
<a href="#">Beverly</a>	2017/18	7:55/2:00	8:45/3:00	8:15/2:33
<a href="#">Burlington</a>	2018/19	(1) 8:10/2:15 (1) 8:35/2:40	7:35/1:55	8:35/3:05
<a href="#">Concord-Carlisle</a>	2018/19	9:00/3:30	(1) 8:15/2:30 (1) 8:25/2:40	8:00/2:41
<a href="#">Dover-Sherborn</a>	2020/21 planned	7:50 or later/2:15 or later	no later than 8:35	no later than 8:35
<a href="#">Duxbury</a>	2016/17	(1) 7:45/2:00 (1) 9:10/3:25	8:20/2:42	8:20/2:47
<a href="#">Franklin</a>	2020/21 target	evaluation ongoing		
<a href="#">Grafton</a>	2020/21 target	evaluation ongoing		
<a href="#">Holliston</a>		(1) 7:30/1:53 (1) 8:50/3:15	8:10/2:33	8:10/2:43
<a href="#">Hanover</a>		8:30/3:00	7:15/2:15	7:55/2:40
<a href="#">Lexington</a>	2020/21 planned	evaluation ongoing		

<b>District</b>	<b>New Start Times Implemented</b>	<b>Elementary Bell Times</b>	<b>Middle School Bell Times</b>	<b>High School Bell Times</b>
<a href="#">Masconomet</a>		8:30-8:45/ 3:00-3:10	7:35/2:14	7:35/2:14
<a href="#">Mashpee</a>	2019/20	9:05/3:35	8:30/3:00	8:30/3:00
<a href="#">Melrose</a>	2018/19	8:03/2:10	8:15/2:41	8:15/2:41
<b>Nauset Regional</b>	2012/13	7:45/2:00	8:30/2:45	8:35/2:57
<b>Needham</b>	2004/05	(4) 8:20/2:45 (1) 8:45/3:10	(1) 7:40/2:10 (1) 7:50/2:20	8:00/2:35 (M-Th) 8:35/2:35 (F)
<a href="#">Reading</a>	2019/20	(2) 8:25/2:45 (3) 8:15/2:45	7:50/2:30	8:30/3:02
<a href="#">Scituate</a>	2019/20	8:55/3:25	7:35/2:41	7:45/2:18
<a href="#">Sharon</a>	2010/11	8:35-8:45/ 3:05-3:15	7:40/2:10	8:05/2:40
<b>Stoneham</b>	2018/19	8:03/2:10	8:15/2:41	8:15/2:41
<a href="#">Sudbury</a>	2020/21	7:55/2:55	8:30/3:10	8:25/3:14
<a href="#">Watertown</a>	2018/19	8:15/2:30	8:30/3:00	8:30/3:05
<a href="#">Wayland</a>	2019/20	7:55/2:25	8:40/3:15	8:35/3:10
<a href="#">Westborough</a>	2018/19	7:45/2:02	8:10/2:37	8:10/2:37
<a href="#">Weston</a>	2019/20	8:00/2:20	8:45/3:15	8:45/3:15
<a href="#">Wilmington</a>	2021/22 target	evaluation ongoing		
<a href="#">Winchester</a>	2018/19	8:10/2:20	8:30/3:07	8:30/3:07