

Bell Schedule Revision, Iteration #1

Task

Re-engineer the bell schedule to create a schedule that:

- Has a three-tier structure

○ ES	7:50 – 8:10	2:30 – 2:50
○ HS + SS + ES	8:35 – 8:55	3:25 – 3:45
○ MS + ES	9:20 – 9:40	4:10 – 4:30
- Abides by the following parameters:
 - Transportation will use its expertise and local knowledge to ensure that elementary students on the first and last bell are not required to walk to or wait at bus stops in the dark.
 - In order to ensure that bus requirements are not increased, ES students should not ride the bus to their within-boundary base school for more than 45 minutes if they are not now doing so. If there are opportunities to improve run times without adding resources, that will be done.
 - In order to ensure that bus requirements are not increased, MS and HS students should not ride the bus to their within-boundary base school for more than 60 minutes if they are not now doing so. If there are opportunities to improve run times without adding resources, that will be done.
 - ES students should arrive no later than 5 minutes before school and no earlier than 25 minutes before school – a 5 to 25-minute arrival/drop off window – and are to be permitted to exit the bus and enter the school immediately upon arrival.
 - HS and MS student arrival/drop off window is to be 10 to 25 minutes before school, with immediate entry.
- Uses the most efficient means of delivering TJHSST students to school and home other than requiring all students to use depot stops, AM and PM.
- Assesses the value of placing combination runs (e.g. Woodson/Frost, Langley/Cooper) on the second bell rather than placing the MS of each pair on the third bell.

Group Construct

Four members:

- Coordinator from Area 3 (north)
- Assistant coordinator from Area 2 (mid-county)
- Route supervisor (and later an assistant coordinator and the coordinator) from Special Ed Transportation (county wide)
- Route tech from Area 1 (south)

Adjunct members

- Director
- Planner

This group has comprehensive knowledge of the county and extensive FCPS transportation experience.

Process

New Map and Run Cleanup

In the winter, we began the process of transitioning to a new GIS map that was more accurate than our existing graphic map. We determined that moving the existing routes, boundaries, and policies would perpetuate the collected errors and hidden glitches that had developed in the old map over the course of the past 20 years. The decision was made, therefore, to completely rebuild the new map.

When the project began in April, we quickly decided that the new map, though not perfect, was a significant improvement over the old map. More importantly, the benefits of cleaning out the old problems would result in a faster and more accurate computer coordination than by using the old map. The group was asked to review all of the rebuilt runs with the supervisors, to continue the run refinement, and to continue to resolve map representation problems that made accurate routing impossible.

A number of weeks were required to make the data and map as usable as possible. When we were satisfied that further refinement would have minimal impact on the work, the 07-08 run solution was frozen for reference.

All routes were then reset to the newly projected bell times to prepare for the coordination.

Bell Schedule Development

Bell schedule development and refinement were based on the group members' knowledge of routes, traffic, and schools. A rough draft outline and then a bell schedule were created using the model as outlined by the task force. The discussions about appropriate bell times focused initially on the best solution for placement of the high schools within the 20 minutes on the second tier. To start, it was assumed that most elementary schools would be on the first bell. They were moved to other bells when it became apparent, during coordination, that it would enhance efficiency and reduce resources to do so.

Trapeze Representative Visit

Mark Saylor, the Trapeze representative, visited for three days during the week of June 16. At that time, our specialists had spent a considerable length of time in the Mapnet coordination module, familiarizing themselves again with the process and developing process and results questions for the representative.

The representative worked with the revision group members and with the customer service team specialists. First, the work done to build the new map and to clean the runs was assessed to assure that the databases were ready for coordination. When the questions were discussed, it became apparent that our specialists had been operating the system with good results. Some of the methodologies they used proved to be more time consuming than necessary, without negatively affecting the outcomes. No reason was seen to ask the representative to return.

The representative pointed out that a **Mapnet coordination does not provide a usable solution** [appendix A]. It uses an algorithm and takes the necessary shortcuts to develop a solution. For example, one of the peculiarities, as Mark explained it, is that during a coordination, the program does not calculate actual deadhead (unloaded travel) time. It takes

the starting and ending crow-fly distance and then applies an adjustment based on a speed that we establish. The worse the traffic and traffic variations throughout the day, the less usable the system's deadhead calculation is.

Every Mapnet coordination is going to have to be validated by checking every trip (combination of runs for one bus) to make sure that the runs that are being proposed are viable. Those that are not will have to be reconfigured.

Paper Coordination – “Cut and Paste”

- The composite school routes, both AM and PM, were printed and cut into individual routes.
- The group members assembled the individual routes into runs for each bus, building out from the HS tier.
 - Sheets of paper were used; with each sheet representing one bus.
 - Runs are placed on the “bus” papers in order, with the group member assuring that the deadhead (unloaded travel) timing is viable.
- **Throughout the process, changes were made to the bell schedule and to the runs as necessary, to limit the number of buses needed for the solution.**

Results for Iteration #1

Office	New Schedule Mapnet Solution	New Schedule Paper Solution	Actual 07-08
A1	330	297	261
A2	349	307	292
A3	336	353*	304
SE	370	347	285
Total	1385	1304	1142

*includes Cooper MS which should have been on last tier

- Have the parameters been met?
 - Civil twilight
 - Base school elementary students are neither picked up nor dropped off on the dark side of civil twilight.
 - Some special program students are picked up at corner stops on the dark side.
 - Elementary – 45 minute run limit for in-boundary students – while this standard was met in all but 4 regular program runs, there were 159 SE runs that exceeded that limit [appendix B].
 - Middle and high school – 60 minute run limit for base school students – while this standard was met in all but 6 HS and 2 MS regular program runs, there were 64 HS, 15MS, and 59 Center SE runs that exceeded that limit [appendix B].
 - Elementary, 5 to 25 minute arrival/drop off window and HS and MS, 10 to 25 minute arrival/drop off window – we found that this flexibility is not of value in establishing a bell schedule as the critical flow is in the PM. If we used the time from an early release of a group of students to lengthen the next run, it would impact the afternoon timing. This option does provide flexibility in resolving some occasional operational run timing issues.
- Use the most efficient means of transporting TJ students [appendix C].

- All TJ students would be picked up at neighborhood stops in the morning. Depending upon the distance from TJ,
 - some would be direct-bussed from their stops to the school,
 - others would be bussed to a collection point where they would meet a shuttle bus to TJ.
- Afternoon transportation would not be changed.
- Assess the added efficiency of double-bussing some high school/middle school combinations.
 - Presently, Edison/Twain and Woodson/Frost are double-bussed. Each combination of schools have very large special program with similar or identical boundaries that lend themselves well to double bussing.
 - Additionally, the group looked at Langley/Cooper, Chantilly/Rocky Run, Lee/Key, and South Lakes/Hughes because of either the schools' close proximity and boundaries, or, in the case of Langley/Cooper, because of the very large distances that must be traveled for each.
 - Lee/Key and Chantilly/Rocky Run – by doubling these schools, 5 runs were eliminated in each pair. *Run elimination does not equate to reduction in drivers, as each has more than one run. It does equate to a reduction in mileage and frees the drivers to do other runs on other tiers.*
 - Langley/Cooper and South Lakes/Hughes – savings were assessed as minimal; Cooper and Hughes were placed on the third tier.
- Using this solution, there would be sufficient buses to handle the present mid-run academy shuttles.
- With the exception of Bryant, all ALCs at all levels will be on the first bell.
- Preschool and PAC will no longer be on the same bell as the elementary school in which they are located. They will go in after 9:00 until as late as 9:40. That will be problematic for the school's staff scheduling.

Cost

Based on the less costly paper solution, an additional 162 buses will be required.

Average Yearly Cost to Add One Bus, and Associated Costs, Per Operating Year through 15 year bus life span					
General Education Bus					
	new driver for an additional bus-entry level pay			\$31,486	
	training for new driver (first year only)			\$6,955	
	operate the average general ed bus/year			\$14,118	
	lease purchase GE bus per year for 15 years			\$7,801	
	Total Cost for one new bus and driver			\$60,360	in first year
				\$53,405	for next 14 years + cost inc
Special Education Bus					
	new driver for an additional bus-entry level pay			\$31,486	
	new attendant for an additional bus-entry level pay			\$22,231	
	training for new driver (first year only)			\$6,955	
	training for new attendant (first year only)			\$1,848	
	operate the average special ed bus/year			\$18,452	
	lease purchase GE bus per year for 15 years			\$7,469	
	Total Cost for one new bus and driver			\$88,441	in first year
				\$79,638	for next 14 years + cost inc

Budgeted Cost to Add Buses For First Five Years

Year 1 - includes training costs for new drivers and attendants

General Education Cost for One Bus			# Buses	Cost	
	new driver for an additional bus-entry level pay	\$31,486			
	training for new driver (first year only)	\$6,955			
	operate the average general ed bus/year	<u>\$14,118</u>			
Total		\$52,559	100	\$5,255,900	
Special Education Bus					
	new driver for an additional bus-entry level pay	\$31,486			
	new attendant for an additional bus-entry level pay	\$22,231			
	training for new driver (first year only)	\$6,955			
	training for new attendant (first year only)	\$1,848			
	operate the average special ed bus/year	<u>\$18,452</u>			
Total		\$80,972	62	\$5,020,264	
LP Cost				<u>\$4,282,113</u>	
Total Year 1				\$14,558,277	(plus cost increases)

Years 2-5

General Education Cost for One Bus			# Buses	Cost	
	new driver for an additional bus-entry level pay	\$31,486			
	operate the average general ed bus/year	\$14,118			
Total		\$45,604	100	\$4,560,400	
Special Education Bus					
	new driver for an additional bus-entry level pay	\$31,486			
	new attendant for an additional bus-entry level pay	\$22,231			
	operate the average special ed bus/year	\$18,452			
Total		\$72,169	62	\$4,474,478	
LP Cost				\$4,282,113	
Each Year 2-5				\$13,316,991	(plus cost increases)

Appendix A

Mapnet Coordination "Test"

In order to provide some insight into the value and problems of automated coordination, a routing specialist began working on a coordination of the runs from the "frozen" 07-08 solution. Our goal was to determine whether the program could provide a solution as efficient and as usable as the solution created by staff for the past school year. No attempt was made to assess usability of the Mapnet coordination as the number of buses required were excessive.

	Actual 07-08 Solution	Mapnet 07-08 Coordination
A1	261	315
A2	292	349
A3	304	323
SE	285	352
Total	1142	1339

Appendix B

ROUTE TIME > PARAMETER
By Level, by Type, by Length

Level	Name	Run	Length	Type	
C	Edison/Twain	ET-62 PM	89	R	
C	Lake Braddock	LB-63 PM	79	R	
C	Lake Braddock	LB-63 AM	76	R	
C	Chantilly/Rocky Run	CN/RR-55 AM	70	R	
C	Edison/Twain	ET-62 AM	69	R	
C	Rocky Run	RR-56 PM	64	R	
C	Lake Braddock	LB-02 PM	61	R	
C	Chantilly/Rocky run	CG-95 PM	73	S	
C	Lake Braddock	LB-97 AM	73	S	
C	Chantilly/Rocky run	CG-99 PM	63	S	
E	Cameron	CE-52 AM	66	R	
E	Louise Archer	LA-53 AM	65	R	
E	Louise Archer	LA-53 PM	65	R	
E	Cameron	CE-50 PM	63	R	
E	Baileys	BA-03 PM	60	R	Magnet
E	Stratford Landing	SG-53 AM	58	R	
E	Willow Springs	WC-02 AM	56	R	GT
E	Baileys	BA-02 AM	55	R	Magnet
E	Baileys	BA-02 PM	55	R	Magnet
E	Baileys	BA-03 AM	54	R	Magnet
E	Cameron	CE-52 PM	54	R	
E	Greenbriar West	GBW-50 PM	54	R	
E	Oak Hill	OK-54 PM	54	R	
E	Sangster	SA-03 AM	54	R	GT
E	Hunters Woods	HW-63 PM	53	R	
E	Oak Hill	OK-53 AM	53	R	
E	Hunters Woods	HW-56 AM	51	R	
E	Willow Springs	WC-02 PM	51	R	Distance
E	Armstrong	AS-04 PM	50	R	Distance
E	Columbia	CO-02 PM	50	R	Distance
E	Hunters Woods	HW-56 PM	50	R	
E	Hunters Woods	HW-58 PM	50	R	
E	Hunters Woods	HW-63 AM	50	R	
E	Stratford Landing	SG-53 PM	50	R	
E	White Oaks	WO-57 AM	50	R	
E	Bull Run	BX-52 PM	49	R	
E	Forest Edge	FE-52 AM	49	R	
E	Willow Springs	WC-61 AM	49	R	
E	Armstrong	AS-60 PM	48	R	
E	Baileys	BA-01 PM	48	R	
E	Mosby Woods	MW-54 AM	48	R	
E	Sangster	SA-04 AM	48	R	

E	Sunrise Valley	SV-58 AM	48	R	
E	White Oaks	WO-53 AM	48	R	
E	Hunters Woods	HW-62 PM	47	R	
E	Westgate	WG-01 AM	47	R	
E	White Oaks	WO-53 PM	47	R	
E	Willow Springs	WC-55 PM	47	R	
E	Belle View	BV-01 PM	46	R	
E	Colvin Run	CJ-50 PM	46	R	
E	Hunters Woods	HW-10 PM	46	R	
E	Westgate	WG-01 PM	46	R	
E	Aldrin	AD-60 AM	46	R	
E	Mantua	MU 95-PM	102	S	
E	Fairhill	FZ-99 PM	87	S	
E	Clearview	CV-99 PM	86	S	
E	Forest Edge	FE-99 PM	85	S	
E	Poplar Tree	PT-96 PM	85	S	
E	Clearview	CV-95 AM	82	S	
E	Greenbriar	GB-99 PM	82	S	
E	Eagle View	EV-99 PM	78	S	
E	Fairhill	FZ-99 AM	77	S	
E	Deer Park	DP-97 PM	75	S	
E	Fairfax Villa	FV-99 PM	75	S	
E	Little Run	LR-99 PM	75	S	
E	Lees Corner	LC-97 PM	74	S	
E	Cub Run	CU-98 PM	73	S	
E	Deer Park	DP-99 AM	72	S	
E	Mantua	MU 95-AM	71	S	
E	Lane	AL-99 AM	70	S	
E	Mantua	MU 97-AM	70	S	
E	Bush Hill	BU-97 AM	69	S	
E	Freedom Hill	FH-97 AM	69	S	
E	North Springfield	NS-97 PM	69	S	
E	Cub Run	CU-90 PM	68	S	
E	Mantua	MU 97-PM	68	S	
E	Cub Run	CU-90 AM	67	S	
E	Stenwood	ST-99 PM	67	S	
E	Terra Center	TC-97 PM	67	S	
E	Sunrise Valley	SV-98 PM	66	S	
E	Lees Corner	LC-97 AM	65	S	
E	Camelot	CA 92-PM	64	S	
E	Fairfax Villa	FV-99 AM	64	S	
E	Halley	HL-96 PM	64	S	
E	Poplar Tree	PT-96 AM	64	S	
E	Rose Hill	RH-99 AM	63	S	
E	Camelot	CA 92-AM	62	S	
E	Deer Park	DP-97 AM	62	S	
E	Hollin Meadows	HM-99 PM	62	S	
E	Mantua	MU 72-AM	62	S	
E	Parklawn	PL-97 PM	62	S	
E	Poplar Tree	PT-98 AM	62	S	
E	Terra Center	TC-98 PM	62	S	

E	Camelot	CA 81-AM	61	S	
E	Columbia	CO-98 PM	61	S	
E	Greenbriar	GB-99 AM	61	S	
E	Halley	HL-97 PM	61	S	
E	Island Creek	IC-98 PM	61	S	
E	Lane	AL-99 PM	61	S	
E	Parklawn	PL-97 AM	61	S	
E	Sunrise Valley	SV-98 AM	61	S	
E	Columbia	CO-98 PM	60	S	
E	Island Creek	IC-99 AM	60	S	
E	Mt Vernon Wds	MT-97 PM	60	S	
E	Waples Mill	WQP-96 AM	60	S	
E	Bren Mar Park	BP-97 PM	59	S	
E	Clearview	CV-97 AM	59	S	
E	Cub Run	CU-99 PM	59	S	
E	Halley	HL-98 AM	59	S	
E	Olde Creek	OD-95 PM	59	S	
E	Clearview	CV-98 AM	58	S	
E	Freedom Hill	FH-98 PM	58	S	
E	Olde Creek	OD-96 AM	58	S	
E	Bucknell	BN-98 PM	57	S	
E	Camelot	CA 73-AM	57	S	
E	Camelot	CA 74-PM	57	S	
E	Clearview	CV-95 PM	57	S	
E	Fairfax Villa	FV-97 PM	57	S	
E	Lees Corner	LC-98 PM	57	S	
E	Bren Mar Park	BP-97 AM	56	S	
E	Canterbury Woods	CW-99 AM	56	S	
E	Canterbury Woods	CW-99 PM	56	S	
E	Eagle View	EV-98 AM	56	S	
E	Bush Hill	BU-98 AM	55	S	
E	Camelot	CA 75-AM	55	S	
E	Camelot	CA 93-PM	55	S	
E	Island Creek	IC-99 PM	55	S	
E	Laurel Ridge	LL-99 PM	55	S	
E	Mantua	MU 98-AM	55	S	
E	Sleepy Hollow	SY-99 AM	55	S	
E	Stratford Landing	SG-99 PM	55	S	
E	Union Mill	UM-99 PM	55	S	
E	Waples Mill	WQP-94 AM	55	S	
E	Waples Mill	WQP-95 AM	55	S	
E	Bren Mar Park	BP-99 PM	54	S	
E	Cherry Run	CR-96 AM	54	S	
E	Halley	HL-97 AM	54	S	
E	Olde Creek	OD-99 AM	54	S	
E	Belle View	BV-98 PM	53	S	
E	Deer Park	DPE-90 PM	53	S	
E	Eagle View	EV-98 PM	53	S	
E	Floris	FL-99 AM	53	S	
E	Forestdale	FD-99 PM	53	S	
E	Greenbriar	GB-98 PM	53	S	

E	Mantua	MU 76-AM	53	S	
E	Mantua	MU 78-AM	53	S	
E	Ravensworth	RW-99 PM	53	S	
E	Shrevewood	SW-98 PM	53	S	
E	Sunrise Valley	SV-97 AM	53	S	
E	Willow Springs	WC-98 AM	53	S	
E	Willow Springs	WC-98 PM	53	S	
E	Armstrong	AS-97 PM	52	S	
E	Camelot	CA 94 AM	52	S	
E	Lane	AL-98 PM	52	S	
E	Lynbrook	LY-97 PM	52	S	
E	North Springfield	NS-98 PM	52	S	
E	Rose Hill	RH-97 PM	52	S	
E	Sunrise Valley	SV-97 PM	52	S	
E	Terra Center	TC-96 PM	52	S	
E	Camelot	CA 74-AM	51	S	
E	Camelot	CA 99-PM	51	S	
E	Forestdale	FD-98 PM	51	S	
E	Franklin Sherman	FS-98 PM	51	S	
E	Freedom Hill	FH-97 PM	51	S	
E	Halley	HL-99 PM	51	S	
E	Hunt Valley	HV-98 AM	51	S	
E	Mantua	MU 96-PM	51	S	
E	Olde Creek	OD-98 AM	51	S	
E	Rose Hill	RH-95 PM	51	S	
E	Bren Mar Park	BP-99 AM	50	S	
E	Lane	AL-97 AM	50	S	
E	London Towne	LT-98 AM	50	S	
E	Olde Creek	OD-95 AM	50	S	
E	Aldrin	AD-97 AM	49	S	
E	Belle View	BV-98 AM	49	S	
E	Camelot	CA 80-AM	49	S	
E	Cherry Run	CR-96 PM	49	S	
E	Cherry Run	CR-99 PM	49	S	
E	Deer Park	DP-99 PM	49	S	
E	Lane	AL-97 PM	49	S	
E	London Towne	LT-98 PM	49	S	
E	Terra Center	TC-99 PM	49	S	
E	Willow Springs	WC-99 PM	49	S	
E	Bren Mar Park	BP-96 AM	48	S	
E	Bucknell	BN-99 PM	48	S	
E	Camelot	CA 91-AM	48	S	
E	Camelot	CA 99-AM	48	S	
E	Hollin Meadows	HM-98 PM	48	S	
E	Lees Corner	LC-98 AM	48	S	
E	Poplar Tree	PT-95 PM	48	S	
E	Shrevewood	SW-98 AM	48	S	
E	Union Mill	UM-98 AM	48	S	
E	Bush Hill	BU-93 AM	47	S	
E	Bush Hill	BU-93 PM	47	S	
E	Clearview	CV-94 PM	47	S	

E	Eagle View	EV-95 AM	47	S	
E	Pine Springs	PS-97 PM	47	S	
E	Belvedere	BL-97 AM	46	S	
E	Bush Hill	BU-99 AM	46	S	
E	Camelot	CA 71-AM	46	S	
E	Canterbury Woods	CW-93 AM	46	S	
E	Canterbury Woods	CW-93 PM	46	S	
E	Clearview	CV-97 PM	46	S	
E	Deer Park	DP-98 AM	46	S	
E	Deer Park	DVP-99 PM	46	S	
E	Eagle View	EV-97 AM	46	S	
E	Hunt Valley	HV-98 PM	46	S	
E	Hunt Valley	HV-99 PM	46	S	
E	Lynbrook	LY-97 AM	46	S	
E	Sleepy Hollow	SY-99 PM	46	S	
H	Jefferson	JT-11 PM	122	R	
H	Jefferson	JT-25 AM	113	R	
H	Jefferson	JT-11 AM	110	R	
H	Jefferson	JT-25 PM	105	R	
H	Jefferson	JT-27 AM	97	R	
H	Jefferson	JT-3900 AM	97	R	
H	Jefferson	JT-14 AM	93	R	
H	Jefferson	JT-23 AM	89	R	
H	Jefferson	JT-12 AM	86	R	
H	Jefferson	JT-17 PM	86	R	
H	Jefferson	JT-3900 PM	85	R	
H	Jefferson	JT-27 PM	82	R	
H	Jefferson	JT-2000 AM	81	R	
H	Jefferson	JT-14 PM	80	R	
H	Jefferson	JT-13 AM	79	R	
H	Jefferson	JT-13 PM	79	R	
H	Jefferson	JT-2302 AM	79	R	
H	Jefferson	JT-1600 AM	77	R	
H	Jefferson	JT-12 PM	76	R	
H	Jefferson	JT-16 PM	75	R	
H	Jefferson	JT-1600 PM	75	R	
H	Jefferson	JT-3201 PM	74	R	
H	Jefferson	JT-26 AM	73	R	
H	Jefferson	JT-3600 AM	73	R	
H	South County	SC-09 AM	73	R	Hampton Rd
H	Woodson/Frost	WH/FI-51 AM	73	R	
H	South County	SC-09 PM	72	R	Hampton Rd
H	Jefferson	JT-1100 PM	71	R	
H	Woodson/Frost	WH/FI-20 AM	71	R	Distance
H	Jefferson	JT-17 AM	69	R	
H	Jefferson	JT-26 PM	69	R	
H	South County	SCMS-17 PM	69	R	Hampton Rd
H	Jefferson	JT-1100 AM	68	R	
H	Jefferson	JT-3000 PM	67	R	
H	Jefferson	JT-3201 AM	67	R	

H	Jefferson	JT-23 PM	66	R	
H	Jefferson	JT-3300 PM	66	R	
H	Woodson/Frost	WH/FI-25 AM	66	R	Popes Head Rd
H	Jefferson	JT-3300 AM	63	R	
H	Jefferson	JT-3600 PM	63	R	
H	Jefferson	JT-3800 AM	63	R	
H	Jefferson	JT-3901 AM	63	R	
H	South County	SCMS-09 PM	63	R	
H	Woodson/Frost	WH/FI-53 AM	63	R	
H	Jefferson	JT-3000 AM	62	R	
H	Jefferson	JT-3901 PM	62	R	
H	Cedar Lane	CC-86 PM	99	S	
H	Pulley	PU-98 PM	99	S	
H	Falls Church	FC-99 PM	86	S	
H	Cedar Lane	CC-87 AM	85	S	
H	Pulley	PU-98 AM	82	S	
H	Falls Church	FC-92 AM	78	S	
H	Pulley	PU-86 PM	78	S	
H	Pulley	PU-99 PM	78	S	
H	Falls Church	FC-96 PM	76	S	
H	Falls Church	FC-98 PM	76	S	
H	Falls Church	FC-99 AM	76	S	
H	Falls Church	FC-92 PM	75	S	
H	Quander	QC-99 PM	75	S	
H	Cedar Lane	CC-88 PM	74	S	
H	Cedar Lane	CC-92 AM	74	S	
H	Pulley	PU-93 PM	72	S	
H	Westfield	WV-98 PM	72	S	
H	Woodson North	WZ S-64 AM	72	S	
H	Davis	DA-96 AM	71	S	
H	Woodson North	WZ N-99 AM	71	S	
H	Cedar Lane	CC-87 PM	70	S	
H	Cedar Lane	CC-90 AM	70	S	
H	Cedar Lane	CC-90 PM	69	S	
H	Davis	DA-84 PM	69	S	
H	Cedar Lane	CC-88 AM	68	S	
H	Cedar Lane	CC-94 PM	68	S	
H	Pulley	PU-87 PM	68	S	
H	Quander	QC-92 PM	68	S	
H	Robinson	RS-92 AM	68	S	
H	Woodson North	WZ N-92 AM	68	S	
H	Woodson South	WZ S-75 PM	68	S	
H	Cedar Lane	CC-95 AM	67	S	
H	Davis	DA-75 PM	67	S	
H	Davis	DA-90 AM	67	S	
H	Pulley	PU-82 PM	67	S	
H	Pulley	PU-95 PM	67	S	
H	Quander	QC-95 PM	67	S	
H	West Springfield	WN-99 PM	67	S	
H	Falls Church	FC-95 AM	66	S	
H	Madison	MD-96 PM	66	S	

H	Pulley	PU-96 PM	66	S	
H	Pulley	PU-99 AM	66	S	
H	Quander	QC-88 PM	66	S	
H	Quander	QC-94 PM	66	S	
H	West Springfield	WN-99 AM	66	S	
H	Westfield	WV-98 AM	66	S	
H	Quander	QC-94 AM	65	S	
H	Woodson North	WZ S-67 PM	65	S	
H	Cedar Lane	CC-86 AM	64	S	
H	Falls Church	FC-98 AM	64	S	
H	South Lakes	SL-99 PM	64	S	
H	Woodson North	WZ N-98 PM	64	S	
H	Davis	DA-90 PM	63	S	
H	Davis	DA-94 PM	63	S	
H	Falls Church	FC-96 AM	63	S	
H	Langley	LG-94 PM	63	S	
H	Mount Vernon	MZ-97 PM	63	S	
H	Cedar Lane	CC-93 AM	61	S	
H	Davis	DA-95 AM	61	S	
H	Davis	DA-97 AM	61	S	
H	Davis	DA-97 PM	61	S	
H	Davis	DA-98 AM	61	S	
H	Madison	MD-96 AM	61	S	
H	Robinson	RS-94 AM	61	S	
M	Kilmer	KI-50 AM	77	R	GT
M	Cooper	CI-15 PM	73	R	Distance
M	Kilmer	KI-50 PM	71	R	GT
M	Kilmer	KI-51 PM	67	R	GT
M	Cooper	CI-15 AM	63	R	Distance
M	Kilmer	KI-51 AM	63	R	GT
M	Kilmer	KI-52 PM	61	R	GT
M	Kilmer	KI-60 AM	61	R	GT
M	Burke Ctr	BC-98 AM	84	S	
M	Holmes	HO-94 PM	84	S	
M	Burke Ctr	BC-83 AM	78	S	
M	Holmes	HO-97 PM	75	S	
M	Holmes	HO-95 PM	74	S	
M	Kilmer	KI-98 AM	70	S	
M	Poe	PM-99 AM	70	S	
M	Herndon MS	HZ-99 AM	63	S	
M	Kilmer	KI-98 PM	63	S	
M	Poe	PM-99 PM	63	S	
M	Burke Ctr	BC-81 PM	62	S	
M	Franklin	FK-98 PM	62	S	
M	Holmes	HO-97 AM	62	S	
M	Kilmer	KI-95 PM	61	S	
M	Kilmer	KI-99 PM	61	S	
S	Key Ctr	KC-85 PM	91	S	
S	Key Ctr	KC-83 PM	78	S	

S	Key Ctr	KC-80 AM	77	S	
S	Key Ctr	KC-80 PM	76	S	
S	Key Ctr	KC-85 AM	76	S	
S	Key Ctr	KC-83 AM	72	S	
S	Key Ctr	KC-89 AM	72	S	
S	Key Ctr	KC-82 AM	71	S	
S	Key Ctr	KC-90 AM	71	S	
S	Key Ctr	KC-91 AM	68	S	
S	Key Ctr	KC-84 PM	67	S	
S	Key Ctr	KC-90 PM	67	S	
S	Key Ctr	KC-87 PM	65	S	
S	Key Ctr	KC-88 AM	64	S	
S	Key Ctr	KC-84 AM	62	S	
S	Key Ctr	KC-98 AM	61	S	
S	Key Ctr	KC-96 PM	60	S	
S	Key Ctr	KC-82 PM	59	S	
S	Key Ctr	KC-88 PM	59	S	
S	Key Ctr	KC-89 PM	58	S	
S	Key Ctr	KC-81 AM	57	S	
S	Key Ctr	KC-86 AM	53	S	
S	Key Ctr	KC-87 AM	51	S	
S	Key Ctr	KC-79 AM	50	S	
S	Key Ctr	KC-96 AM	49	S	
S	Key Ctr	KC-81 PM	48	S	
S	Key Ctr	KC-91 PM	48	S	
S	Key Ctr	KC-95 AM	48	S	
S	Key Ctr	KC-97 AM	48	S	
S	Key Ctr	KC-78 AM	47	S	
S	Key Ctr	KC-78 PM	46	S	
S	Key Ctr	KC-97 PM	46	S	
S	Kilmer Ctr	KR-86 AM	91	S	
S	Kilmer Ctr	KR-92 AM	90	S	
S	Kilmer Ctr	KR-85 AM	80	S	
S	Kilmer Ctr	KR-91 PM	80	S	
S	Kilmer Ctr	KR-97 PM	80	S	
S	Kilmer Ctr	KR-86 PM	79	S	
S	Kilmer Ctr	KR-95 AM	79	S	
S	Kilmer Ctr	KR-98 AM	79	S	
S	Kilmer Ctr	KR-94 AM	78	S	
S	Kilmer Ctr	KR-97 AM	75	S	
S	Kilmer Ctr	KR-93 AM	72	S	
S	Kilmer Ctr	KR-95 PM	70	S	
S	Kilmer Ctr	KR-85 PM	69	S	
S	Kilmer Ctr	KR-92 PM	69	S	
S	Kilmer Ctr	KR-91 AM	68	S	
S	Kilmer Ctr	KR-98 PM	65	S	
S	Kilmer Ctr	KR-94 PM	64	S	
S	Kilmer Ctr	KR-96 PM	61	S	
S	Kilmer Ctr	KR-99 AM	57	S	
S	Kilmer Ctr	KR-88 PM	55	S	
S	Kilmer Ctr	KR-88 AM	53	S	

S	Kilmer Ctr	KR-89 PM	52	S	
S	Kilmer Ctr	KP-99 AM	52	S	
S	Kilmer Ctr	KR-89 AM	51	S	
S	Kilmer Ctr	KR-93 PM	51	S	
S	Kilmer Ctr	KR-96 AM	49	S	
S	Kilmer Ctr	KR-90 PM	46	S	
C	Combination MS/HS				
E	Elementary				
H	High				
M	Middle				
S	All ages				

Appendix C

RUNS BY LEVEL, BY TIER, BY START TIME
School Times - Earliest Pick Up, Latest Drop, TJ AM Transport Method

Cluster	School		School Hours	Earliest pickup	Latest Drop	How students are trans to TJ in AM *	D-direct S-Shuttle
4	Bucknell ES	E	7:50-2:25	7:22	2:59		
4	Fort Belvoir ES	E	7:50-2:25	7:01	3:11		
4	Groveton ES	E	7:50-2:25	7:26	2:37		
4	Hybla Valley ES	E	7:50-2:25	7:31	2:51		
3	Annandale Terrace ES	E	7:50-2:30	7:08	3:04		
3	Beech Tree ES	E	7:50-2:30	7:16	2:58		
4	Belle View ES	E	7:50-2:30	7:11	3:33		
3	Belvedere ES	E	7:50-2:30	7:04	3:14		
6	Bonnie Brae ES	E	7:50-2:30	7:18	2:57		
3	Bren Mar Park ES	E	7:50-2:30	7:22	3:39		
5	Bush Hill ES	E	7:50-2:30	7:16	3:27		
2	Camelot ES	E	7:50-2:30	7:17	3:44		
3	Canterbury Woods ES	E	7:50-2:30	7:05	4:20		
6	Cardinal Forest ES	E	7:50-2:30	7:15	3:03		
7	Centre Ridge ES	E	7:50-2:30	7:06	3:15		
7	Centreville ES	E	7:50-2:30	7:25	2:56		
6	Cherry Run ES	E	7:50-2:30	7:07	3:15		
1	Clearview ES	E	7:50-2:30	7:00	3:13		
6	Clifton ES	E	7:50-2:30	7:04	3:15		
3	Columbia ES	E	7:50-2:30	6:55	3:30		
1	Colvin Run ES	E	7:50-2:30	7:02	3:25		
5	Crestwood ES	E	7:50-2:30	7:33	2:48		
8	Crossfield ES	E	7:50-2:30	7:17	3:05		
8	Cub Run ES	E	7:50-2:30	7:26	3:48		
2	Cunningham Park ES	E	7:50-2:30	7:11	3:17		
7	Daniels Run ES	E	7:50-2:30	7:09	3:15		
8	Deer Park ES	E	7:50-2:30	6:58	3:33		
8	Dogwood ES	E	7:50-2:30	7:21	3:00		
7	Eagle View ES	E	7:50-2:30	7:07	3:58		
6	Fairview ES	E	7:50-2:30	7:04	3:16		
8	Forest Edge ES	E	7:50-2:30	6:51	3:18		GT
1	Forestville ES	E	7:50-2:30	7:08	3:11		
8	Fox Mill ES	E	7:50-2:30	7:11	3:18		
5	Franconia ES	E	7:50-2:30	7:14	3:04		
1	Franklin Sherman ES	E	7:50-2:30	7:14	3:06		
2	Freedom Hill ES	E	7:50-2:30	6:59	3:38		
2	Graham Road ES	E	7:50-2:30	7:32	2:46		
1	Great Falls ES	E	7:50-2:30	7:06	3:11		
7	Greenbriar West ES	E	7:50-2:30	7:02	3:34		
4	Gunston ES	E	7:50-2:30	7:02	3:22		

1	Haycock ES	E	7:50-2:30	7:00	3:23	
4	Hayfield ES	E	7:50-2:30	7:04	3:24	
1	Herndon ES	E	7:50-2:30	7:14	3:11	
6	Hunt Valley ES	E	7:50-2:30	7:07	3:26	
4	Island Creek ES	E	7:50-2:30	7:15	3:05	
6	Keene Mill ES	E	7:50-2:30	6:59	3:19	
6	Kings Glen ES	E	7:50-2:30	6:58	3:20	
6	Kings Park ES	E	7:50-2:30	7:02	3:15	
8	Lake Anne ES	E	7:50-2:30	7:13	3:20	
7	Lees Corner ES	E	7:50-2:30	7:17	3:59	
2	Lemon Road ES	E	7:50-2:30	7:15	3:02	
3	Little Run ES	E	7:50-2:30	7:26	2:53	
5	Lynbrook ES	E	7:50-2:30	7:24	3:22	
2	Marshall Road ES	E	7:50-2:30	7:10	3:25	
8	McNair ES	E	7:50-2:30	7:17	3:26	
8	Navy ES	E	7:50-2:30	6:58	3:10	
3	North Springfield ES	E	7:50-2:30	7:31	3:01	
7	Oak Hill ES	E	7:50-2:30	6:47	3:34	NCLB
3	Olde Creek ES	E	7:50-2:30	7:11	3:24	
6	Orange Hunt ES	E	7:50-2:30	7:47	2:53	
7	Poplar Tree ES	E	7:50-2:30	7:12	4:05	
7	Providence ES	E	7:50-2:30	6:56	3:16	
6	Rolling Valley ES	E	7:50-2:30	7:08	3:07	
5	Rose Hill ES	E	7:50-2:30	7:06	3:17	
6	Sangster ES	E	7:50-2:30	6:46	3:25	GT
5	Saratoga ES	E	7:50-2:30	7:01	3:14	
2	Shreviewood ES	E	7:50-2:30	7:20	3:33	
5	Silverbrook ES	E	7:50-2:30	7:20	3:00	
3	Sleepy Hollow ES	E	7:50-2:30	7:07	3:26	
1	Spring Hill ES	E	7:50-2:30	7:54	4:03	
5	Springfield Estates ES	E	7:50-2:30	7:05	3:16	
2	Stenwood ES	E	7:50-2:30	7:13	3:18	
8	Sunrise Valley ES	E	7:50-2:30	6:39	3:32	GT
8	Terraset ES	E	7:50-2:30	7:04	3:09	
1	Timber Lane ES	E	7:50-2:30	7:24	2:54	
7	Union Mill ES	E	7:50-2:30	7:23	2:58	
2	Vienna ES	E	7:50-2:30	7:07	3:20	
8	Virginia Run ES	E	7:50-2:30	7:14	3:15	
3	Wakefield Forest ES	E	7:50-2:30	7:02	3:24	
8	Waples Mill ES	E	7:50-2:30	7:07	3:16	
6	West Springfield ES	E	7:50-2:30	7:32	2:50	
6	White Oaks ES	E	7:50-2:30	6:50	3:27	GT
2	Wolftrap ES	E	7:50-2:30	6:56	3:23	
2	Woodburn ES	E	7:50-2:30	7:21	3:03	
5	Halley ES	E	7:55-2:30	7:06	3:22	
1	Hutchison ES	E	7:55-2:30	7:18	3:20	
8	London Towne ES	E	7:55-2:30	7:23	2:54	
5	Mount Eagle ES	E	7:55-2:30	7:21	2:55	
2	Pine Springs ES	E	7:55-2:30	7:29	2:56	
2	Westlawn ES	E	7:55-2:30	7:26	2:57	

4	Woodley Hills ES	E	8:00-2:35	7:20	3:23	
3	Braddock ES	E	8:00-2:40	7:19	3:16	
7	Colin Powell ES	E	8:00-2:40	7:25	3:34	
2	Flint Hill ES	E	8:00-2:40	7:14	3:23	
4	Lorton Station ES	E	8:05-2:45	7:16	3:30	
4	Washington Mill ES	E	8:05-2:45	7:13	3:34	
3	Weyanoke ES	E	8:05-2:45	7:13	3:27	
5	Cameron ES	E	8:10-2:45	6:54	3:58	ALC
4	Hollin Meadows ES	E	8:10-2:45	7:17	3:52	
4	Mount Vernon Woods ES	E	8:10-2:45	7:32	3:12	
4	Riverside ES	E	8:10-2:45	7:20	3:23	
4	Woodlawn ES	E	8:10-2:45	7:35	3:29	
4	Fort Hunt ES	E	8:10-2:50	7:47	3:05	
4	Newington Forest ES	E	8:35-3:15	7:55	3:55	
5	Parklawn ES	E	8:35-3:15	8:09	3:40	
3	Waynewood ES	E	8:35-3:15	8:04	3:57	
6	Aldrin ES	E	8:40-3:20	7:44	4:04	
6	Chesterbrook ES	E	8:40-3:20	8:06	3:58	
5	Fairhill ES/Ctr	E	8:40-3:20	7:13	4:57	
7	Floris ES	E	8:40-3:20	7:37	4:08	
7	Kent Gardens ES	E	8:40-3:20	8:11	3:50	
8	Louise Archer ES	E	8:40-3:20	7:25	4:35	
5	Westbriar ES	E	8:40-3:20	8:08	3:56	
4	Westgate ES	E	8:40-3:20	7:43	4:16	
1	Glen Forest ES	E	8:55-4:25	8:28	4:51	
1	Armstrong ES	E	9:40-4:20	7:47	5:22	
3	Baileys ES	E	9:40-4:20	8:35	5:30	
7	Brookfield ES	E	9:40-4:20	9:18	4:50	
7	Bull Run ES	E	9:40-4:20	8:47	5:19	GT
1	Churchill Road ES	E	9:40-4:20	7:45	5:04	
5	Clermont ES	E	9:40-4:20	7:16	3:04	
1	Dranesville ES	E	9:40-4:20	9:05	4:47	
7	Fairfax Villa ES	E	9:40-4:20	8:26	5:02	
5	Forestdale ES	E	9:40-4:20	8:47	4:13	
5	Garfield ES	E	9:40-4:20	8:55	4:54	
7	Greenbriar East ES	E	9:40-4:20	8:29	5:05	
8	Hunters Woods ES	E	9:40-4:20	8:39	5:23	GT/Magnet
4	Lane ES	E	9:40-4:20	8:20	4:55	
6	Laurel Ridge ES	E	9:40-4:20	8:48	4:45	
3	Mantua ES	E	9:40-4:20	8:28	5:12	GT
8	Mosby Woods ES	E	9:40-4:20	8:57	5:10	
6	Oak View ES	E	9:40-4:20	8:59	5:07	
8	Oakton ES	E	9:40-4:20	8:59	5:10	
3	Ravensworth ES	E	9:40-4:20	8:57	4:47	
4	Stratford Landing ES	E	9:40-4:20	8:32	5:20	GT
6	Terra Centre ES	E	9:40-4:20	8:55	4:56	
7	Willow Springs ES	E	9:40-4:20	8:34	5:21	GT
3	TJHSST	H	8:30-3:50	6:07	6:02	
8	Annandale HS	H	8:35-3:25	7:36	4:21	D

1	Centreville HS	H	8:35-3:25	7:36	4:29	D
2	Edison HS	H	8:35-3:25	7:16	5:00	D
2	Fairfax HS	H	8:35-3:25	7:26	4:50	D
5	Hayfield SS	S	8:35-3:25	7:43	4:14	D
6	Robinson SS	S	8:35-3:25	7:17	4:35	D
2	Stuart HS	H	8:35-3:25	7:47	4:06	D
1	West Springfield HS	H	8:35-3:25	7:19	4:42	D
2	Westfield HS	H	8:35-3:25	7:19	4:47	D
1	Falls Church HS	H	8:50-3:40	7:21	5:05	S
2	Herndon HS	H	8:50-3:40	8:04	5:27	S
5	Lee HS	H	8:50-3:40	7:47	4:21	D
3	Madison HS	H	8:50-3:40	7:39	4:56	S
3	McLean HS	H	8:50-3:40	7:57	4:39	S
2	Oakton HS	H	8:50-3:40	7:52	4:46	S
1	South Lakes HS	H	8:50-3:40	7:41	4:54	S
8	Cedar Lane Ctr	H	8:55-3:45	7:20	5:14	NA
5	Chantilly HS	H	8:55-3:45	7:12	5:05	D
3	Lake Braddock SS	S	8:55-3:45	7:45	4:54	D
1	Langley HS	H	8:55-3:45	7:48	4:58	S
1	Marshall HS/Davis Ctr	H	8:55-3:45	7:34	4:59	S
4	Mount Vernon HS	H	8:55-3:45	7:45	4:58	D
8	Pulley Ctr	H	8:55-3:45	7:23	5:29	NA
7	Quander Road Ctr	H	8:55-3:45	7:40	4:55	NA
3	South County HS	H	8:55-3:45	7:50	5:07	D
2	West Potomac HS	H	8:55-3:45	8:11	4:27	D
4	Woodson HS	H	8:55-3:45	7:38	5:03	D
4	Key MS	M	8:35-3:25	7:40	4:21	
4	Twain MS	M	8:50-3:40	6:45	5:00	
3	Frost MS	M	9:10-4:00	7:47	4:55	
7	Rocky Run MS	M	9:10-4:00	7:50	5:14	
3	Glasgow MS	M	9:20-4:10	8:23	5:06	
3	Poe MS	M	9:20-4:10	8:00	5:23	
8	Stone MS	M	9:30-4:20	8:54	5:30	
6	Burke Ctr	M	9:40-4:30	8:06	5:42	
8	Carson MS	M	9:40-4:30	8:48	5:22	
1	Cooper MS	M	9:40-4:30	8:27	5:53	
7	Franklin MS	M	9:40-4:30	8:43	5:32	
1	Herndon MS	M	9:40-4:30	8:55	5:33	
3	Holmes MS	M	9:40-4:30	8:28	5:54	
8	Hughes MS	M	9:40-4:30	8:42	5:38	
6	Irving MS	M	9:40-4:30	8:34	5:37	
2	Jackson MS	M	9:40-4:30	8:38	5:25	
2	Kilmer MS	M	9:40-4:30	8:13	5:51	
7	Lanier MS	M	9:40-4:30	8:41	5:34	
7	Liberty MS	M	9:40-4:30	8:50	5:28	
1	Longfellow MS	M	9:40-4:30	8:42	5:31	
4	Sandburg MS	M	9:40-4:30	8:54	5:17	
5	South County MS	M	9:40-4:30	8:31	5:43	
8	Stone MS	M	9:30-4:20	8:54	5:30	

2	Thoreau MS	M	9:40-4:30	8:43	5:29	
4	Whitman MS	M	9:40-4:30	9:05	5:07	
1	Aldrin ES <i>ps/pac</i>	P	9:40-4:20	8:41	5:20	
3	Belvedere ES <i>ps/pac</i>	P	9:40-4:20	8:44	5:03	
4	Bucknell ES <i>ps</i>	P	9:40-4:20	8:56	5:27	
7	Centreville ES <i>pac</i>	P	9:40-4:20	8:56	5:06	
6	Cherry Run ES <i>ps/pac</i>	P	9:40-4:20	8:36	5:19	
1	Clearview ES <i>ps/pac</i>	P	9:40-4:20	8:08	5:56	
3	Columbia ES <i>ps</i>	P	9:40-4:20	9:01	5:31	
1	Colvin Run ES <i>ps</i>	P	9:40-4:20	9:04	4:40	
8	Cub Run ES <i>ps/pac</i>	P	9:40-4:20	8:45	5:43	
8	Deer Park ES <i>pac</i>	P	9:40-4:20	8:18	5:45	
7	Eagle View ES <i>ps</i>	P	9:40-4:20	8:43	4:59	
8	Forest Edge ES <i>ps</i>	P	9:40-4:20	8:55	5:55	
4	Fort Belvoir ES <i>ps</i>	P	9:40-4:20	9:13	4:55	
1	Franklin Sherman ES <i>ps/pac</i>	P	9:40-4:20	8:54	5:21	
2	Freedom Hill ES <i>ps</i>	P	9:40-4:20	9:02	5:11	
5	Halley ES <i>ps/pac</i>	P	9:40-4:20	8:31	5:34	
4	Island Creek ES <i>ps/pac</i>	P	9:40-4:20	8:30	5:31	
6	Keene Mill ES <i>ps</i>	P	9:40-4:20	8:54	5:11	
6	Kings Park ES <i>ps/pac</i>	P	9:40-4:20	8:38	5:04	
2	Lemon Road ES <i>ps</i>	P	9:40-4:20	9:07	4:34	
3	Little Run ES <i>ps/pac</i>	P	9:40-4:20	9:07	5:45	
8	London Towne ES <i>ps</i>	P	9:40-4:20	8:40	5:19	
5	Lynbrook ES <i>pac</i>	P	9:40-4:20	9:09	4:59	
4	Mount Vernon Woods ES <i>ps</i>	P	9:40-4:20	9:03	5:30	
3	North Springfield ES <i>ps/pac</i>	P	9:40-4:20	8:48	5:39	
7	Oak Hill ES <i>ps/pac</i>	P	9:40-4:20	8:47	5:10	
3	Parklawn ES <i>pac</i>	P	9:40-4:20	8:29	5:32	
2	Pine Springs ES <i>ps/pac</i>	P	9:40-4:20	8:57	5:17	
5	Rose Hill ES <i>ps/pac</i>	P	9:40-4:20	8:27	5:22	
2	Stenwood ES <i>ps</i>	P	9:40-4:20	9:01	5:37	
1	Timber Lane ES <i>ps</i>	P	9:40-4:20	8:49	5:09	
2	Vienna ES <i>ps</i>	P	9:40-4:20	8:49	5:05	
8	Waples Mill ES <i>ps/pac</i>	P	9:40-4:20	8:30	5:13	
6	West Springfield ES <i>ps</i>	P	9:40-4:20	9:10	5:01	

Freedom Hill ES <i>ps</i>	P	9:40-4:20			3	3													
Lemon Road ES <i>ps</i>	P	9:40-4:20			1	1													
Pine Springs ES <i>ps/pac</i>	P	9:40-4:20			3	2													
Stenwood ES <i>ps</i>	P	9:40-4:20			1	1													
Vienna ES <i>ps</i>	P	9:40-4:20			2	3													
Belvedere ES <i>ps/pac</i>	P	9:40-4:20			4	4													
Columbia ES <i>ps</i>	P	9:40-4:20			2	2													
Little Run ES <i>ps/pac</i>	P	9:40-4:20			3	2													
North Springfield ES <i>ps/pac</i>	P	9:40-4:20			4	4													
Parklawn ES <i>pac</i>	P	9:40-4:20			3	3													
Ravensworth ES <i>ps</i>	P	9:40-4:20			1	1													
Bucknell ES <i>ps</i>	P	9:40-4:20			2	2													
Fort Belvoir ES <i>ps</i>	P	9:40-4:20			1	1													
Island Creek ES <i>ps/pac</i>	P	9:40-4:20			4	4													
Mount Vernon Woods ES <i>ps</i>	P	9:40-4:20			3	3													
Halley ES <i>ps/pac</i>	P	9:40-4:20			5	4													
Lynbrook ES <i>pac</i>	P	9:40-4:20			4	2													
Rose Hill ES <i>ps/pac</i>	P	9:40-4:20			5	5													
Cherry Run ES <i>ps/pac</i>	P	9:40-4:20			5	5													
Keene Mill ES <i>ps</i>	P	9:40-4:20			3	2													
Kings Park ES <i>ps/pac</i>	P	9:40-4:20			2	2													
West Springfield ES <i>ps</i>	P	9:40-4:20			2	2													
Centreville ES <i>pac</i>	P	9:40-4:20			2	2													
Eagle View ES <i>ps</i>	P	9:40-4:20			2	2													
Fairfax Villa ES <i>ps</i>	P	9:40-4:20			2	2													
Oak Hill ES <i>ps/pac</i>	P	9:40-4:20			1	1													
Cub Run ES <i>ps/pac</i>	P	9:40-4:20			4	3													
Deer Park ES <i>pac</i>	P	9:40-4:20			4	3													
London Towne ES <i>ps</i>	P	9:40-4:20			2	2													
Forest Edge ES <i>ps</i>	P	9:40-4:20			2	2													
McNair ES <i>ps</i>	P	9:40-4:20			2	2													
Waples Mill ES <i>ps/pac</i>	P	9:40-4:20			4	5													

Number of Runs per Tier by Level							Percentage of Runs per Tier by Level					
AM	Tier 1		Tier 2		Tier 3		Tier 1		Tier 2		Tier 3	
ES	1010		103		223	1336	76%		8%		17%	100%
MS			76	60	458	594			13%	10%	77%	100%
SS			147			147			100%			100%
HS		65	715			780		8%	92%			100%
PS					106	106					100%	100%
	1010	65	1041	60	787	2963						
PM												
ES	1001		103		220	1324	76%		8%		17%	100%
MS			77	59	457	593			13%	10%	77%	100%
SS			147			147			100%			100%
HS		64	720			784		8%	92%			100%
PS					98	98					100%	100%
	1001	64	1047	59	775	2946						
	2011	129	2088	119	1562	5909						