

GUILDERLAND CENTRAL SCHOOL DISTRICT

Bell Time Study and Transportation Impact Analysis

OCTOBER 29, 2019



**SCHOOL BUS
CONSULTANTS**

Proud Partner with the TransPar Group of Companies

OVERVIEW

- **Key Performance Indicators**
- **Current Bell Time and Route Structure**
- **Discuss Alternative Bell Time Scenarios**



SYSTEM INDICATORS

Indicators	Metric/Figure	Description
Number of current active route buses (CRB):	Total: 64 RE: 62 SE: 2(4)	The number of buses actively performing routes on a daily basis. Number of drivers needed on a daily basis (Number of buses performing both RE & SE)
Number of daily runs (AM and PM only):	Total: 274 RE: 256 SE: 18	Number of runs (trips) that are performed each day.
Number of runs per bus:	Total: 4.03 RE: 4.13 SE: 3.00	Average number of runs (trips) a bus will perform on a daily basis. *In a 3 tier system it is expected to have 6 runs per bus
Run Time (RE):	Average: 23 minutes Minimum: 4 minutes Maximum: 1 hour 32 minutes	The time from when the first student enters the bus to when the last student leaves the bus.
Arrival time prior to first bell (RE):	Average: 17 minutes Minimum: 2 minutes Maximum: 50 minutes	Time a student arrives to school before the first bell rings.
Earliest student pick up:	6:01 AM (RE HS)/2:04 PM (SE ES)	Earliest time a student will enter a bus
Latest student drop off:	8:34 AM (RE MS)/5:02 PM (RE PAR) & 4:35 PM (SE MS)	Latest time a student will leave a bus

SYSTEM INDICATORS

Indicator	Metric/Figure	Description
Number of planned students transported daily: (Planned riders or “assigned students” from run file)	Total: 5,126 RE: 4,983 SE: 143	Total number of students that are assigned to a route on a daily basis.
Capacity Utilization RE: * Based off of Desired Load	Elementary Schools: 67% Middle Schools: 69% High Schools: 84% Parochial Schools: 62% Total: 71%	Percentage of students transported compared to the bus capacity
Capacity Utilization SE: * Based off of Desired Load	Elementary Schools: 68% Middle Schools: 36% High Schools: 73% Total: 59%	Percentage of students transported compared to the bus capacity



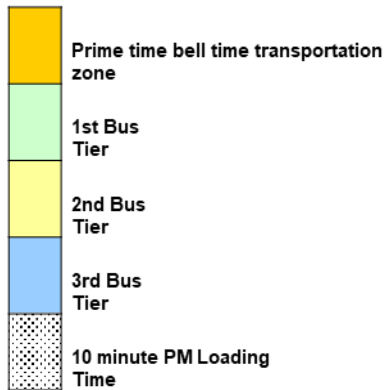
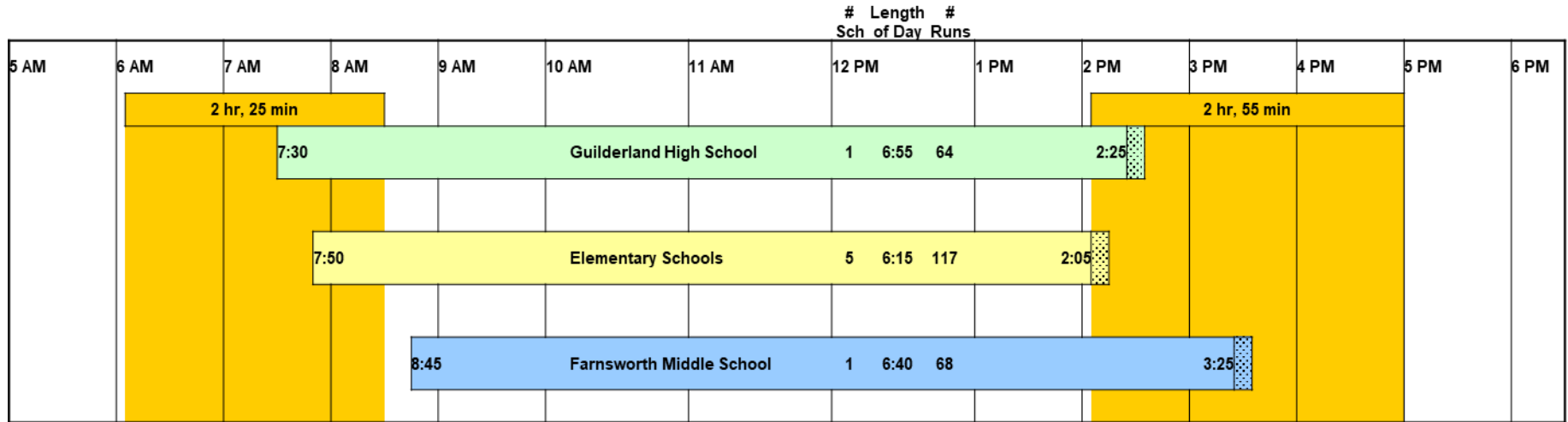
FINANCIAL INDICATORS

Indicators	Value	National Average	Notes
Annual cost per RE student: Annual cost per SE student: Annual cost per student:	\$1,027 \$3,491 \$1,095	\$1,000 - \$1,100	Average daily: \$5.95 Using FY 19 Expenditures
Annual cost per RE bus: Annual cost per SE bus: Annual cost per bus:	\$87,434 \$92,115 \$87,727	\$57,000 - \$69,000	Average daily: \$487 64 active route buses Using FY 19 Expenditures
Total GCSD Operating District Budget:	\$102,107,375	n/a	FY 19 Expenditures
Transportation Operating Budget:	\$5,614,499	n/a	FY 19 Expenditures
% of Transportation Operation Budget to Total GCSD Operating District Budget:	5.5%	4 – 6 % *well funded	FY 19 Expenditures



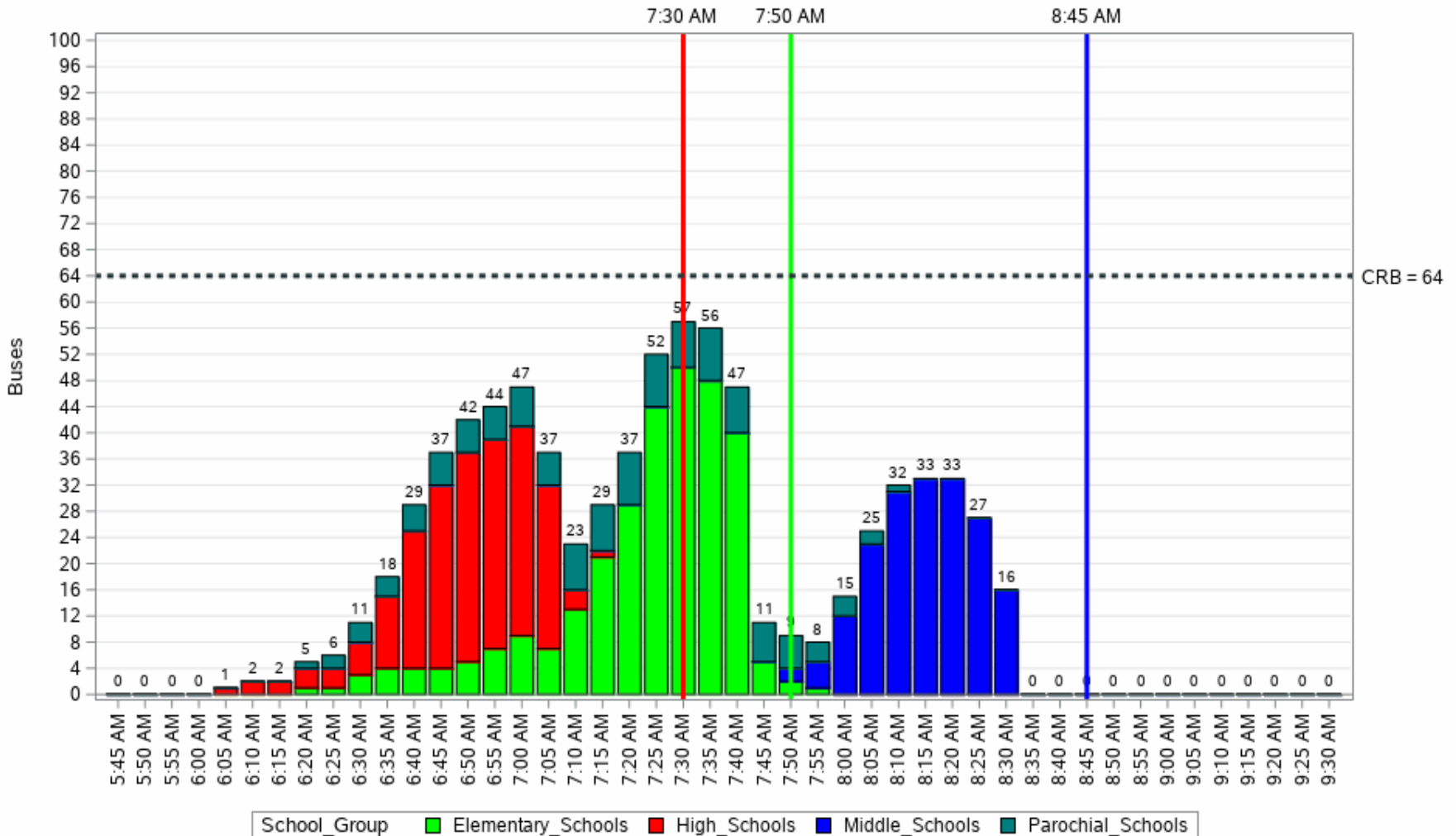
BELL TIME STRUCTURE

Guilderland Central School District



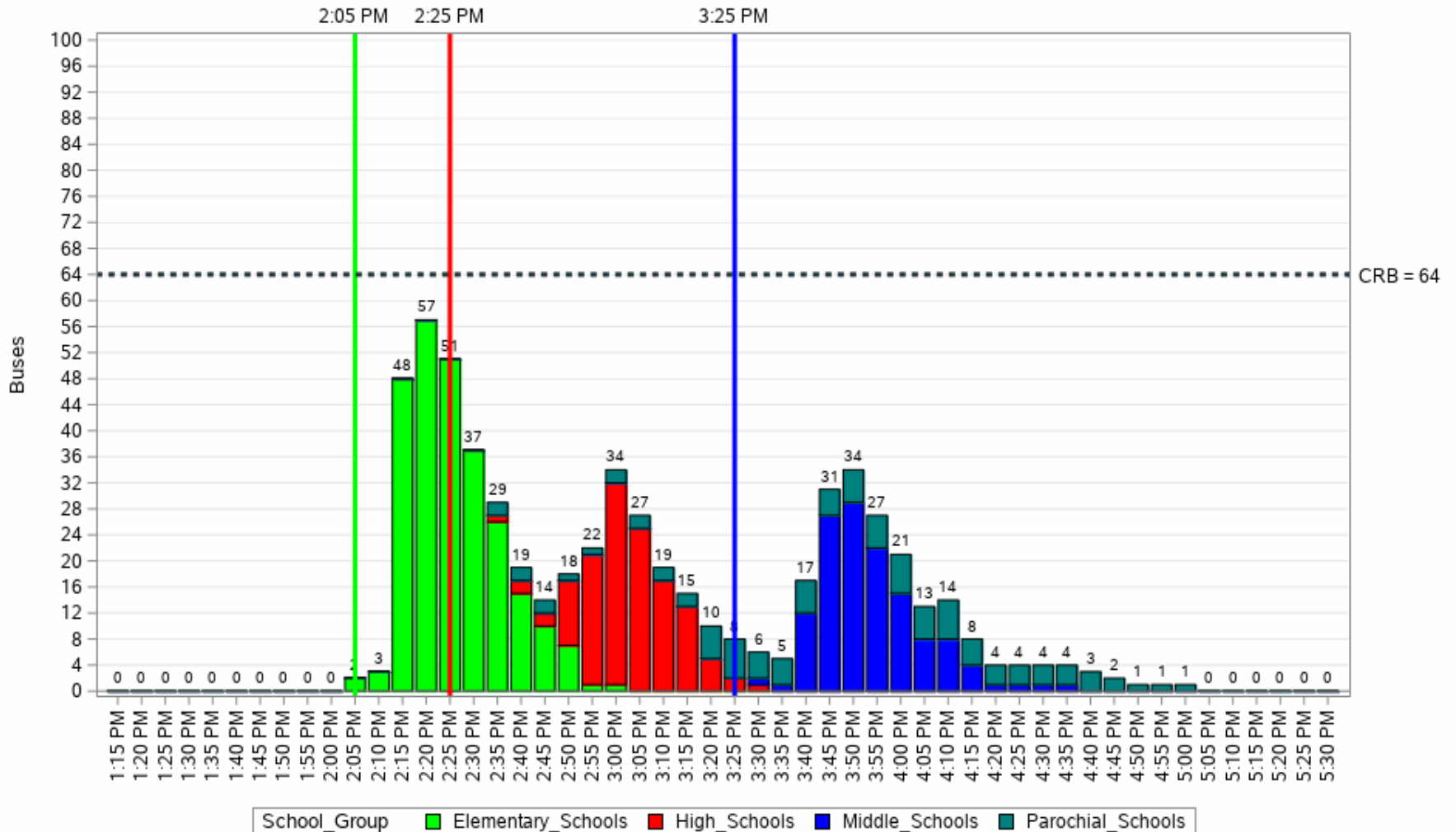
AM DEPLOYMENT MODEL

Guiderland Central School District Deployment Model AM - Vehicles in Operation Carrying Students



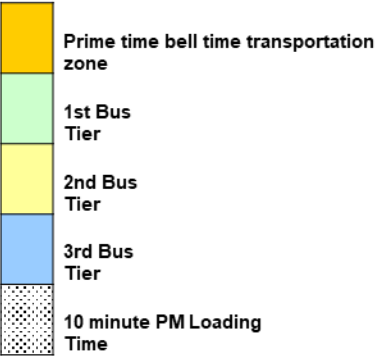
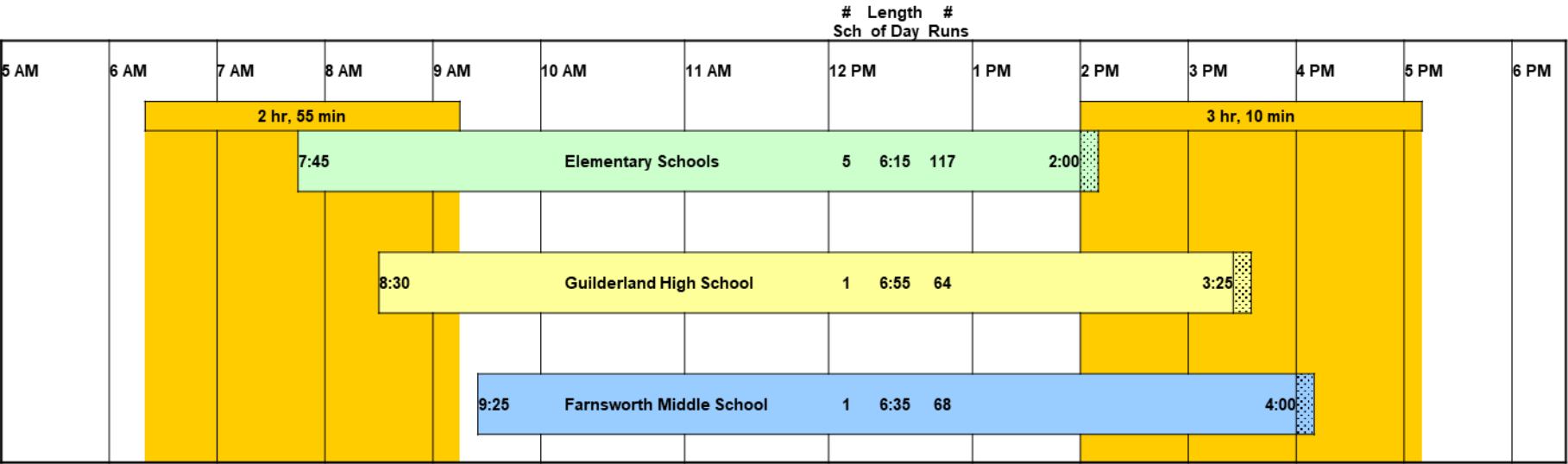
PM DEPLOYMENT MODEL

Guilderland Central School District Deployment Model PM - Vehicles in Operation Carrying Students



SCENARIO 1

Guilderland Central School District



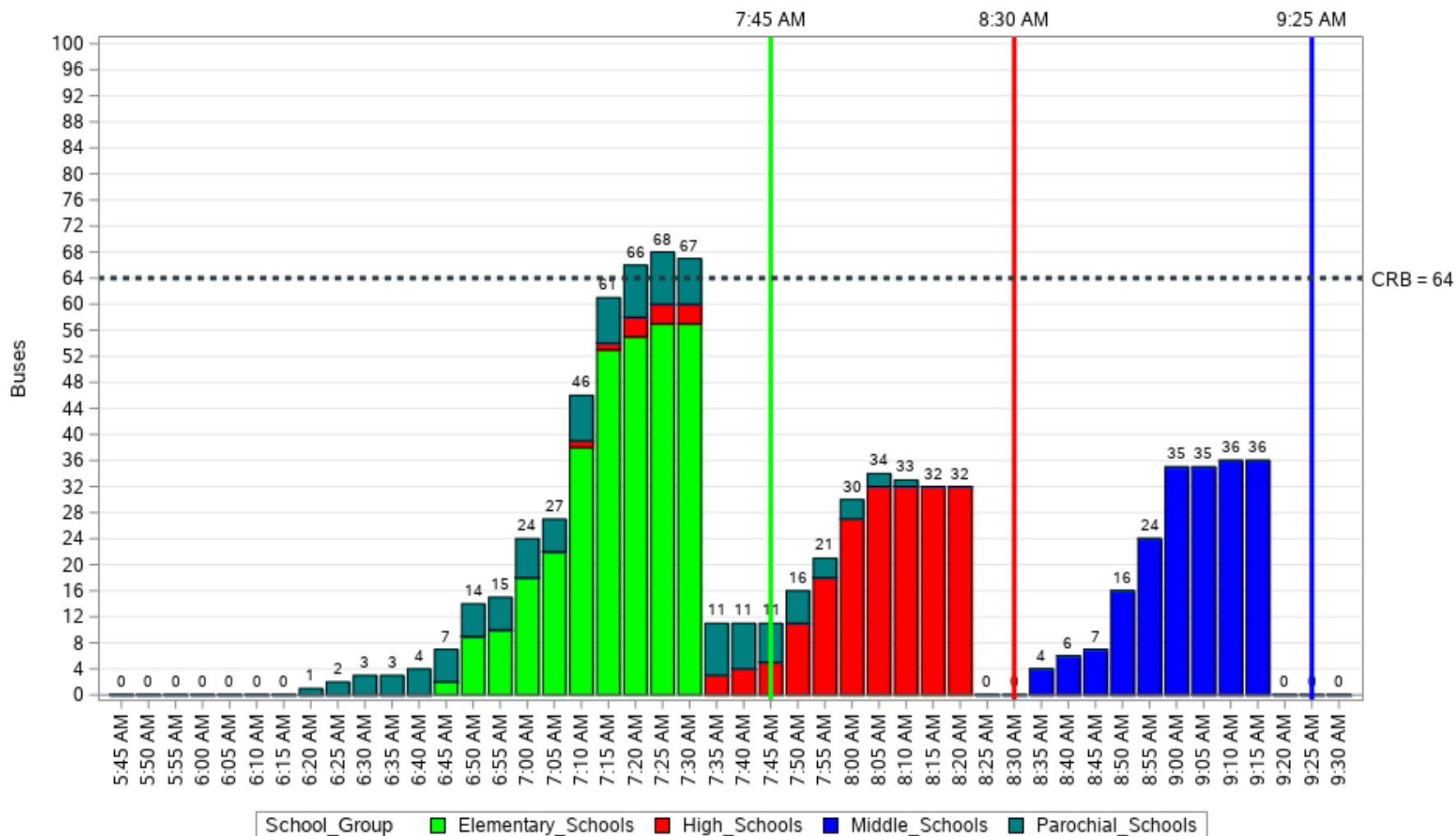
SCENARIO 1 DROP TIMES

Level	Start	Drop Time	End Time	Departure
Elementary Schools	7:45 AM	7:30 AM	2:00 PM	2:05 PM
Middle School	9:25 AM	9:15 AM	4:00 PM	4:10 PM
High School	8:30 AM	8:20 AM	3:25 PM	3:45 PM



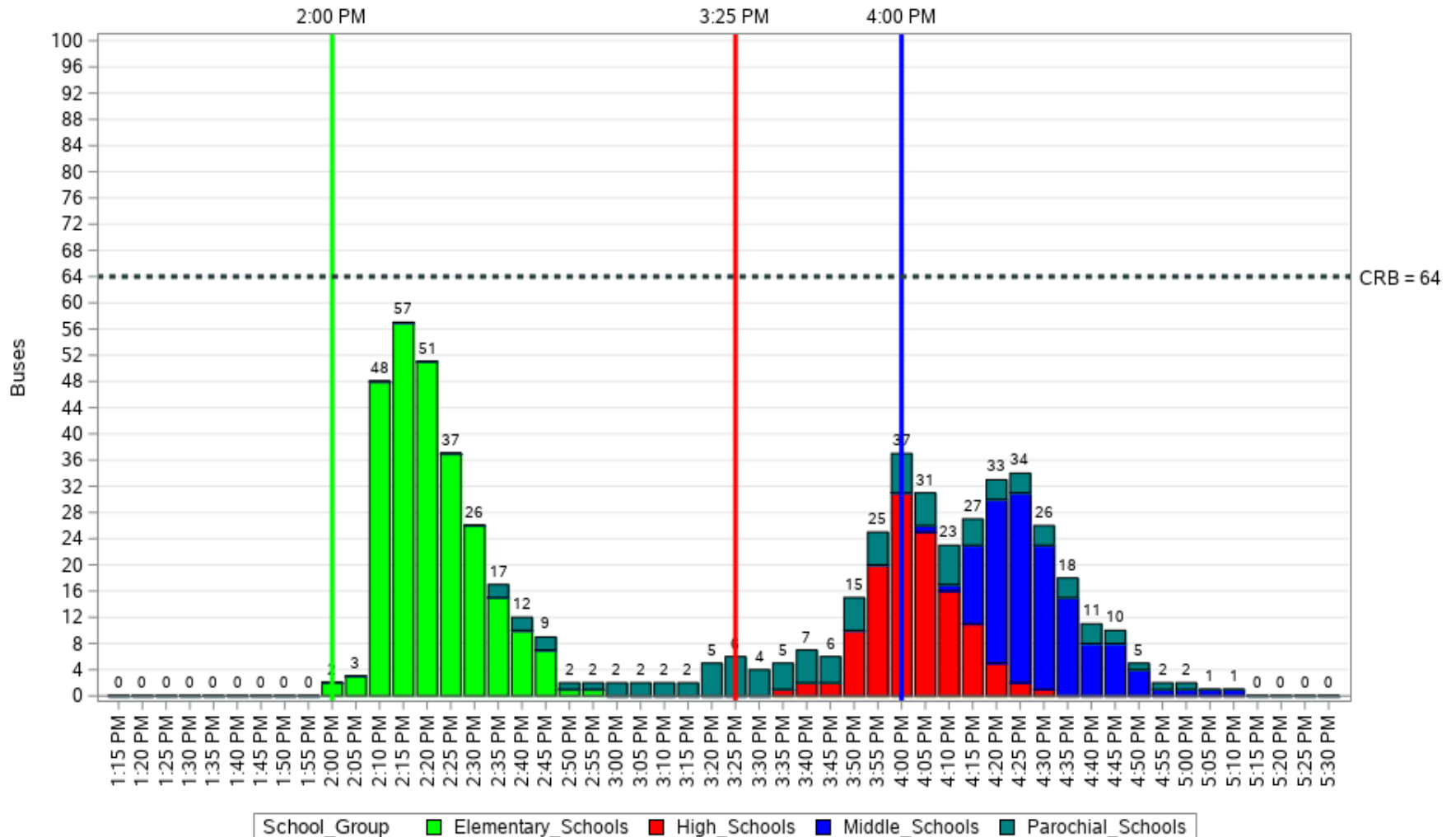
SCENARIO 1: AM DEPLOYMENT

Guilderland Central School District Deployment Model AM - Vehicles in Operation Carrying Students



SCENARIO 1: PM DEPLOYMENT

Guilderland Central School District Deployment Model PM - Vehicles in Operation Carrying Students

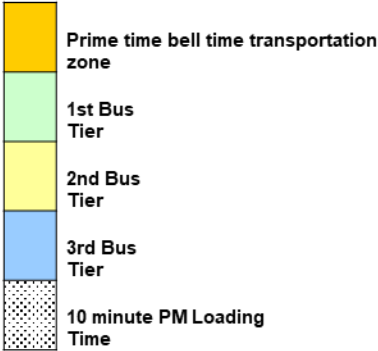
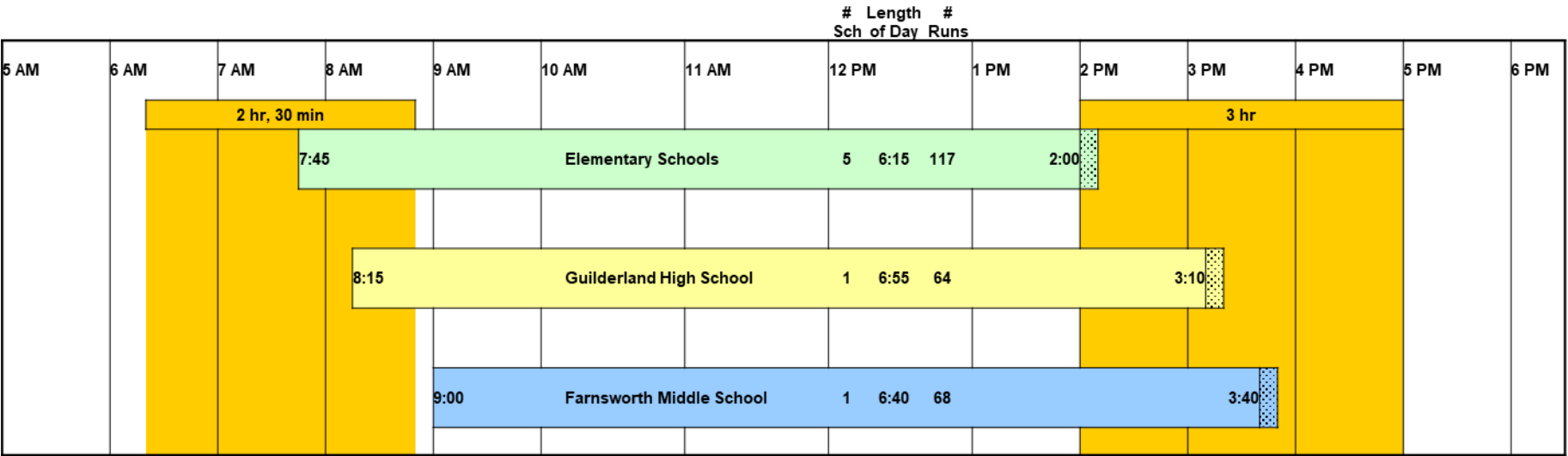


SCENARIO 1 PROS AND CONS

- Minimally affects Elementary School times, Middle School students affected by a 40 minute move and High School students affected with the 60 minute move
- By changing the current route structure (drop off times), there is now a 50 minute work time between the elementary and high school tiers in the morning providing ample time for the system wide average run time of 24 minutes.
- This scenario adds approximately **+4 buses** to the morning demand from the total active route buses equating to a potential **\$350,908** cost increase (\$87,727 per bus)

SCENARIO 2

Guilderland Central School District



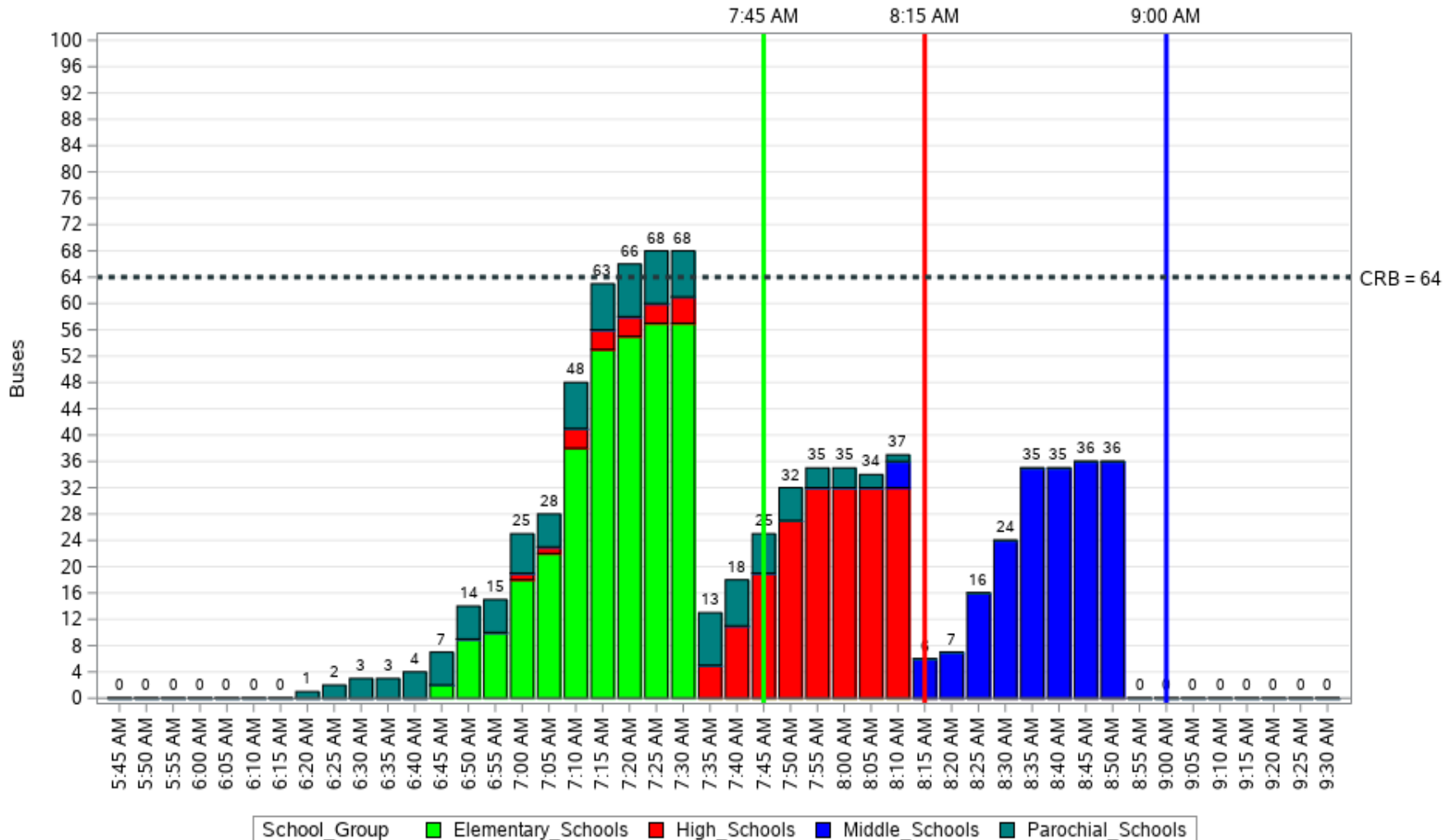
SCENARIO 2 WITH DROP TIMES

Level	Start	Drop Time	End Time	Departure
Elementary Schools	7:45 AM	7:30 AM	2:00 PM	2:05 PM
Middle School	9:00 AM	8:50 AM	3:40 PM	3:50 PM
High School	8:15 AM	8:10 AM	3:10 PM	3:30 PM



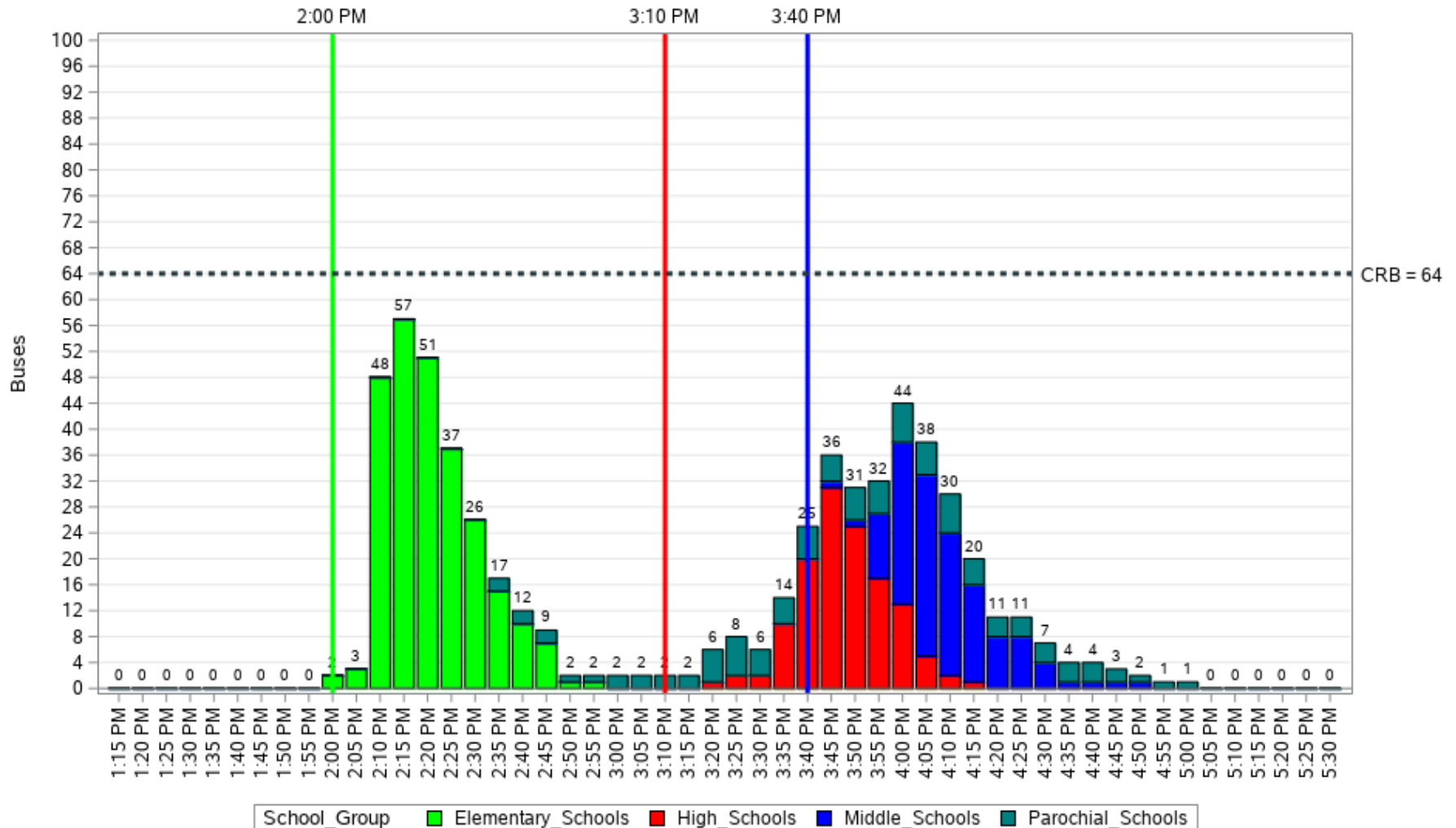
SCENARIO 2: AM DEPLOYMENT

Guiderland Central School District Deployment Model AM - Vehicles in Operation Carrying Students



SCENARIO 2: PM DEPLOYMENT

Guilderland Central School District Deployment Model PM - Vehicles in Operation Carrying Students



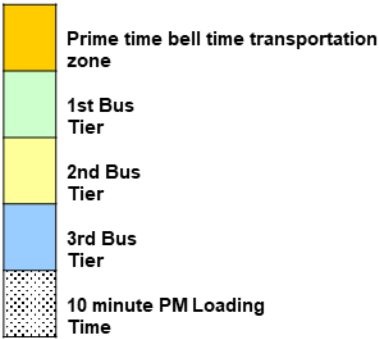
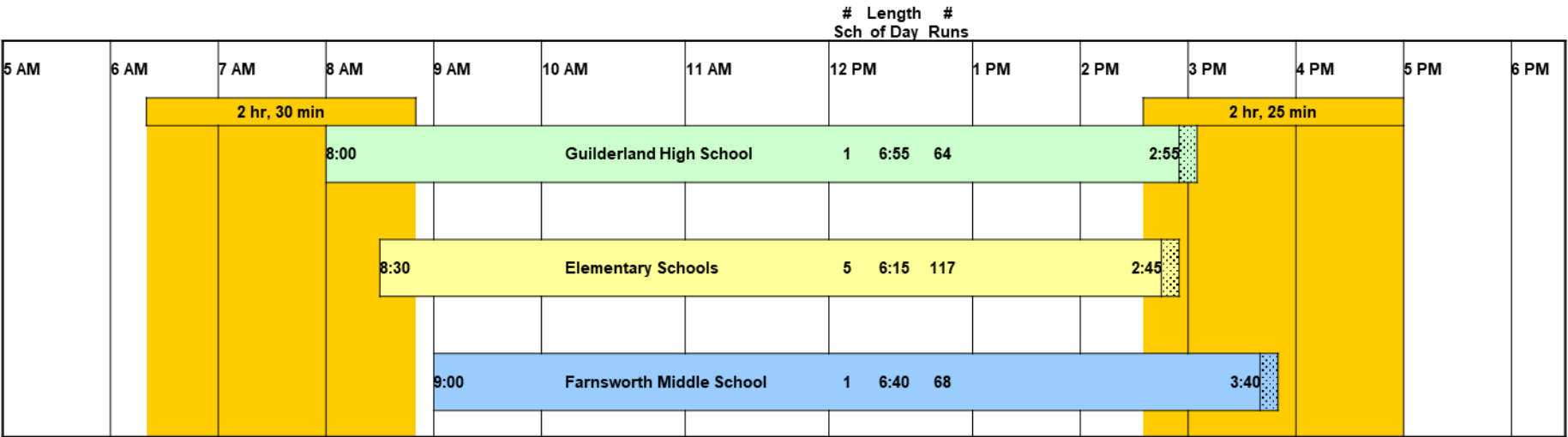
SCENARIO 2 PROS AND CONS

- Minimally affects Elementary and Middle School times, High School students affected with the 45 minute move
- By changing the current route structure (drop off times), there is now a 40 minute available worktime between elementary and high school tiers allowing for the 24 minute systemwide average run length
- This scenario adds approximately **+4 buses** to the morning demand from the total active route buses equating to a potential **\$350,908** cost increase (\$87,727 per bus)



SCENARIO 3

Guilderland Central School District



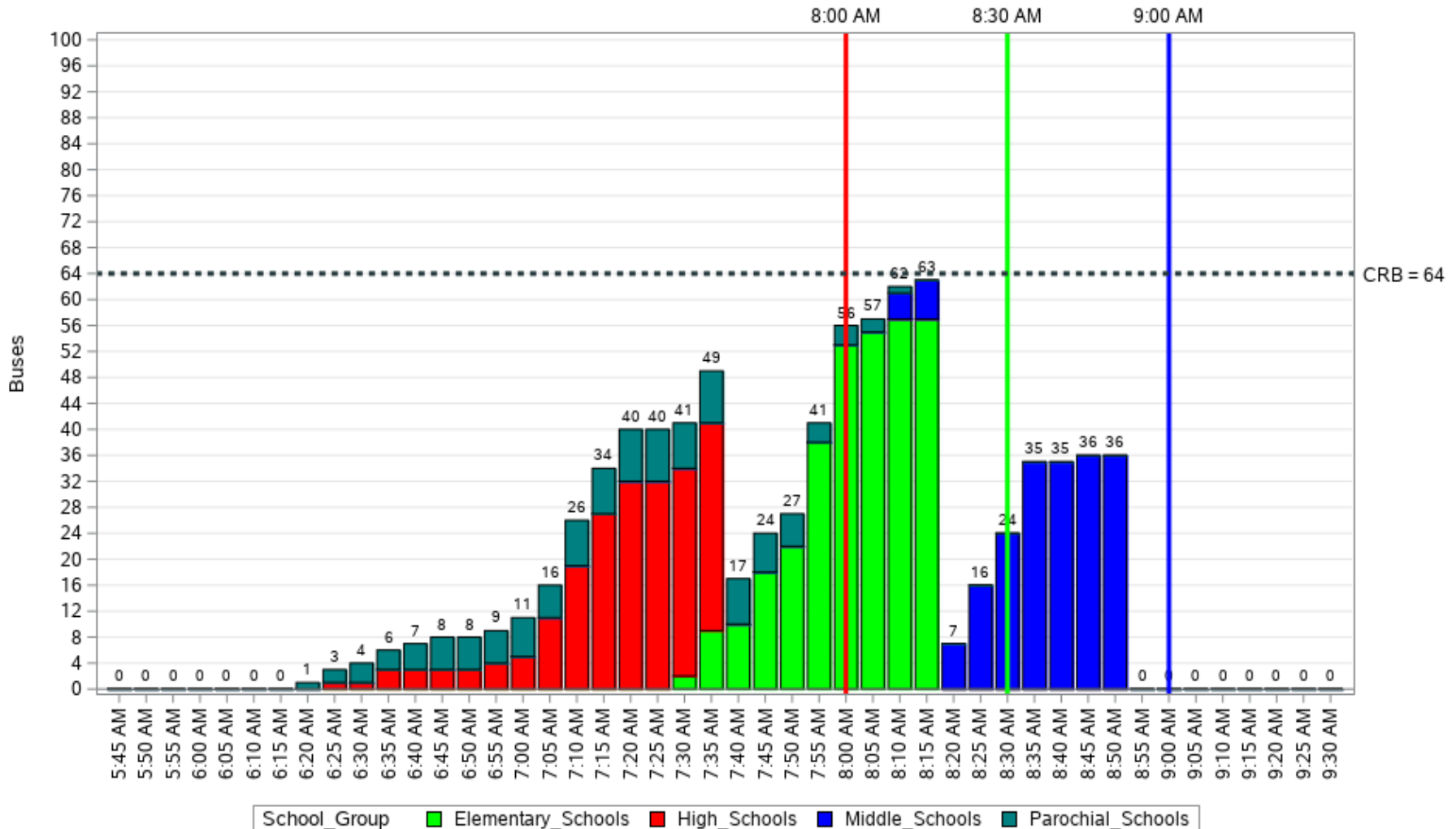
SCENARIO 3 DROP TIMES

Level	Start	Drop Time	End Time	Departure
Elementary Schools	8:30 AM	8:15 AM	2:45 PM	2:50 PM
Middle School	9:00 AM	8:50 AM	3:40 PM	3:50 PM
High School	8:00 AM	7:35 AM	2:55 PM	3:15 PM



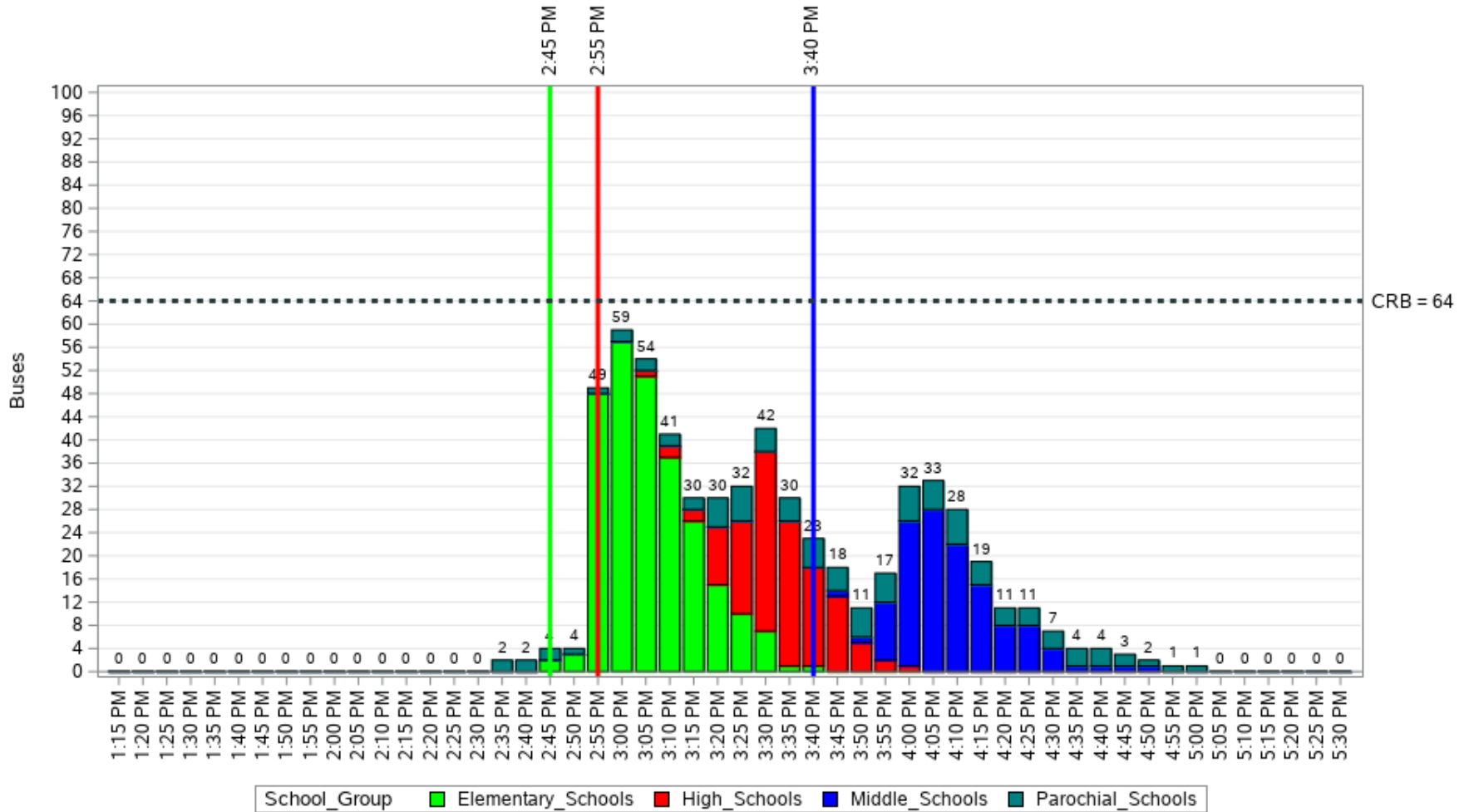
SCENARIO 3: AM DEPLOYMENT

Guilderland Central School District Deployment Model AM - Vehicles in Operation Carrying Students



SCENARIO 3: PM DEPLOYMENT

Guilderland Central School District Deployment Model PM - Vehicles in Operation Carrying Students

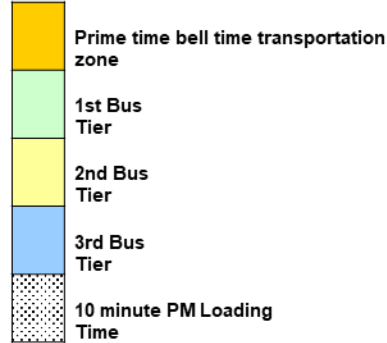
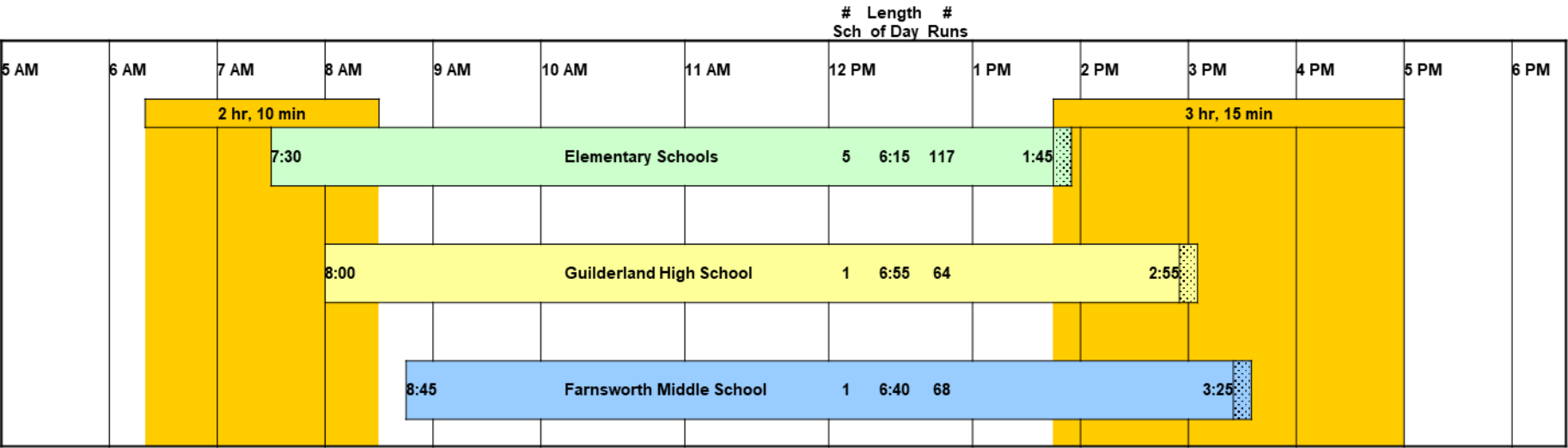


SCENARIO 3 PROS AND CONS

- Minimally affects Middle School times, High School students affected with the 30 minute move while Elementary School Students are affected with a 40 minute move
- By changing the current route structure (drop off times), there is now a 35 minute available worktime between elementary and middle school tiers allowing for the 24 minute systemwide average run length
- This scenario adds approximately **+0** buses to the morning demand from the total active route buses equating to a potential **\$0** cost increase (\$87,727 per bus)

SCENARIO 4

Guilderland Central School District



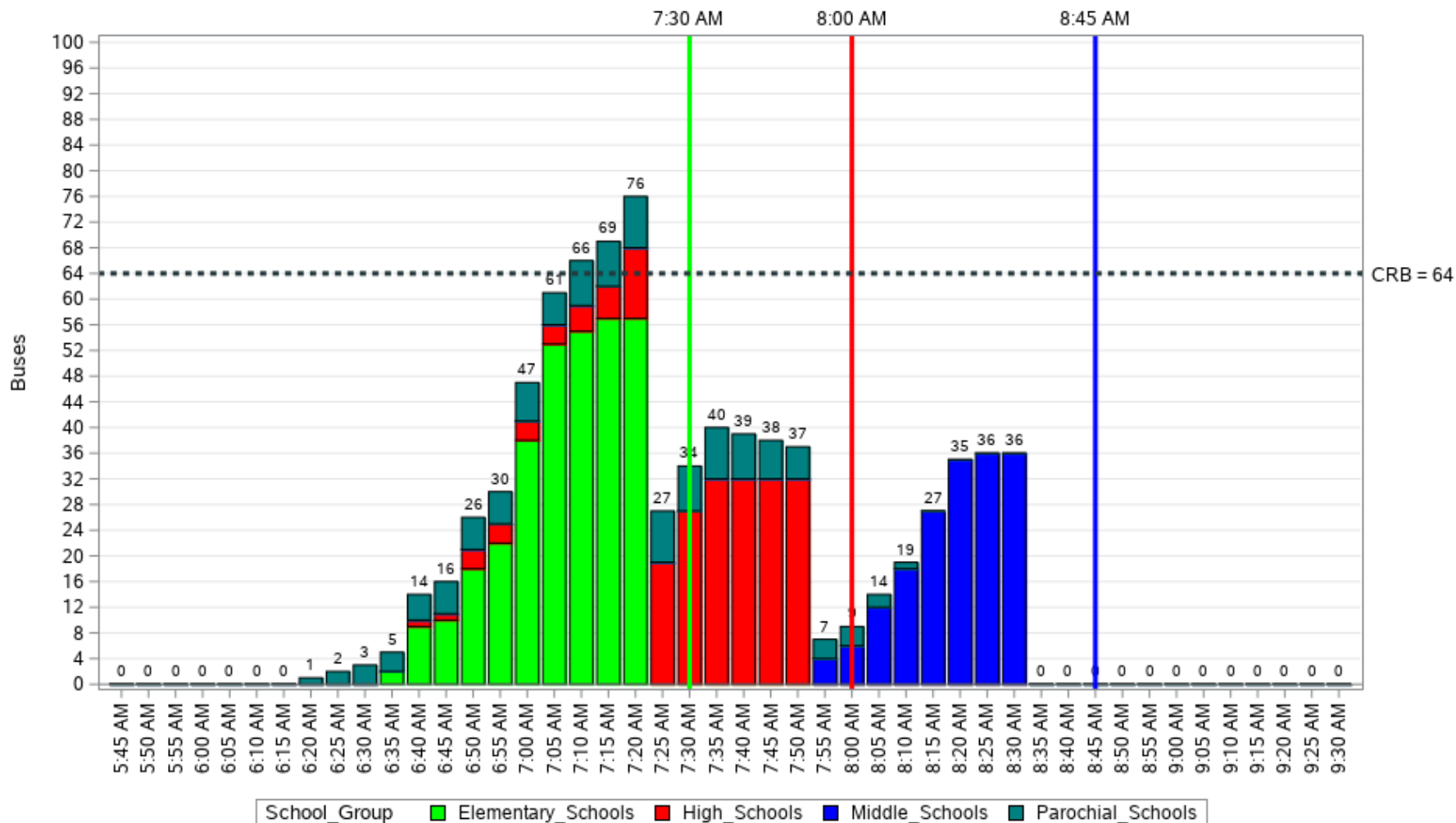
SCENARIO 4 WITH DROP TIMES

Level	Start	Drop Time	End Time	Departure
Elementary Schools	7:30 AM	7:20 AM	1:45 PM	1:50 PM
Middle School	8:45 AM	8:33 AM	3:25 PM	3:35 PM
High School	8:00 AM	7:50 AM	2:55 PM	3:15 PM



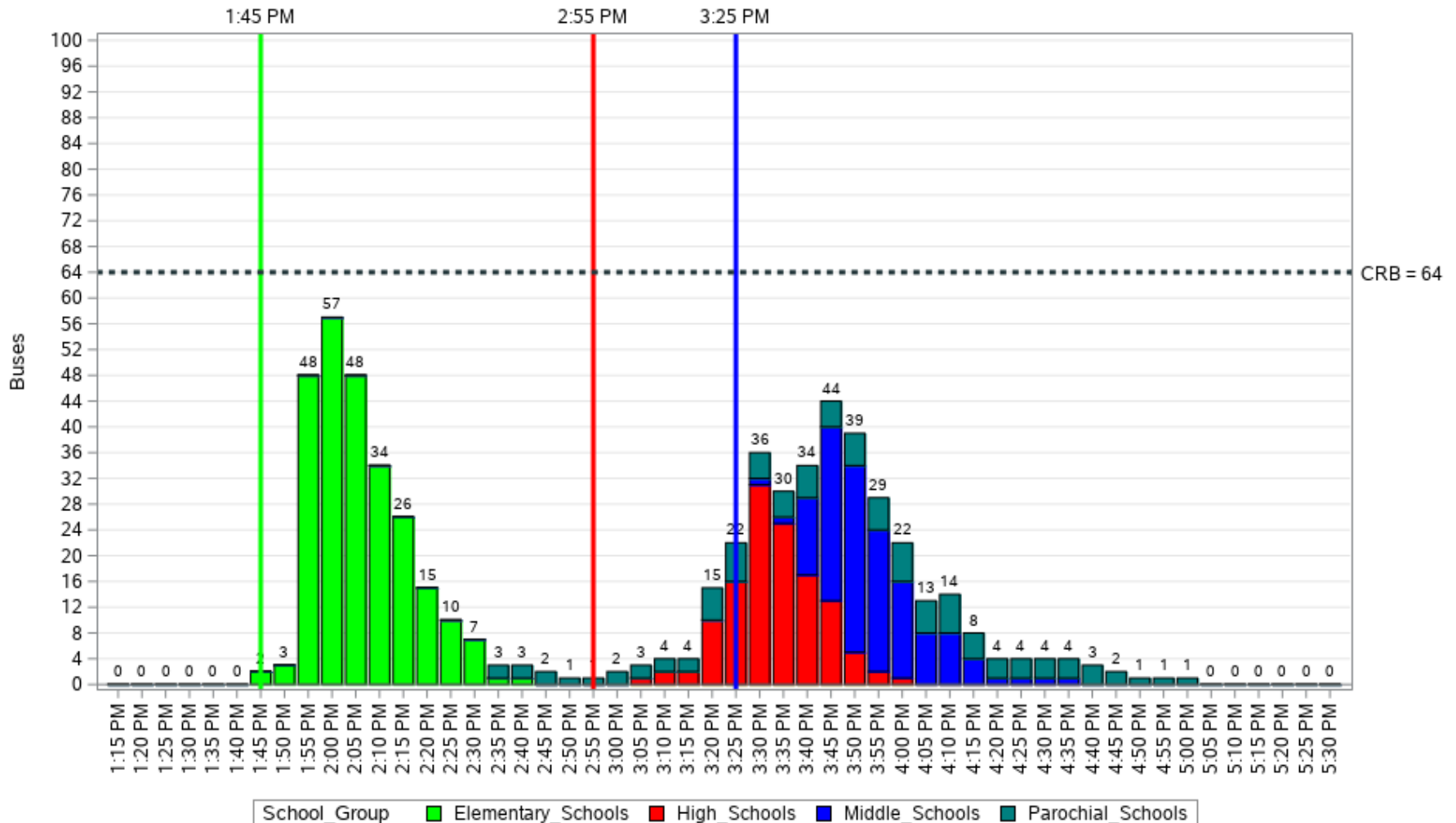
SCENARIO 4: AM DEPLOYMENT

Guilderland Central School District Deployment Model AM - Vehicles in Operation Carrying Students



SCENARIO 4: PM DEPLOYMENT

Guilderland Central School District Deployment Model PM - Vehicles in Operation Carrying Students



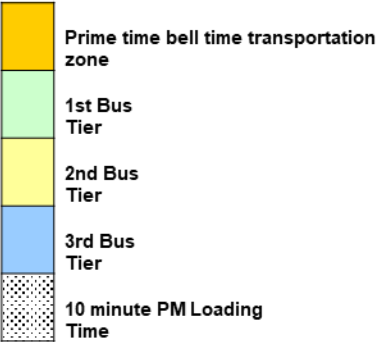
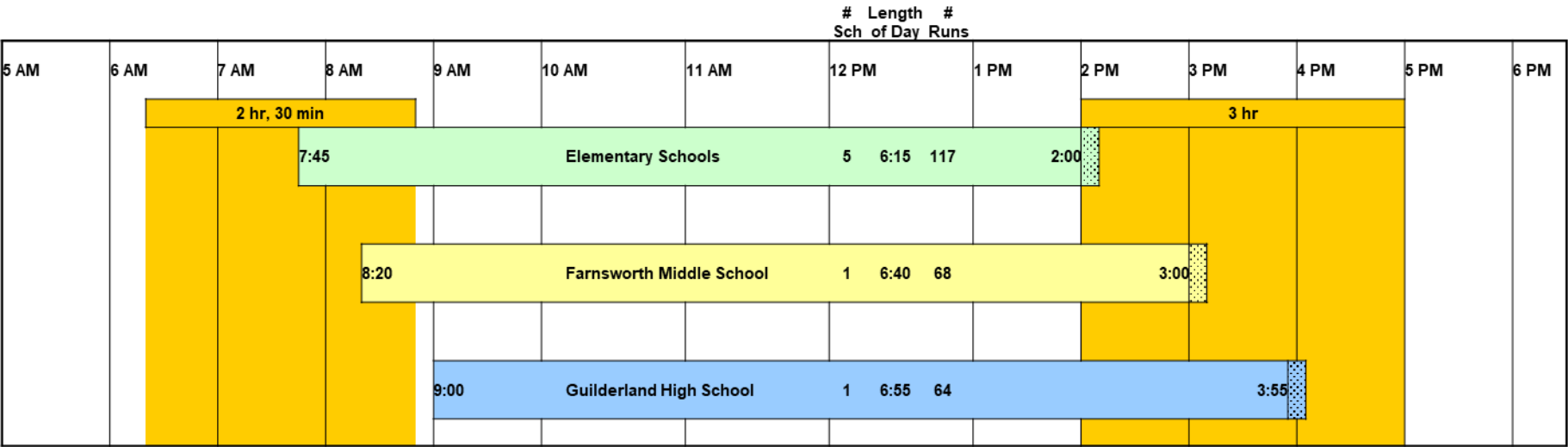
SCENARIO 4 PROS AND CONS

- Flips High School and Elementary Times
- Minimally affects Elementary Middle School times, High School students affected with the 30 minute move
- Even though the current route structure was changed there is still a potential for late buses in the event of traffic since there are 30 minutes between the drop off times for Elementary and High Schools with a 24 minute systemwide average run length
- This scenario adds approximately **+12** buses to the morning demand from the total active route buses equating to a potential **\$1,052,724** cost increase (\$87,727 per bus)



SCENARIO 5

Guilderland Central School District



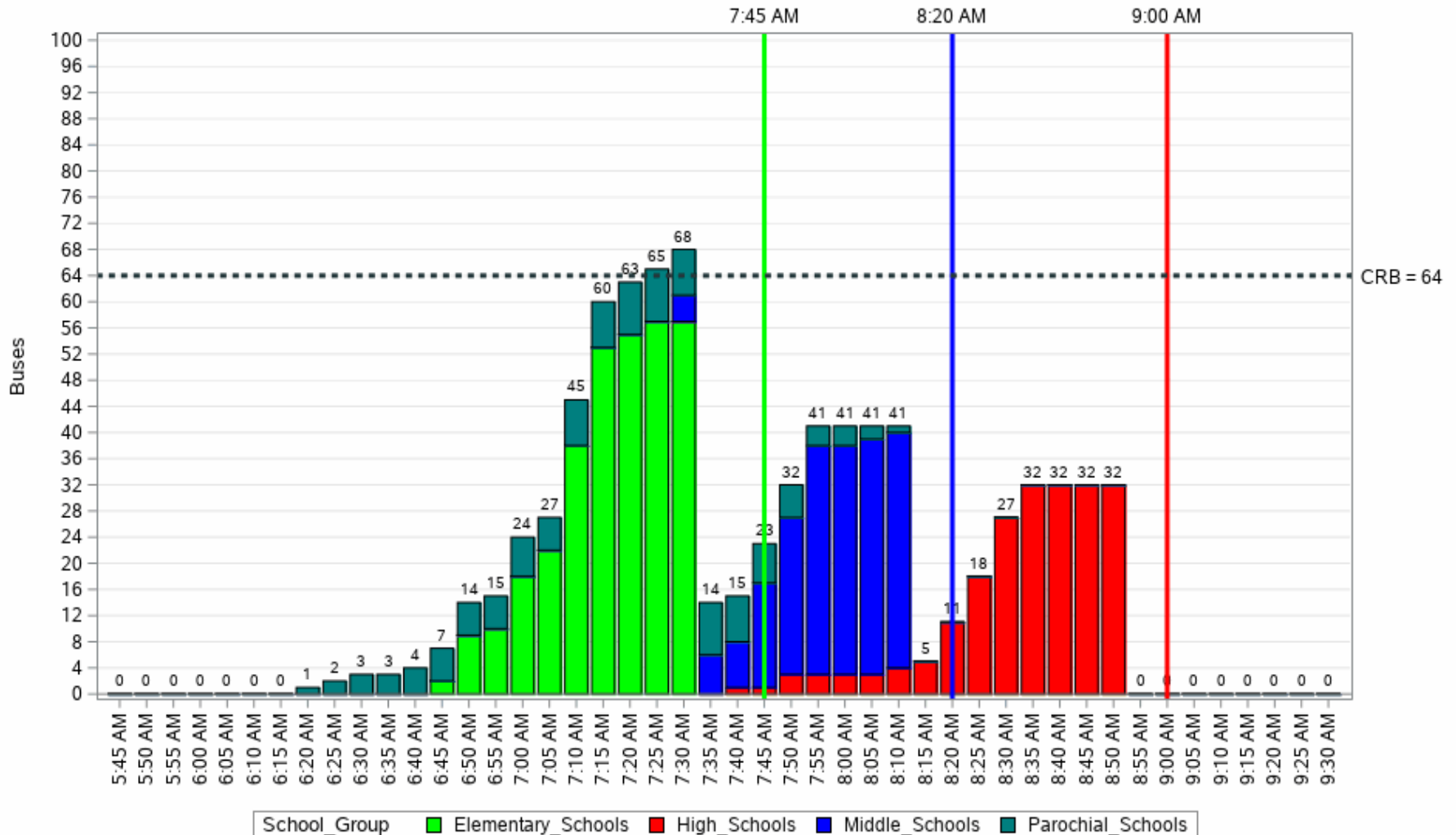
SCENARIO 5 WITH DROP TIMES

Level	Start	Drop Time	End Time	Departure
Elementary Schools	7:45 AM	7:30 AM	2:00 PM	2:05 PM
Middle School	8:20 AM	8:10 AM	3:00 PM	3:10 PM
High School	9:00 AM	8:50 AM	3:55 PM	4:15 PM

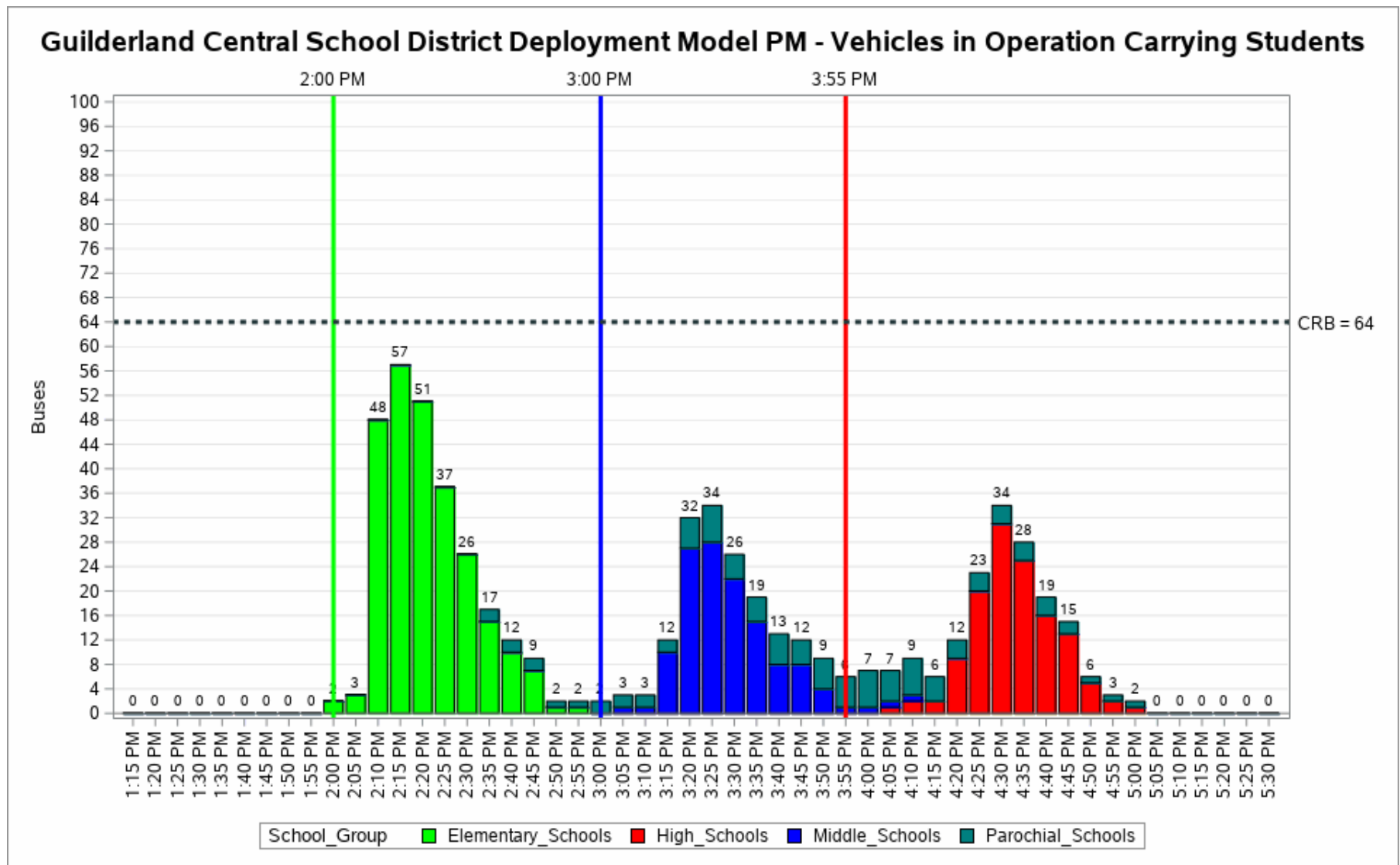


SCENARIO 5: AM DEPLOYMENT

Guilderland Central School District Deployment Model AM - Vehicles in Operation Carrying Students



SCENARIO 5: PM DEPLOYMENT



SCENARIO 5 PROS AND CONS

- Minimally affects Elementary and Middle School times, High School students affected with the 90 minute move
- By changing the current route structure (drop off times) there are now 40 minutes between the drop off times of all three tiers allowing for the 24 minute systemwide average run length
- This scenario adds approximately **+4 buses** to the morning demand from the total active route buses equating to a potential **\$350,908** cost increase (\$87,727 per bus)

SUMMARY OF SCENARIOS

	Current	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
Minimum Buses Need for Peak Deployment	57	68 (+4)	68 (+4)	63	76 (+12)	68(+4)
Potential Minimum Expense		+\$350,908	+\$350,908	+\$0	+\$1,052,724	+\$350,908
Window of Transportation	5 hours 20 mins	6 hours 5 mins	5 hours 30 mins	4 hours 55 mins	5 hours 25 mins	5 hours 30 mins
Bell Times						
High School	7:30 am 2:25 pm	8:30 am 3:25 pm	8:15 am 3:10 pm	8:00 am 2:55 pm	8:00 am 2:55 pm	9:00 am 3:55 pm
Elementary School	7:50 am 2:05 pm	7:45 am 2:00 pm	7:45 am 2:00 pm	8:30 am 2:45 pm	7:30 am 1:45 pm	7:45 am 2:00 pm
Middle School	8:45 am 3:25 pm	9:25 am 4:00 pm	9:00 am 3:40 pm	9:00 am 3:40 pm	8:45 am 3:25 pm	8:20 am 3:00 pm

RECOMMENDATIONS

- **Scenario 2:** sets High School Bell times to the start time of 8:15 am
 - Elementary students will not arrive before 7:30 am
 - MS students do not start until 9:00 AM
 - Potential addition of 4 buses (+458,576)
- **Scenario 3:** sets High School bell times to start time of 8:00 am
 - Keeps the tier order of High, Elementary, and Middle School in AM and Elementary, High, and Middle School in PM the same
 - Middle school students do not start until 9:00 am
 - Potentially will require no new additional buses
- **Scenario 5:** sets High School bell times to start at 9:00 am
 - Minimally affects Elementary and Middle School students
 - Elementary students will not arrive before 7:30 am
 - Potential addition of 4 buses (+458,576)

FOR QUESTIONS & COMMENTS

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