

Final School Start Time Recommendation from Radnor Township School District Sleep and School Start Time Committee

April 5, 2019

After completing additional work and gathering additional feedback since the Initial Recommendation was offered on Nov. 13, 2018, the RTSD Sleep and School Start Time Committee now offers a Final Recommendation of a later school start time at Radnor High School (from 7:35 a.m. to 8:30 a.m.) and a later school end time (from 2:27 p.m. to 3:10 p.m.)

To meet the high school start time of 8:30 a.m. as advised by major medical organizations, the committee is recommending changes to the middle and elementary school start times to meet the district's bus transportation needs. The committee recommends a later school start time at Ithan, Radnor and Wayne elementary schools (from 9 a.m. to 9:07 a.m.) and a later school end time (from 3:30 p.m. to 3:40 p.m.). The committee also recommends a change to the Radnor Middle School schedule, from 8 a.m.-3 p.m. to 7:50 a.m.-2:40 p.m.



FINAL RECOMMENDATION (April 5, 2019)

THIS THIS SECTION

- 1. REVIEW OF INITIAL RECOMMENDATION
- 2. REVIEW OF ADDITIONAL SCHEDULES INVESTIGATED BASED ON FEEDBACK
- 3. REVIEW OF FINAL RECOMMENDATION
- 4. TRANSPORTATION INFORMATION
- 5. METRICS FOR EVALUATION
- 6. OTHER CONSIDERATIONS

This addendum is current as of April 5, 2019 and may be updated at any time based on additional information.

Overview

Since the Radnor Township School District Sleep and School Start Time Committee* presented its initial recommendation at the November 13, 2018 School Board Curriculum Committee meeting, there has been significant progress in refining the recommendation as a result of extensive additional research and discussion with various individuals and groups. This addendum to the report outlines the work completed since November 13, 2018, the resulting action steps, and offers a final school start time recommendation.

Why Change School Start Times?

There is scientific evidence that insufficient sleep adversely affects teens.

Health	<ul style="list-style-type: none">• Depressed Mood• Anxiety• Suicidal Ideation• Decreased Emotional Regulation• Increased Weight Gain and Obesity• Increased Substance Use and Abuse
Safety	<ul style="list-style-type: none">• Increased Motor Vehicle Crashes• Increased Athletic Injuries• Increased Risk-Taking Behaviors• Increased Physical Fights/Bullying
Performance	<ul style="list-style-type: none">• Decreased Concentration• Decreased Problem-Solving Ability• Difficulty with Memory• Poorer Cognitive Efficiency• Decline in Academic Performance

*As the study entered its next stage after the initial recommendation was offered on Nov. 13, 2018, the committee chose to omit "Adolescent" from its name going forward to better reflect the study's inclusion and review of schedules at RTSD middle and elementary schools.



Initial Recommendation Offered on Nov. 13, 2018: Delay Radnor High School Start By 55 Minutes

Level	Start Time	End Time	Length of Day
High	8:30 a.m.	3:04 p.m.	6 hours 34 mins
Middle	8:00 a.m.	3:00 p.m.	7 hours
Elementary	9:15 a.m.	3:45 p.m.	6 hours 30 minutes

WHY DEVELOPED Allowed high school students to go to school 55 minutes later, which meets sleep recommendations put forth by major medical organizations. Also did not impact RMS schedule.

WHY ELIMINATED

- Subsequent research after recommendation regarding transportation led to determination that option would require a minimum of 8 additional buses and 8 additional drivers as well as contracted athletic transportation.
 - Est. cost \$1.12 million
- Subsequent parent feedback after recommendation regarding concerns with RHS and RMS students being required to ride the same bus
- Subsequent teacher and parent feedback concerning 15-minute later start and end times for elementary students



Current Schedule
RHS: 7:35 a.m.-2:27 p.m.
RMS: 8:00 a.m.-3:00 p.m.
ES: 9:00 a.m.-3:30 p.m.

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For more information and updated FAQs on the study of sleep and school start times in RTSD, visit www.RTSD.org/sleep.

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Additional Options Explored Based on Feedback: Concurrent Start for High and Middle School

Level	Start Time	End Time	Length of Day
High	8:15 a.m.	2:45 p.m.	6 hours 30 mins
Middle	8:15 a.m.	3:10 p.m.	7 hours
Elementary	9:00 a.m.	3:30 p.m.	6 hours 30 mins

WHY DEVELOPED:

- Concurrent two-tier bus runs in the morning would avoid the necessity to expand cost of contracted athletic busing
- Both RHS and RMS start later

WHY ELIMINATED:

- Completed research regarding transportation led to determination that option would require a minimum of 8 additional buses and 8 additional drivers
 - Est. cost \$1.12 million



- RHS and RMS students would be required to ride the same bus in morning
- RHS start time does not meet sleep recommendations from major medical organizations

Current Schedule
RHS: 7:35 a.m.-2:27 p.m.
RMS: 8:00 a.m.-3:00 p.m.
ES: 9:00 a.m.-3:30 p.m.

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Each of the following five bell schedules was developed in response to stakeholder feedback after the Initial Recommendation (above) was offered on Nov. 13, 2018.

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Additional Options Explored Based on Feedback: Elementary Starting First

Level	Start Time	End Time	Length of Day
High	8:15 a.m.	2:45 p.m.	6 hours 30 mins
Middle	8:45 a.m.	3:30 p.m.	6 hours 45 mins
Elementary	7:45 a.m.	2:15 p.m.	6 hours 30 mins

WHY DEVELOPED Feedback from elementary teachers indicated the initial recommendation of a 3:45 p.m. end time for elementary students was too late when considering the educational and developmental needs of younger students. A schedule option with earlier elementary start and end times was thus developed.

WHY ELIMINATED

- Parent concerns about elementary students waiting for buses in the morning during civil twilight
- Parent concerns about the possibility of the need for additional after-school care
- Does not meet the sleep recommendations for high school students per major medical organizations
- Parents felt this schedule might be shifting a sleep issue from one age group to another and negatively impact the elementary level
- Would require 4 additional buses and 4 additional bus drivers
 - Est. cost \$560,000
- Impact on RMS athletic competitions



Current Schedule
RHS: 7:35 a.m.-2:27 p.m.
RMS: 8:00 a.m.-3:00 p.m.
ES: 9:00 a.m.-3:30 p.m.

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Additional Options Explored Based on Feedback: "Push" Start Time 20 Minutes at Each School

Level	Start Time	End Time	Length of Day
High	7:55 a.m.	2:47 p.m.	6 hours 52 mins
Middle	8:20 a.m.	3:20 p.m.	7 hours
Elementary	9:20 a.m.	3:50 p.m.	6 hours 30 mins

WHY DEVELOPED:

- Maintains three-tier busing system and does not increase contracted services for busing to RHS athletic competitions
- Option mirrors later school start time schedules put into place by other districts (Phoenixville, Unionville, under consideration in Tredyffrin-Easttown)

WHY ELIMINATED:

- RHS start time does not meet sleep recommendations from major medical organizations
- Significant impact to RMS athletics
- Would require 1 additional bus and 1 additional driver
 - Est. cost \$140,000
- Later end to elementary school day would result in some students getting home close to 4:45 p.m. or later



Current Schedule
RHS: 7:35 a.m.-2:27 p.m.
RMS: 8:00 a.m.-3:00 p.m.
ES: 9:00 a.m.-3:30 p.m.

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4 Additional Options Explored Based on Feedback: "Flip" Elementary and Secondary Start Times

Level	Start Time	End Time	Length of Day
High	8:40 a.m.	3:15 p.m.	6 hours 35 mins
Middle	9:10 a.m.	4:00 p.m.	6 hours 50 mins
Elementary	8:00 a.m.	2:30 p.m.	6 hours 30 mins

WHY DEVELOPED:

- Maintains three-tier busing system and does not increase contracted services for busing to RHS athletic competitions
- Both RHS and RMS start times exceed sleep recommendations from major medical organizations
- Feedback from elementary teachers indicated the initial recommendation of a 3:45 p.m. end time for elementary students was too late when considering the educational and developmental needs of younger students. A schedule option with earlier elementary start and end times was thus developed.

WHY ELIMINATED:

- Significant impact to RMS athletics with 60-minute later end time
- Middle school students would arrive home late in day
- Would require minimum of 4 additional buses and 4 additional drivers
 - Est. cost \$560,000
- Significant impact on before- and after-school care, with the possibility of more parents needing care in the afternoon
- Impact on township youth sports program held at RMS
- Major schedule shift for elementary and middle school families
- Most disruptive change for families at all levels of all schedules considered



Current Schedule
 RHS: 7:35 a.m.-2:27 p.m.
 RMS: 8:00 a.m.-3:00 p.m.
 ES: 9:00 a.m.-3:30 p.m.

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5 Final Recommendation: "Secondary Shuffle"

Level	Start Time	End Time	Length of Day
High	8:30 a.m.	3:10 p.m.	6 hours 40 mins
Middle	7:50 a.m.	2:40 p.m.	6 hours 50 mins
Elementary	9:07 a.m.	3:40 p.m.	6 hours 33 mins

WHY DEVELOPED:

- Maintains three-tier busing system and does not increase contracted services for busing to RHS athletic competitions
- RHS start time meets sleep recommendations from major medical organizations
- Minimal impact on both middle and elementary school schedules

WHY RECOMMENDED:

- Three-tier busing ensures separate bus rides for RHS and RMS students
- Addresses parent concerns regarding elementary students going to school too early
- One of the most cost-effective options: 0-2 buses and 2 bus drivers needed
 - Est. cost \$120,000
 - Right-sizing current bus fleet
- Does not expand on busing costs for RHS athletics in the afternoon
- Does not negatively impact scheduling of RMS athletic competitions



Current Schedule
 RHS: 7:35 a.m.-2:27 p.m.
 RMS: 8:00 a.m.-3:00 p.m.
 ES: 9:00 a.m.-3:30 p.m.

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How the Final Recommendation Addresses Feedback Received and Research Conducted

- Homework being reviewed through the RTSD Wellness Committee
- Includes retention of Community Period at current time in RHS bell schedule
- Includes retention of Homeroom at RHS
- Includes scheduling of "Fitness for Athletes" at the end of the RHS school day to mitigate lost instruction
- Three-tier busing ensures separate bus rides for RHS and RMS students
- Addresses parent concerns regarding elementary students going to school too early
- Maintains before-school sports practices at RHS while allowing for more sleep for participating student-athletes
- Contains metrics for evaluation
- Establishes more efficient bus routes
- Reduces time in RHS bell schedule without reducing instructional time
- Provides opportunity to have one-hour delays instead of two-hour delays for weather
- Includes establishment of healthy guidelines in use of technology



Comparing Bell Schedules

CURRENT BELL SCHEDULE

Level	Start Time	End Time	Length of Day
High	7:35 a.m.	2:27 p.m.	6 hours 52 mins
Middle	8:00 a.m.	3:00 p.m.	7 hours
Elementary	9:00 a.m.	3:30 p.m.	6 hours 30 mins

INITIAL RECOMMENDED BELL SCHEDULE (11/13/18)

Level	Start Time	End Time	Length of Day
High	8:30 a.m.	3:04 p.m.	6 hours 34 mins
Middle	8:00 a.m.	3:00 p.m.	7 hours
Elementary	9:15 a.m.	3:45 p.m.	6 hours 30 mins

FINAL RECOMMENDED BELL SCHEDULE (3/26/19)

Level	Start Time	End Time	Length of Day
High	8:30 a.m.	3:10 p.m.	6 hours 40 mins
Middle	7:50 a.m.	2:40 p.m.	6 hours 50 mins
Elementary	9:07 a.m.	3:40 p.m.	6 hours 33 mins

Difference in TOTAL MINUTES from Current Bell Schedule

- High School: -18 mins
- Middle School: 0 mins
- Elementary: 0 mins

Difference in START TIME in Minutes from Current Bell Schedule

- High School: +55 mins
- Middle School: 0 mins
- Elementary: +15 mins

Difference in END TIME in Minutes from Current Bell Schedule

- High School: +37 mins
- Middle School: 0 mins
- Elementary: +15 mins

Difference in TOTAL MINUTES from Current Bell Schedule

- High School: -12 mins
- Middle School: -10 mins
- Elementary: +3 mins

Difference in START TIME in Minutes from Current Bell Schedule

- High School: +55 mins
- Middle School: -10 mins
- Elementary: +7 mins

Difference in END TIME in Minutes from Current Bell Schedule

- High School: +43 mins
- Middle School: -20 mins
- Elementary: +10 mins



TRANSPORTATION INFORMATION

Earliest Pick-Up Time from Home Bus Stop (Morning)

Current Schedule

- RHS: 6:40 a.m.
- RMS: 7:09 a.m.
- ES: 8:12 a.m.

Under Final Recommendation

- RHS: 7:38 a.m.
- RMS: 7:04 a.m.
- ES: 8:15 a.m.

Approximate Bus Drop-Off Times at School (Morning)

Current Schedule

- RHS: 7:03-7:18 a.m.
- RMS: 7:35-7:55 a.m.
- ES: 8:45-8:55 a.m.

Under Final Recommendation

- RHS: 8:05-8:20 a.m.
- RMS: 7:25-7:40 a.m.
- ES: 8:50-9:00 a.m.

Approximate Latest Bus Pick-Up Times at School (Afternoon)

Current Schedule

- ES: 3:45 p.m.

Under Final Recommendation

- ES: 3:52 p.m.

Latest Drop-Off Times from School to Bus Stop (Afternoon)

Current Schedule

- ES: 4:23 p.m.

Under Final Recommendation

- ES: 4:30 p.m.

Current Average Bus Ride

RHS AM = 26 minutes

RHS PM = 24 minutes

RMS AM = 36 minutes

RMS PM = 26 minutes

IES AM = 30 minutes

IES PM = 28 minutes

RES AM = 28 minutes

RES PM = 29 minutes

WES AM = 22 minutes

WES PM = 25 minutes

Average Bus Rides Under Final Recommendation

RHS AM = 28 minutes

RHS PM = 24 minutes

RMS AM = 25 minutes

RMS PM = 27 minutes

IES AM = 28 minutes

IES PM = 30 minutes

RES AM = 28 minutes

RES PM = 29 minutes

WES AM = 22 minutes

WES PM = 25 minutes ¹⁵

METRICS FOR EVALUATION

Student Survey Data (May of Each Year)

Parent Survey Data (May of Each Year)

RHS Student and Parent Focus Groups
(Several Meetings Throughout School Year)

Ongoing Collection of Feedback
(sleep@rtsd.org)

Nurse Visits

Attendance Data (Absences and Tardiness)

Social Worker/School Psychologist
Referrals

Athletic Injuries, Including Concussions

School Climate Survey (Annually)

Review of Historical PA Youth Survey Data
(Every two years)

Review of Historical Early Dismissal Data



Possible Period-By-Period Bell Schedules Under Final Recommendation

RADNOR HIGH SCHOOL

8 Period Days (Mondays, Tuesdays, Fridays)

	<u>Begin</u>	<u>End</u>			
Homeroom	8:30 AM	8:36 AM			
Period 1	8:40 AM	9:21 AM			
Period 2	9:25 AM	10:06 AM			
Period 3	10:10 AM	10:51 AM			
A	10:55 AM	11:25 AM			
Period 4	11:29 AM	11:36 AM			
B	11:40 AM	12:10 PM			
Period 5	12:14 PM	12:21 PM			
C	12:25 PM	12:55 PM			
Period 6	12:59 PM	1:40 PM			
Period 7	1:44 PM	2:25 PM			
Period 8	2:29 PM	3:10 PM			

On 8 period days, lunch is assigned and appears on student schedules.

A Lunch	Period A4	Period A4
Period 4B	B Lunch	Period B5
Period 5C	Period 5C	C Lunch

4 Block Days (Wednesdays, Thursdays)

	<u>Begin</u>	<u>End</u>	
Homeroom	8:30 AM	8:36 AM	
Block 1 or 2	8:40 AM	10:00 AM	
Community Pd.	10:04 AM	10:24 AM	
A	10:28 AM	10:58 AM	Lunch
Block 3 or 4	11:02 AM	11:07 AM	Block 3 or 4
B	11:10 PM	11:40 PM	
Block 3 or 4	11:43 PM	11:48 PM	
C	11:52 PM	12:22 PM	
Block 5 or 6	12:26 PM	1:46 PM	
Block 7 or 8	1:50 PM	3:10 PM	

BOLD times indicate when bells will ring

RMS Bell Schedule 2018-2019

	6 th Grade	7 th Grade	8 th Grade
Advisory	8:00-8:35	8:00-8:35	8:00-8:35
Period 1	8:38 – 9:25 ENCORE	8:38 – 9:25	8:38 – 9:25
Period 2	9:28 – 10:15	9:28 – 10:15 ENCORE	9:28 – 10:15
Period 3	10:18-11:05	10:18-11:05 ENCORE	10:18-11:05
Period 4	11:08 – 11:55 ENCORE	11:08 – 11:55	11:07 – 11:37 LUNCH
Period 5	11:57 – 12:27 LUNCH	11:58 – 12:45	11:39 – 12:26
Period 6	12:29 – 1:16	12:47 – 1:17 LUNCH	12:29 – 1:16 ENCORE
Period 7	1:19 – 2:06	1:19 – 2:06	1:19 – 2:06 ENCORE
Period 8 *Extended Learning Time (ELT) and SOS	2:09-3:00 Days 1&5 Pd. 2	2:09-3:00 Days 2&6 Pd. 3	2:09-3:00 Days 3&7 Pd. 6

*Extended Learning Time – Students should report to the class period listed based on the daily cycle day.

**Core and Encore classes are 47 minutes

RMS administration has convened a committee that has begun the process of developing a new RMS schedule that would be implemented should the Final Recommendation be approved. This proposed schedule is scheduled to be presented at the April 23, 2019 School Board Business Meeting.



Why Change?

Delayed school start times are associated with positive outcomes.

- Increased sleep duration
- Fewer motor vehicle crashes
- Improved attendance
- Less tardiness
- Reduced daytime sleepiness
- Less falling asleep in class
- Fewer depressive symptoms
- Some evidence of increase in GPAs, SATs
- No adverse impact on academics
- Decreased health center visits

Final Recommendation: Other Considerations

Homework

The Wellness Committee will continue its review of homework in the district.

Bus Transportation

Two additional buses and two additional drivers may be required at an estimated \$120,000 as well as the right-sizing of the current fleet. Should additional buses be needed, two spare buses could be parked in the lot RTSD owns near RES.

The RTSD Transportation Department has worked to travel the proposed routes during the times outlined in the final recommendation. This provided the department important data that helped to confirm route lengths during the times of day buses are proposed to run. When investigating ways to make the bus runs more efficient, a determination was made that many secondary students do not walk to bus stops. To streamline bus routes, the district plans to increase neighborhood stops for secondary students.

Earliest Pick-Up Times from Home Bus Stop (Morning)

Current Schedule

- RHS: 6:40 a.m.; RMS: 7:04 a.m.; Elementary: 8:12 a.m.

Under Final Recommendation

- RHS: 7:38 a.m.; RMS: 7:04 a.m.; Elementary: 8:15 a.m.

Approximate Bus Drop-Off Times at Schools (Morning)

Current Schedule

- RHS: 7:03-7:18 a.m.; RMS: 7:35-7:55 a.m.; Elementary: 8:45-8:55 a.m.

Under Final Recommendation

- RHS: 8:05-8:20 a.m.; RMS: 7:25-7:40 a.m.; Elementary: 8:50-9 a.m.

Earliest Pick Up Times from Home Bus Stop (Morning)

Current Schedule

- RHS: 6:40 a.m.; RMS: 7:04 a.m.; Elementary: 8:12 a.m.

Under Final Recommendation

- RHS: 7:38 a.m.; RMS: 7:04 a.m.; Elementary: 8:15 a.m.

Approximate Bus Drop-Off Times at Schools (Morning)

Current Schedule

- RHS: 7:03-7:18 a.m.; RMS: 7:35-7:55 a.m.; Elementary: 8:45-8:55 a.m.

Under Final Recommendation

- RHS: 8:05-8:20 a.m.; RMS: 7:25-7:40 a.m.; Elementary: 8:50-9 a.m.

Latest Elementary Drop-Off Time at Bus Stop (Afternoon)

Current Schedule

- 4:23 p.m.

Under Final Recommendation

- 4:30 p.m.

Approximate Latest Bus Pick-Up Times at Elementary Schools (Afternoon)

Current Schedule

- 3:45 p.m.

Under Final Recommendation

- 3:52 p.m.



CURRENT AVERAGE BUS RIDE	AVERAGE BUS RIDE UNDER FINAL RECOMMENDATION
Radnor High School	
RHS A.M.: 26 Minutes	RHS A.M.: 28 Minutes
RHS P.M.: 24 Minutes	RHS P.M.: 24 Minutes
Radnor Middle School	
RMS A.M.: 36 Minutes	RMS A.M.: 25 Minutes
RMS P.M.: 26 Minutes	RMS P.M.: 27 Minutes
Ithan Elementary School	
IES A.M.: 30 Minutes	IES A.M.: 28 Minutes
IES P.M.: 28 Minutes	IES P.M.: 30 Minutes
Radnor Elementary School	
RES A.M.: 28 Minutes	RES A.M.: 28 Minutes
RES P.M.: 29 Minutes	RES P.M.: 29 Minutes
Wayne Elementary School	
WES A.M.: 22 Minutes	WES A.M.: 22 Minutes
WES P.M.: 25 Minutes	WES P.M.: 25 Minutes



Homeroom at Radnor High School

All students will continue to be assigned to a homeroom to ensure they have a place to go at the beginning of the school day; during “Homeroom Day” community periods; and other times as needed. During the feedback sessions, some students, parents and several RHS faculty members expressed the opinion that homeroom was an important part of the culture at RHS. In addition to providing time for distribution of passes, watching morning announcements, and taking attendance, homeroom provides a needed check-in for students and allows them a positive start to the school day. While all students benefit from homeroom, this time is especially critical for freshmen.

Community Period at Radnor High School

Based on feedback from students and teaching staff, Community Period will remain at its current time at RHS, between 1st and 3rd periods on Wednesdays and between 2nd and 4th periods on Thursdays. This reduces potential conflicts between athletics and club meetings. Moving Community Period to the end of the day as proposed in Initial Recommendation provided a buffer for students who had athletic games. The use of “Fitness for Athletes” (see below) during 8th period will help address the concern regarding loss of instructional time.

“Fitness for Athletes”

“Fitness for Athletes” is a Physical Education (PE) choice for upperclass RHS students that helps alleviate the conflict with after-school sports practices and competitions. While there is no way to guarantee that every RHS student will be enrolled in a given class during a specific period of the day, a concerted effort will be made at the outset of the scheduling process to prioritize Fitness for Athletes into the schedules of upperclass athletes whose sport requires early dismissal.

Athletes in selected sports would be scheduled into Fitness for Athletes during 8th period. RHS administration and the Athletic Department spent considerable time examining the sports that would require regular early dismissals. Sports such as golf (at the behest of country clubs for tee times), RHS crew teams (which practice off site and must contend with daylight), and the ice hockey teams (constrained by available ice time) will have priority. Other sports identified due to constraints associated with RHS facilities or those of other Central Athletic League schools, such as baseball, that play on fields without lights, will also be scheduled into Fitness for Athletes. Some sports, such as girls and boys varsity basketball, varsity football, and varsity wrestling, do not need to be scheduled into Fitness for Athletes because their games and competitions are played in the evenings.

Students in identified sports would be permitted to leave when they have practice or games during their established season that conflict with Fitness for Athletes. Scheduling athletes in Fitness for Athletes the last period of the day will allow students to be dismissed up to 45 minutes prior to the end of the school day. The goal is to be flexible and mitigate lost instructional time, however RHS is not looking to extend sports seasons beyond their historical and established start and end times, or let students out of class when no conflict exists. When conflicts occur during the established season, athletes will be excused from Fitness for Athletes and will not have to make up the class. RHS administration and the Athletic Department will assist in facilitating communication between the PE Department and athletic coaches on days that students are to be dismissed. When a sport is out of season, and when conflicts do not occur during the season, students are expected to attend PE.



Instructional Time and Radnor Middle School

Secondary schools in Pennsylvania are required to have 990 hours of instructional time each year. As part of the exploration of a possible change in start times, the length of the RMS school day was examined. Currently, students attending RMS are slated to receive 1059.8 hours of instruction each year -- 69.8 hours over the 990 required by the Pennsylvania Department of Education. For some schedule options considered, reducing the instructional day up to 10 minutes was an option to provide flexibility with busing. By reducing the RMS bell schedule by 10 minutes daily, the annual instructional time would be reduced by 30 hours, giving RMS students 1029.8 hours of instructional time per school year. The instructional day for faculty members would remain as is, allowing for added time for planning, parent communication, grading, and other important professional responsibilities.

Duty Day for Employees at the Elementary Schools

The duty day for teachers at the elementary schools would not change. Under the proposed schedule, the elementary student day would start at 9:07 a.m. and end at 3:40 p.m. Staff would adjust their start times accordingly.

Duty Day for Employees at Radnor Middle School

Under the initial recommendation, consideration was given to staggering professional staff start and end times to ensure adequate supervision of students due to the previously proposed two-tier transportation model. This staggered start time model is not needed under the current proposal. The duty day for RMS employees will be adjusted based on the student start times.

Duty Day for Employees at Radnor High School

With the later start of the school day, the duty day for an RHS teacher would be changed with minimal disruption. Currently, teachers at RHS work from 7:15 a.m.

to 2:45 p.m. or from 7:30 a.m. to 3 p.m. Under the proposed schedule, teachers would work from 7:40 a.m. to 3:10 p.m. or from 7:55 to 3:25 p.m. Para-professionals would have their hours adjusted to work when students are in the building. Secretarial hours would be examined on a case-by-case basis to ensure appropriate coverage before, after, and during the school day.

Before School Sports at Radnor High School

Currently, the RHS swimming and diving teams practice before school during the swim season. Practices are optional and typically begin at 5:15 a.m. or 5:30 a.m., although occasionally diving practices begin at 6 a.m.. RHS teams take turns with the use of the pool, and morning practices typically run 75 to 120 minutes. In the months of January and February, there were 40 school days, and 12 practices during the week before the start of the school day. The RHS Athletic Director met with the coaches of the swimming and diving teams to discuss options that would allow athletes to remain competitive, and at the same time ensure they are getting the medically recommended sleep. Through these discussions, the committee recommends allowing the morning practices to continue with the understanding that the start of practices would be pushed back to account for the delayed start at RHS. Practices would continue to be 75 to 120 minutes in length.

Updated Instructional Time Calculation for Radnor High School

Proposed 8 Period Day

- Homeroom (6 mins) + Periods 1-8 (41 mins x 8 = 328) = 334 mins

Proposed 4 Block Day

- Homeroom (6 mins) + Comm Period (20 mins) + Blocks 1-4 (80 mins x 4) = 346 mins

Total Minutes

- 334 mins x 3 days a week = 1,002 minutes
- 346 mins x 2 days a week = 692 minutes
- 1,002 mins + 692 mins = 1,694 mins ÷ 5 days a week = 338.8 average mins per day
- 338.8 mins per day average x 180 school days = 60,984 mins
- 60,984 mins ÷ 60 mins in an hour = 1,016.4 hours per year (990 hours required)



Elementary Before- and After-School Care Services

As part of the study, the district was in consultation with the 2018-19 provider of before- and after-school care for RTSD elementary families, Family Support Services (FSS). During the study, the district conducted further exploration into before- and after-school care providers and, as a result, located and entered into a partnership with “Right At School” that will begin the 2019-20 school year.

The program provided by Right At School will take place in a student’s home elementary school directly before and after the school day. The program provides a curriculum focusing on student enrichment through activities led by highly trained educators. Details on Right At School can be found at www.RTSD.org.

Custodial Services Work Day

During the feedback sessions, custodial staff members raised the concern that due to their use of public transportation, if their work day at RHS ended later they would be unable to utilize public transportation after work. After review of custodial job functions, it was determined that no change would be necessary.

RMS Students Who Take Math at RHS in the Morning

Over the past 10 years, a small sub-section of students from RMS have taken Mathematics classes at RHS in the morning. This practice does not happen every year. In some years, these RMS students have taken math at RMS. Due to the fact that the RHS school day has historically started prior to the RMS school day and the RMS Advisory period in the morning provided a buffer, the years when RMS students took Math at RHS caused them to miss minimal class time. Under the final recommendation, RMS students would take Math at RMS.

Much More Than Starting Later

While much attention has been rightfully given to the calls from major medical organizations for later school start times, these groups also offered other strong recommendations for helping students get more sleep. Regardless of whether Radnor Township School District changes school start times, the following actions will be taken or examined as a means to improve student sleep health.

Educating Parents and Students

- Healthy Technology Use
- Time Management & Finding Balance
- Sleep Environment Tips

School- and District-Based

- Review of Homework
- Sleep Hygiene education
- Consider limit on daily school activity/practice time
- Consider prohibition of school-sponsored activities in school buildings after certain evening hours



Feedback from the Experts

FROM DR. JUDITH OWENS:

*“Your Committee's **extremely thoughtful and inclusive decision-making process** that examined a wide range of options for school start times, as well as the most appropriate timeline of events, were **exemplary**. Your detailed explanations of the pros and cons of the various approaches in the report clearly delineated your thought processes, and the final recommendation represents a **true best-case scenario** given the complexity of the issues and the various factions/agendas involved. **This should serve as a model for other school districts across the country.**”*

FROM DR. WENDY TROXEL:

*“Congratulations on your **thoughtful and systematic process** over the past several years to engage the Radnor community, present the science concerning adolescent sleep and the conflict with early school start times, and **effectively problem-solve to arrive at the solution that works for most students.**”*

UPDATED TIMELINE

IN THIS SECTION

1. UPDATED STUDY TIME: AUGUST 2015-APRIL 2019

This report is subject to change at any time. This section of this report is current as of April 5, 2019.

Representatives from Radnor Township School District have been informally and formally involved in discussions and meetings focused on the subjects of sleep and school start time since at least 2015. Activities conducted by the district include:

- Discussion during at least nine School Board and Committee meetings since May 2016
- At least 15 meetings of the RTSD Sleep and School Start Time Committee since Nov. 2017
- Three separate surveys for community members, RHS students, and private and parochial schools
- Five separate community and student/staff presentations featuring national sleep expert Dr. Judith Owens in Feb. 2016 and 2019 and national sleep expert Dr. Wendy Troxel in March 2018
- At least 14 separate feedback/information sessions for staff, parents and community members since Nov. 2018
- The creation of a dedicated webpage (www.RTSD.org/sleep) and an email address for ongoing community feedback (sleep@rtsd.org) in Sept. 2015
- Outreach to potentially impacted community partners and groups, including Central League representatives, before- and after-school care providers, and the Delaware County Intermediate Unit
- Conversation and collaboration with school districts that have changed school start times and districts that are also investigating a possible school start time change
- Retention of third-party bus-routing company to assist in determining greatest efficiency of bus runs

A complete timeline of activities related to the study of sleep and school start time in RTSD can be found on the following pages.



2014-2016

2017

2018

August 2014 The American Academy of Pediatrics publishes research finding sufficient sleep integral to adolescent health	Oct. 2015-Present Representatives from the Leagues of Women Voters, RTSD, and parent groups from Lower Merion, Tredyffrin-Easttown, Radnor, and West Chester form the Regional Adolescent Sleep Needs Committee (RASNC) . RASNC has met every month during the school year since formed. Current members represent 14 school districts	Feb. 21 & 22, 2016 Nationally renowned pediatric sleep expert Dr. Judith Owens visits RTSD to speak to staff, students, parents and community members	June 2016 The initial district-supported Adolescent Sleep Needs Task Force holds its first meeting	June 27, 2017 Superintendent Kenneth E. Batchelor, who joined RTSD in February 2017, names exploration of student sleep needs and school start time an RTSD 2017-18 Priority Project	Sept. 19, 2017 School Board Curriculum Committee meeting: Announcement made that RTSD Adolescent Sleep and School Start Time Committee will be created	Oct. 26-Nov. 8, 2017 Survey open for Radnor community on adolescent sleep and school start time; survey includes application to apply to be member of the to-be-formed Adolescent Sleep and School Start Time Committee	Dec. 14, 2017 Meeting of the Adolescent Sleep and School Start Time Committee: Members separate into subcommittees focused on areas of study such as Academics and Transportation	Jan. 11, 2018 Meeting of Adolescent Sleep and School Start Time Committee: Review of RTSD mission statement and purpose of committee; discussion about research and possible impacts on community; identification of questions for FAQ and pros and cons of a later school start time; discussion of other strategies that address student sleep	Feb. 22, 2018 Meeting of Adolescent Sleep and School Start Time Committee: Final review of Teen Sleep Habits Survey; review of FAQs; break-out groups discuss scenarios: no later start time/plan to address student sleep needs and later school start time/associated logistics	March 14-28, 2018 Teen Sleep Habits Survey given to RHS students in English classes
August 2015 Former RTSD Superintendent Dr. Michael Kelly announces at the School Board Business Meeting that the district will be taking a look at the issue of adolescent sleep needs and school start time	Dec. 2015 With support from local school districts such as RTSD and T/E, RASNC finalizes planning for a public event featuring Dr. Judith Owens , a nationally renowned pediatric sleep expert	May 24, 2016 At School Board meeting, RTSD affirms commitment to support efforts to ensure students get sufficient sleep		Aug. 15, 2017 RTSD Curriculum Committee names "Adolescent Sleep" a planned agenda item for certain 2017-18 Curriculum Committee Meetings	Sept. 26, 2017 At a planning meeting, district staff reiterate the district's ongoing commitment to the topic of student sleep and school start time and share a timeline and action plan for the study. Previous members involved in the initial Adolescent Sleep Needs Task Force are encouraged to apply to become a member of the new committee	Nov. 29, 2017 First meeting of the Adolescent Sleep and School Start Time Committee: Introduction of members; review of the RTSD mission statement; discussion about committee's purpose; and initial work to establish study areas		Jan. 25, 2018 Meeting of the Adolescent Sleep and School Start Time Committee: Members of RASNC discuss the organization's background and guiding principles and conduct Q&A. Committee members review questions for a Teen Sleep Habits survey for RHS students, develop FAQs, and receive an update on the creation of dedicated website and email address	March 12 & 14, 2018 Pediatric sleep expert Dr. Wendy Troxel visits RTSD to present to area parents and community members (March 12) and RHS students in grades 9-12 (March 14)	



2018

April 26, 2018 Meeting of Sleep and School Start Time Committee: Overview of progress to date; review of Teen Health Habits Survey data; determination to evaluate at least four options ranging from no change in school start time to a 90-minute adjustment	May 7, 2018 Meeting of Adolescent Sleep and School Start Time Committee: Evaluation of different start time scenarios; discussion of items impacted by a change in start time, including transportation, schedules, sports, community youth sports, and clubs/activities	May 21, 2018 Meeting of Adolescent Sleep and School Start Time Committee: Decision made to ask RHS and RTSD administrators to follow up to evaluate the scenarios to determine impact on RTSD as well as community as a whole	August 28, 2018 School Board Business Meeting: Presentation on progress and next steps for the Adolescent Sleep and School Start Time Committee as part of larger presentation on the 2017-18 RTSD Goals and Priority Projects	Week of Sept. 10, 2018 Discussions with RTSD school administrators regarding impact of possible time change on all District schools	Oct. 8, 2018 Draft of Adolescent Sleep and School Start Time Committee Report and Initial Recommendation made available to members of Adolescent Sleep and School Start Time Committee for review prior to Oct. 10 meeting.	Nov. 1, 2018 Meetings with RTSD staff members to review and discuss Adolescent Sleep and School Start Time Committee Report and Initial Recommendation	Nov. 8, 2018 Meetings with RHS students to discuss Adolescent Sleep and School Start Time Committee Report and Initial Recommendation	Nov. 13, 2018 Curriculum Committee Meeting of the Whole School Board: Adolescent Sleep and School Start Time Committee Report and Initial Recommendation presented	Nov. 28, 2018 • Meeting of the Sleep and School Start Time Committee • Feedback session with Radnor High School students	Dec. 4, 2018 Feedback session with Radnor High School staff	Dec. 7, 2018 • Feedback session with Ithan Elementary School staff • Feedback session with Radnor Middle School staff
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April 12, 2018 Meeting of the Adolescent Sleep and School Start Time Committee: Update from RASNC regarding a webinar with Dr. Ali Haghani, an expert in the field of transportation, in which committee members participated; overview of Teen Sleep Habits Survey, which was completed by 848 RHS students; further discussion on start time scenarios	May 8, 2018 Curriculum Committee Meeting of the Whole School Board: Presentation on the progress of the Adolescent Sleep and School Start Time Committee, including purpose of committee; committee members; objectives of the study; summary of meetings and events; summary of results of the Teen Sleep Habits Survey; and next steps	Week of August 27, 2018 Meetings held with RTSD Transportation Department to evaluate all start time scenarios	Sept. 7, 2018 Timeline developed for release of final Adolescent Sleep and School Start Time Committee proposal on whether a later school start time in RTSD is feasible and recommended. Initial Recommendation is subject to a vote by the School Board prior to any action (scheduled for Spring 2019)	Sept. 11, 2018 Curriculum Committee Meeting of the Whole School Board: Adolescent Sleep and School Start Time listed as a "Priority Project" on proposed district Goals and Priority Projects for 2018-19	Oct. 10, 2018 Meeting of Adolescent Sleep and School Start Time Committee: Review of draft Adolescent Sleep and School Start Time Committee Report and Initial Recommendation	Nov. and Dec. 2018 Feedback sessions on Adolescent Sleep and School Start Time Report with staff at each school building and Radnor High School students	Nov. 9, 2018 Adolescent Sleep and School Start Time Report and Initial Recommendation made available to School Board and public	Nov. 27, 2018 Feedback session with Radnor Elementary School staff	Dec. 3, 2018 Evening meeting open to public to discuss Adolescent Sleep and School Start Time Report and Initial Recommendation and receive feedback	Dec. 5, 2018 Feedback session with Wayne Elementary School staff	Dec. 12, 2018 Meeting of the Sleep and School Start Time Committee
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2019

Jan. 7, 2019
Evening meeting open to public to discuss Adolescent Sleep and School Start Time Report and Initial Recommendation and receive feedback

Feb. 7, 2019
"The Science Behind Sleep" with nationally renowned sleep expert Dr. Judith Owens

March 11, 2019
Meeting of the Sleep and School Start Time Committee: The committee further narrowed the Final Recommendations

March 21, 2019
Meetings with RMS staff members to review and discuss Sleep and School Start Time Committee Final Recommendation

April 2, 2019
Community Feedback Meeting at WES

April 4, 2019
Community Feedback Meeting at RMS

April 9, 2019
Community Feedback Meeting at RMS

Jan. 23, 2019
Meeting of the Sleep and School Start Time Committee:

Feb. 28, 2019
Meeting of the Sleep and School Start Time Committee: The committee debriefed on the Dr. Owens' event and discussed updated study information to begin narrowing down final school start time recommendations

March 20, 2019
Meetings with RHS and ES staff members to review and discuss Sleep and School Start Time Committee Final Recommendation

March 26, 2019
Presentation of Final Recommendation to School Board and discussion

April 3, 2019
Community Feedback Meetings at IES and RES

April 8, 2019
Community Feedback Meeting at RMS

April 23, 2019
Earliest planned School Board vote

