

# Transportation Safety Briefing

Prepared by Boston Public Schools Department of Transportation  
March 24, 2014

## **I. Literature Review on Comparative Safety Between School Bus and other Modes in Response to Councilor Tito Jackson's Concerns**

Few studies exist to answer questions about the relative safety of school buses versus other modes of transportation – namely transit bus, heavy rail (subway), and light rail (at-grade rail – like the green line). Even fewer of these studies focus directly on the comparison between school bus and public transit modes for home-to-school transportation for youth.

The citations and selected text, data, and graphical excerpts listed below are representative of the information available on the subject of the relative safety of various modes of transportation for students. They can be summarized as generally asserting the following key conclusions:

- School bus transportation is among the safest modes of transportation that exist;
- Bus transportation generally speaking (including school bus and transit bus) is statistically the safest mode of transportation, but insufficient data exists to differentiate between school bus and transit bus as alternatives;
- All types of mass transit – including school bus – are eminently more safe than riding in private cars, and offer substantial environmental and traffic reduction benefits;
- Teen drivers are statistically much less safe for students to ride with than adult drivers; and
- Walking and biking can be a safe alternative and can provide ancillary environmental and wellness benefits to students provided there are safe routes to school.

### **1. “The Relative Risks of School Travel” (US Transportation Research Board, 2002)**

“The highest rate of student injuries and fatalities per trip during normal school travel hours occurs for passenger vehicles with teenage drivers, followed by student cyclists (see Table ES-3). On a per-mile basis, however, school-aged bicyclists have the highest injury and fatality rates, followed by school-aged pedestrians, then students who travel in passenger vehicles with teenage drivers. The fatality rates for passenger vehicles driven by teenagers is roughly 8 times higher than the rate for those driven by adults. School buses and other buses have the lowest injury and fatality rates.” (Executive Summary, p.5)

**TABLE ES-2 Average Annual Student Injuries and Fatalities by Mode During Normal School Travel Hours**

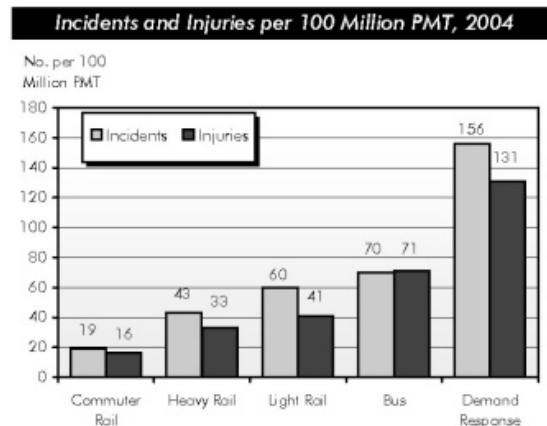
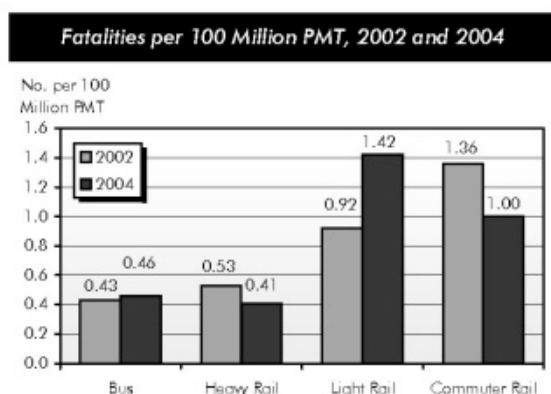
Mode	Injuries (%)	Fatalities (%)
School bus	6,000 (4)	20 <sup>a</sup> (2)
Other bus	550 (<1)	1 (<1)
Passenger vehicle, adult driver	51,000 (33)	169 (20)
Passenger vehicle, teen driver	78,200 (51)	448 (55)
Bicycle	7,700 (5)	46 (6)
Walking	8,800 (6)	131 (16)
<b>Total</b>	<b>152,250 (100)</b>	<b>815 (100)</b>

<sup>a</sup> Includes 5 passenger and 15 pedestrian fatalities.  
Source: 1991–1999 FARS and GES.

**2. “Status of the Nation’s Highways, Bridges, and Transit: 2006 Conditions and Performance” (Report updated in 2011)**

<http://www.fhwa.dot.gov/policy/2006cpr/es05t.htm>

- “Fatalities, adjusted for PMT [passenger miles traveled], are lowest for motorbuses and heavy rail systems. Fatality rates for commuter and light rail have, on average, been higher than fatality rates for heavy rail. Commuter rail has frequent grade crossings with roads and shares track with freight rail vehicles; light rail is often at grade level and has minimal barriers between streets and sidewalks.”
- “Incidents and injuries, when adjusted for passenger-miles-traveled, are consistently the lowest for commuter rail and highest for demand response systems.”



3. "Road Accident Risks of Various Transport Modes" (Scotland, 2000)

<http://www.scotland.gov.uk/Publications/2002/09/15148/9192>

Chart 3.2 Child\* Casualties by Mode of Transport and Severity, 2000

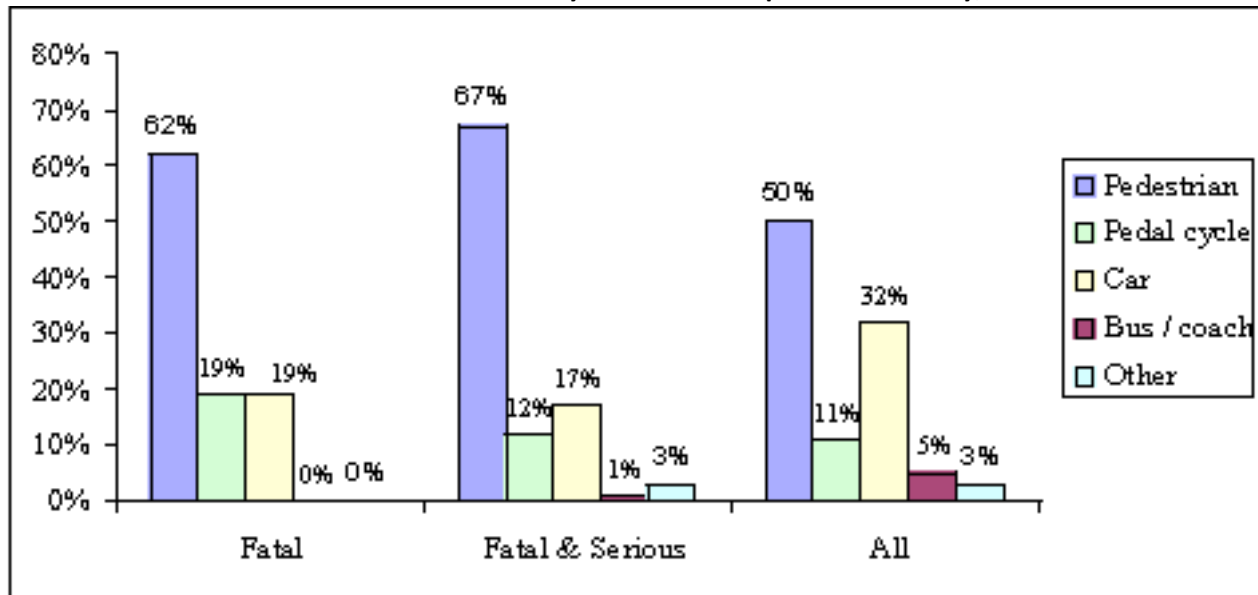
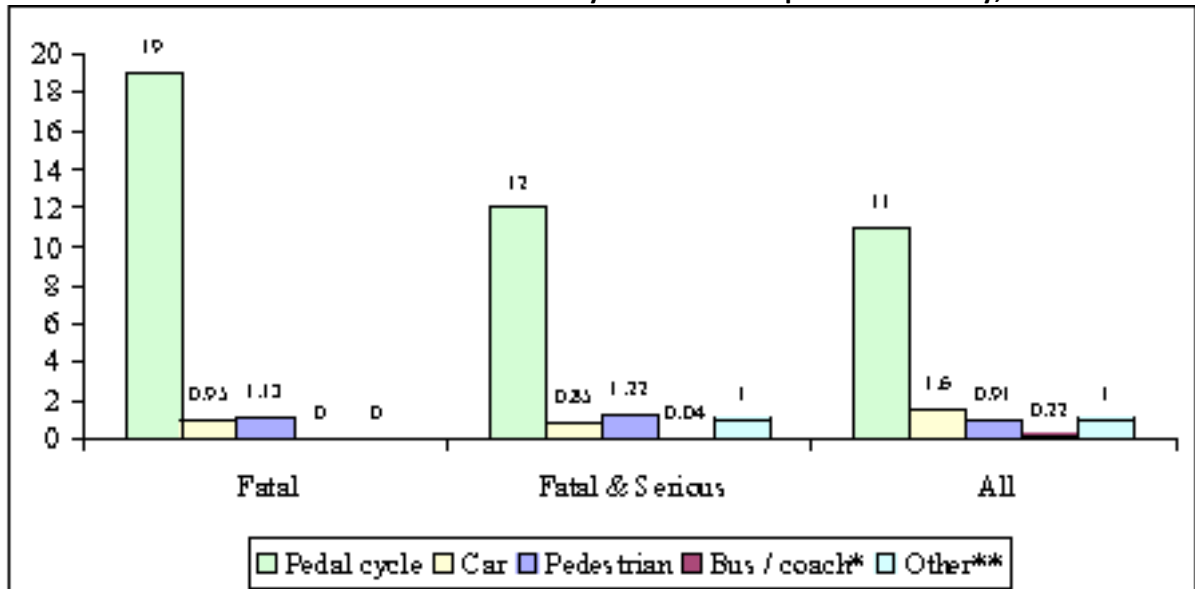


Chart 3.3 Risk Index of Child Casualties by Mode of Transport and Severity, 2000



\*Includes school bus and service bus

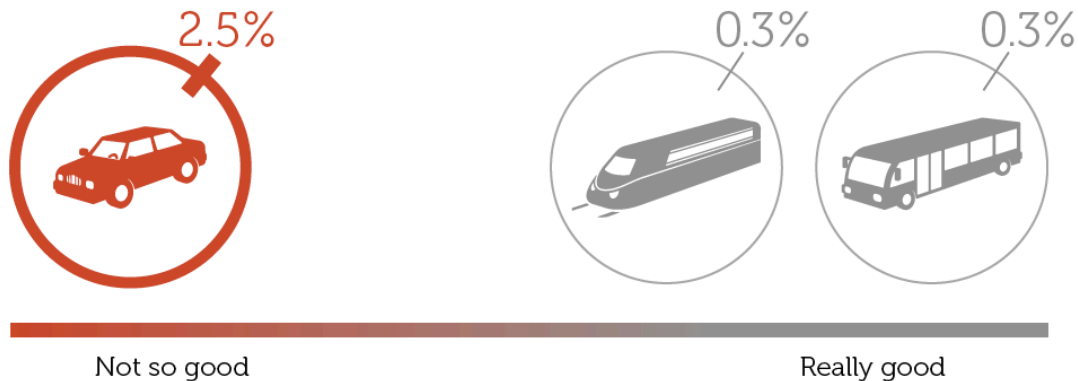
\*\*Includes rail

#### 4. Bus and Coach Travel, Safe Facts and Figures (UK, 2009)

[http://www.busandcoach.travel/en/safe/safe\\_facts\\_and\\_figures.htm](http://www.busandcoach.travel/en/safe/safe_facts_and_figures.htm)

## Average UK fatality rate over a 10 year period

(per billion passenger kilometres)



DfT transport trends 2009

## II. BPS & Veolia's Data on Incidents Involving Students Currently on BPS Buses

NOTE: There is very little data and research to be found on the deleterious effects of bullying or violence against students in various modes of transportation, so no such data may be presented here. Instead, in this section we present detailed data gathered by BPS Transportation and Veolia via various channels on the types and volume of incidents that occur on our school buses. We do not currently gather data on the holistic impacts of these incidents, and we rely on schools, the police, and other community partners to use our reports of incidents that occur on school buses to support students and help us to resolve issues. Even the National Center for Education Statistics defines events of violence or trauma occurring "at school" as being in school buildings, on school grounds, on school buses, and at places that hold school-sponsored events or activities. (<http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2013036>)

### 1. Total BPS Bus Driver Incident Reports Received

2011-12	2012-13	2013-2014 (through 3/21)
4,234	4,327	5,654*

\*We attribute the increase in driver incident reports this year to better standard operating procedures by Veolia as compared to our previous vendor in seeking out incident reports from drivers immediately upon their return to the bus yard each day. Veolia also is keeping better track of these reports after-the-fact.

## 2. Top 20 Schools in Terms of Driver Incident Reports, 2011-2013

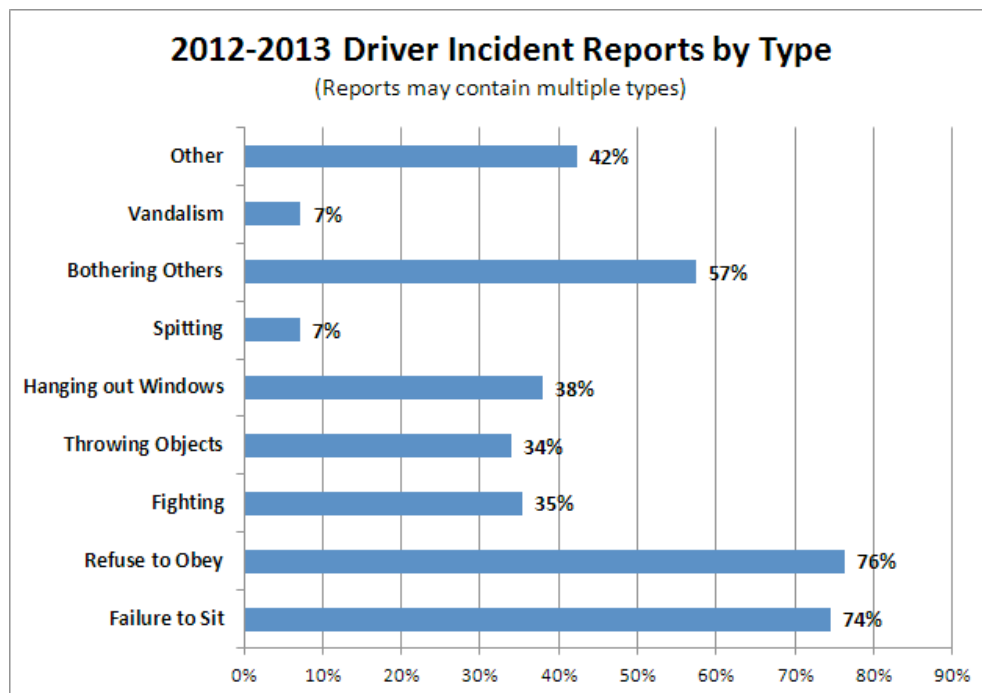
School	2011-12 Count	2011-12 Rank	2012-13 Count	2012-13 Rank
Dever Elementary	250	1	262	1
Edison K-8	165	2	179	2
Curley K-8	50	25	160	3
Chittick Elementary	44	28	144	4
Mattahunt Elementary	154	4	137	5
Jackson/Mann K-8	118	7	134	6
McCormack Middle	109	9	124	7
Ohrenberger	68	15	110	8
Boston Renaissance Elementary	142	5	108	9
Timilty Middle	118	7	107	10
Marshall Elementary	107	10	103	11
Holland Elementary	38	37	94	12
McKinley Elementary	20	67	86	13
Condon Elementary	37	39	86	13
Blackstone Elementary	121	6	83	15
McKinley So. End Acad	11	80	82	16
Kenny Elementary	61	19	74	17
Longview Farm	17	72	73	18
Channing Elementary	89	12	66	19
Tynan Elementary	68	15	66	19
Winthrop Elementary	72	14	65	21

## 3. Top 20 Schools in Terms of Driver Incident Reports, 2013-2014 (through 3/1)

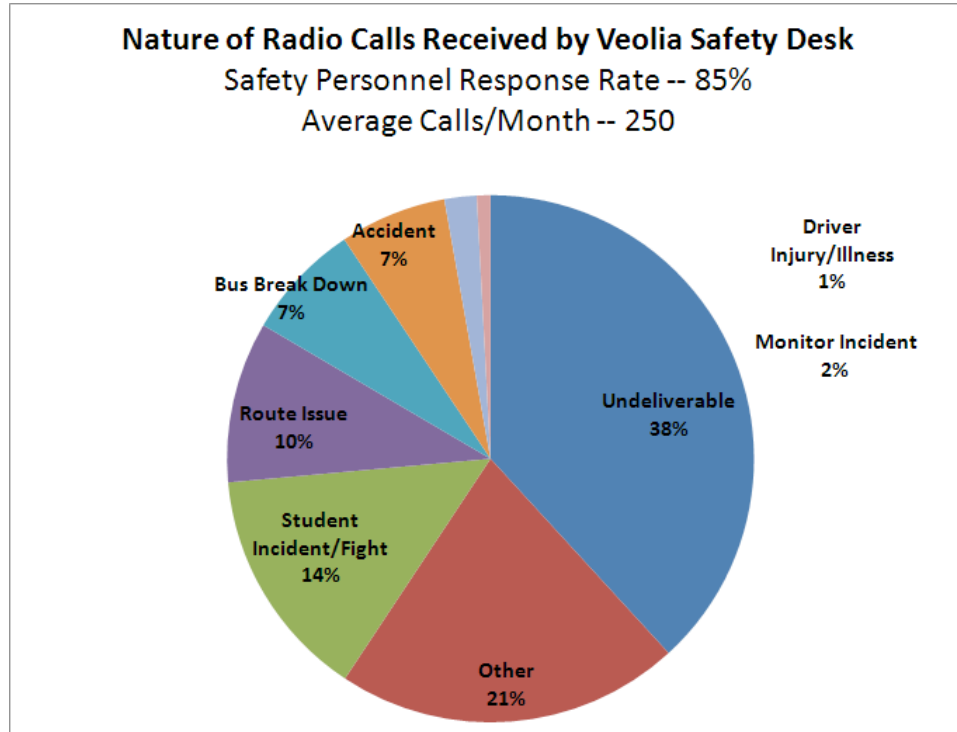
Rank	School	# Driver Incident Reports
1	Jackson/Mann	395
2	Edison K-8 Sch	302
3	Tynan ES	285
4	McCormack MS	259
5	Mattahunt ES	226
6	Dever ES	163
7	Edwards MS	150
8	Boston Renaissance ES	141
9	Holmes ES	123
10	McKinley ES	118
11	Curley K-8	117
12	Condon ES	109

Rank	School	# Driver Incident Reports
13	Channing ES	102
14	Kenny ES	94
15	Harvard Kent ES	90
16	Irving MS	89
17	Lee ES	87
18	Holland ES	82
19	S. Greenwood K-8	81
19	Hennigan ES	81
20	Perkins ES	80
20	Timilty MS	80

#### 4. Driver Incident Reports by Type



## 5. Veolia Safety Desk Reports and Deployment Data (SY2013-2014)

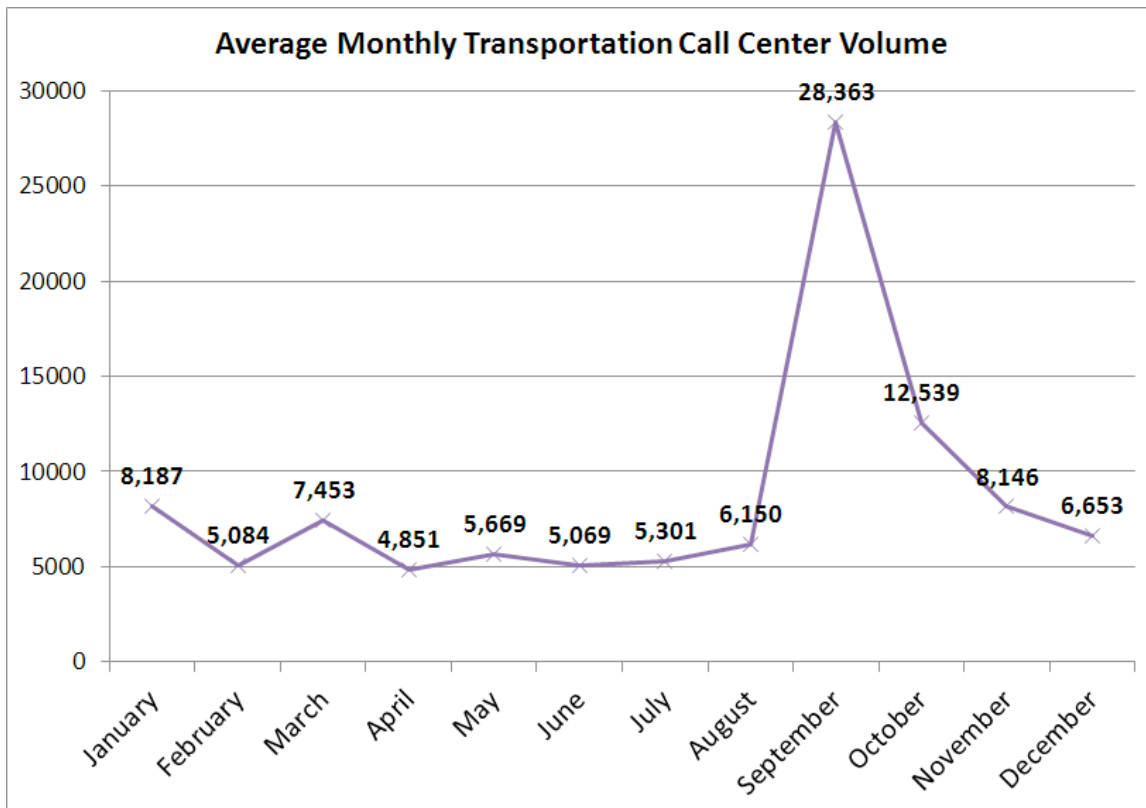


## 6. Top 20 Schools by Number of Safety Deployment Reports

Rank	School	2013-2014 Safety Deployment Report Count (through 3/1)
1	Edison	72
2	McCormack	54
3	McKinley	53
4	Tynan	45
5	Roxbury Prep	37
6	Curley	35
7	Jackson Mann	33
8	Mattahunt	31
9	Condon	29
9	Timilty	29
10	Dever	28
11	Channing	27
12	Renaissance	22
13	Beethoven	21
13	Edwards Middle	21
13	Mildred	21
14	UP Academy	19
15	Rogers	18

Rank	School	2013-2014 Safety Deployment Report Count (through 3/1)
15	Young Achievers	18
16	Chittick	15
16	Irving Middle	15
17	Higginson	14
17	MLK	14
17	Ohrenberger	14
18	Blackstone	13
18	Lyons	13
19	S Greenwood	12
19	Kenny	12
19	Perkins Elementary	12
20	Conservatory Lab	11
20	Ellison Parks	11
20	Madison Park	11
20	Mission Hill	11

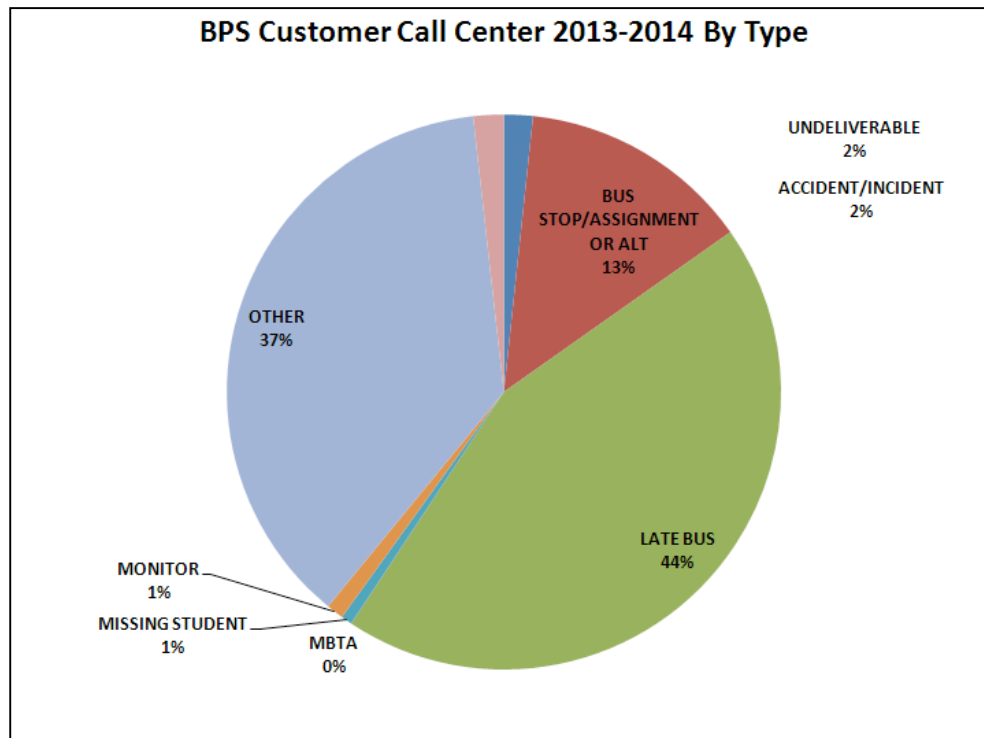
#### 7. BPS Call Center Complaints Data





### 8. Top 20 Schools in Terms of Call Volume (2013-2014)

Rank	School	Calls (year to date)
1	Edison K-8	334
2	Jackson/Mann K-8	278
3	Mattahunt Elementary	274
4	Dever Elementary	258
5	Tynan Elementary	257
6	Condon Elementary	255
7	Blackstone Elementary	236
8	Boston Renaissance Elementary	236
9	McCormack Middle	231
10	UP ACADEMY/Dorchester	227
11	Curley K-8	219
12	Holland Elementary	194
13	Taylor Elementary	194
14	Lee Elementary	193
15	Orchard Gardens K-8	189
16	Trotter ES	185
17	Lee Academy	179
18	Quincy Elementary	179
19	Holmes Elementary	171
20	King K-8 School	170



## 9. Existing Data from the MBTA Police of Incidents involving Students

### Youth Enforcement Activity During School Hours: September 1<sup>st</sup> – June 25<sup>th</sup>

SCHOOL YEAR	2002-2003	2003-2004	% of Change
Youths Arrested	72	53	-26%
Youths Referred*	28	56	100%

\*Referral data is hand tallied and should be used with discretion.

### School-Related Part I UCR Crime: School Year-to-Date (September – May)

UCR Group	UCR Sub-Group	98 - 99	99 - 00	00 - 01	01 - 02	02 - 03	03 - 04	5 YR AVG	% CHNG
Assault		83	66	67	107	90	113	83	37%
	Firearms	2	0	2	0	0	0	1	-100%
	Hands/Fists/Feet	0	0	0	0	0	4	0	UNCALC
	Knife/ Cut	7	8	13	7	7	4	8	-52%
	Other Weapon	14	8	9	9	18	11	12	-5%
	Simple	60	50	43	91	65	94	62	52%
Criminal Homicide		0	0	0	0	0	1	0	UNCALC
	Murder/ NonNeg MNSL	0	0	0	0	0	1	0	UNCALC
Larceny-Theft		16	15	7	10	14	16	12	29%
	Bikes	2	1	2	1	0	1	1	-17%
	From MV	6	5	0	0	4	1	3	-67%
	Other	4	3	1	3	2	6	3	131%
	Pick-Pocket	3	5	3	6	8	6	5	20%
	Shoplifting	1	1	1	0	0	2	1	233%
MTR Vehicle Theft		1	0	0	0	2	0	1	-100%
	Autos	1	0	0	0	2	0	1	-100%
Robbery		20	38	34	24	22	48	28	74%
	Firearms	2	5	6	2	4	2	4	-47%
	Knife/ Cut	8	6	11	6	9	7	8	-13%
	Other Weapon	1	3	0	0	0	2	1	150%
	Strong Arm	9	24	17	16	9	37	15	147%
<b>Grand Total</b>		<b>120</b>	<b>119</b>	<b>108</b>	<b>141</b>	<b>128</b>	<b>178</b>	<b>123</b>	<b>44%</b>

\*Includes offenses occurring Monday – Friday between the hours of 0600 and 1600 and where at least one youth (18 or under) was identified as either a victim or offender.

## III. Implementation Planning

### Operations Planning with MBTA

BPS Transportation has been meeting weekly with MBTA Operations and Service Planning staff, sharing data, and analyzing the feasibility of the current policy proposal from an operational standpoint. BPS shared anonymous origin and destination data on all potentially affected students, and the MBTA plugged the data into their Trip Planner engine to see how the students would get to and from school. BPS also did manual ridership surveys of existing BPS shuttles to MBTA stations to include more accurate figures in the MBTA's analysis.

The MBTA studied the added passenger volume on existing routes and identified areas where BPS supplemental shuttles could bolster their capacity in key areas so that the passenger volume of students could be accommodated in the most expedient manner

Our joint analysis is ongoing, and any preliminary proposal for supplementary shuttles is subject to change based on further analysis and the input of additional safety data, which might serve to demonstrate the need for additional shuttles or service supplements elsewhere. Preliminarily, however, the following schools may be slotted to receive some kind of supplementary shuttle service based on the objective ridership analysis done to date:

- BLA
- O'Bryant/Madison Park
- Curley
- Edwards
- Frederick
- Irving
- McCormack
- Murphy
- Ohrenberger
- Rogers
- TechBoston
- Timilty
- West Roxbury HS

The following additional schools may be slotted to receive supplemental shuttle service based on our initial safety assessments:

- Excel HS
- Charlestown HS
- ACC/BGA/Brighton HS

The MBTA has also provided an innovative web tool and BPS is using it along with other data to do a comprehensive timing analysis to understand the effect on the length of the journey for students moving from BPS bus to the MBTA. BPS will continue to meet weekly with the MBTA to solidify and finalize the service needs and deployment of resources across the system to ensure student safety, consistent and equitable access to quality service for students, and optimal resource use.

### **Safety Planning with the MBTA, BPD, and BPS Police**

Formal discussions with BPS Police, BPS Transportation, BPD, and MBTA Police & Operations have begun and will continue through implementation of the new proposed policy. BPS has shared data on current schools using the MBTA, schools moving to the MBTA under the current policy proposal, locations of those schools, and bell time schedules so we may best assess the impact of new passengers on the extant safety situations at certain key stations and neighborhoods.

Initial assessments and discussions indicate that the biggest areas of concern are Ashmont, Forest Hills, Downtown Crossing, and Brighton Center. BPD, BPS Police, and the MBTA will come back to us with a deeper analysis once they have had time to review the data and synthesize it with their own data and experience.

On pedestrian safety, we are exploring MassRides/WalkBoston partnership opportunities which may be able to benefit specific schools and the system as a whole with professional development, safety and wellness programming support, and the potential for grant funding. The MBTA will work with BPS Transportation to engage school leaders and staff through the Stop Watch program – where school staff may be offered free monthly passes and training in exchange for a commitment to be present at stations – and through other gatherings and professional development sessions between now and the start of next school year. Safety officials have emphasized the importance of an ongoing commitment from school leaders to play an active role in and around MBTA stations and on routes to schools to and from MBTA stations.

#### **More Information on the MBTA Stop Watch Program**

<http://www.popcenter.org/library/awards/goldstein/2005/05-09.pdf>

- “*Stop Watch* brings together public and private sector partners in efforts to provide officer skill enhancement and positive youth intervention, thus significantly reducing the need for youth arrests while enhancing our referral resources. Our *StopWatch* initiative embodies our Plan of Action’s mantra: “Working Together to Protect Us All.””
- “In the field component of *Stop Watch*, we meet regularly with our community and law enforcement partners, both formally and informally, to assess and review our progress. ...We also have in place a Transit Police Community Advisory Committee comprised of civilian partners who come from diverse professional and personal backgrounds, as well as perspectives. This independent board meets with us regularly and provides an objective review of our activities. Our interactions with youth and the public perception thereof provide for serious and candid discussions.”
- “The Juvenile Justice Center, our key partner in the police/youth interaction trainings, provides daily monitoring of our *Stop Watch* initiative. As a youth advocacy agency, headed by an attorney, the Juvenile Justice Center is committed to assuring that the principles of reasonable police intervention that are taught in the trainings are actually practiced by us in the field.”
- “As well, we have within our department a full-time crime analyst who helps us quantify our claims to the public. We are able to review our data, which we gladly share with the public, and ascertain whether or not the numbers are consistent with our stated objectives in the *Stop Watch* initiative.”
- “With the establishment of our five Transit Police Service Areas (TPSA), which is a decentralization philosophy, we gain further analysis from the direct feedback of our constituents. The premise of the TPSA endeavor is to develop lasting relationships with each respective community and to empower the Area Commander – a Lieutenant, and TPSA officers, to problem-solve in partnership with the community.”
- “[P]art of our youth education efforts is to introduce a ‘consequences card,’ which

officers will provide at-risk youth as an opportunity for reflection on their conduct. This card, which we are developing in partnership with our Juvenile Justice Center partners, will, we anticipate, give pause to those youth who are critically close to the point of arrest but have not completely crossed the line. Where we can, we wish to allow for self-corrective behavior, which we feel is consistent with our commitment to maintaining the public's trust and confidence."

- "Communication and cooperation are the founding principles of *Stop Watch*. We communicate with our partners on a regular basis, indeed daily during the school year, as to problems, concerns and ideas. We actively solicit the cooperation and collaboration of our partners within the public and private sector. Note the following partners:
  - Boston Asian Youth Essential Services
  - Boston Center for Youth & Families
  - Boston College High School
  - Boston Plan for Excellence
  - Boston Police Department
  - Boston Public Schools
  - Boston School Police
  - Catholic Memorial High School
  - City Year – Boston
  - Department of Social Services (DSS)
  - Department of Youth Services (DYS)
  - Dom Savio High School
  - Dorchester Youth Collaborative
  - Harbor Point Youth and Administration
  - Juvenile Probation Department
  - Quincy Police Department
  - Quincy Public Schools
  - Showdown Youth Development Organization
  - Suffolk County District Attorney's Office – Juvenile Division
  - Suffolk University – Juvenile Justice Center
  - Teen Empowerment
- "First and foremost, we sought to decrease the incidents of youth arrests in such cases where alternative measures of conflict resolution might suffice. We sought as well to better train our officers in areas such as adolescent development so that we could better understand why youth behave in the manner that they do, as well as providing youth greater insight into the challenges of law enforcement. We sought to enhance our community partnerships throughout the eastern region of Massachusetts, including relationships with fellow law enforcement, school officials, youth workers, advocacy groups, businesses, churches, and so forth. Each *Stop Watch* activity is documented and we maintain a mailing list that is sent to each of our *Stop Watch* partners informing them of the weekly schedule. We sought to better educate youth as to the consequences of being arrested. Hopefully, this will cause some to reflect on their conduct before decisions are made that will adversely affect their future. With great pride, we can say that all of the aforementioned objectives were met, and indeed continue to be met, as this is an on-going project. One of the key outcomes of *Stop Watch* concerns the increased public visibility of our officers. We continue to receive

compliments from members of the public who express their sense of comfort and peace when they observe our uniformed officers interacting with youth while simultaneously maintaining control within the transit environment.”

### **Analysis of the Impacts on our Special Needs Population**

We have formally met with Sped Pac to review potentially impacted students who have IEPs but receive corner-to-corner transportation. We developed a list of fewer than 100 6<sup>th</sup> and 7<sup>th</sup> grade students affected, and we will do a “deep dive” with schools to determine whether the MBTA pass will be appropriate or where we need to continue to provide corner-to-corner transportation.

All substantially separate students will be closely reviewed by school-based teams to determine the students’ ability to access the MBTA in a safe manner. In the end, individual IEPs will dictate the specific service that individual students will receive, based on their disability and level of need.