



Transportation Services



GPS

Global Positioning System



EFFICIENCY PROPOSAL



DEADHEAD

Deadhead is defined as *“miles driven when no students are on board.”*



WHY DO WE HAVE DEADHEAD?

- Travel to first stop
- Travel between schools
- Fueling or washing vehicle
- Scheduled maintenance
- Travel to VMF, Mid-day or End of Day
Parking Location





HOW MANY ACPS TRANSPORTATION MILES ARE CLASSIFIED AS DEADHEAD?

	<u>Deadhead Miles</u>	<u>Cost per mile</u>
2005-06 School Year	1,171,529	\$ 2.76
2006-07 School Year	1,006,346	\$ 2.90
2007-08 School Year	1,306,574	\$ 3.14

Information obtained from the annual VDOE Transportation Report



What does deadhead cost?

2005-06 School Year	\$ 3,233,420
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2006-07 School Year	\$ 2,918,403
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2007-08 School Year	\$ 4,102,642
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Three Year Average Cost per Year	\$ 3,418,155
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BUS LOCATION

- What is the exact location of a bus in the event of an onboard emergency?
- Are the buses on their route and on schedule?
- Where does the bus actually go during the school day?
- Exactly where are the buses parked overnight?



Bus 54

Where are you?



Benefits from GPS technology

- **EFFICIENCY**

- Real time information on ridership

- **SAFETY**

- **CONSERVATION (idling)**

- **PRODUCTIVITY**

- **CUSTOMER SERVICE**

- Real time communication when parents call
- Web based access for school staff



Bus 54 located!



PHASED SOLUTION – INITIAL PHASE

IMPLEMENT GPS TECHNOLOGY

- **REDUCE DEADHEAD COSTS.**

5 % Reduction = \$170,500+ Annually

(Based on a 3 year average)

- **TRACK EXACT BUS LOCATIONS.**
- **ROUTE EFFICIENCY VERIFICATION.**



INITIAL COST

GPS HARDWARE	\$ 180,460
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ROUTING, ANALYTICAL & FIELD TRIP SOFTWARE	\$ 32,349
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INITIAL CAPITAL COST	\$ 212,809
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ONGOING ANNUAL COST

HARDWARE MAINTENANCE *	\$ 10,660
CELL BASED DATA LINK	\$ 16,560
SOFTWARE MAINTENANCE *	\$ 5,009
ANNUAL MAINTENANCE COST	\$ 32,229

*** (Applicable after the first year)**



FUTURE EXPANSION CAPABILITY

BUS INSPECTION

(pre & post trip inspections)





FUTURE EXPANSION CAPABILITY

STUDENT TRACKING



**REAL TIME BOARDING / DISEMBARKING
AND MANIFEST VERIFICATION.**



FUTURE EXPANSION CAPABILITY

PAYROLL VERIFICATION

Track employee activity in real time.



- **EXTRA DUTIES REPORTING**
- **BILLABLE HOURS TRACKING**
- **EMPLOYEE VERIFICATION**
- **SUPERVISOR INFORMATION**
- **DIRECT PAYROLL INTERFACING**



SUMMARY

INITIAL COST (GPS only)	\$ 212,809
AFTER 1st YEAR ANNUAL COST	\$ 32,229

POTENTIAL ANNUAL COST REDUCTION \$ 170,500
(Based on a marginal 5% reduction in deadhead)

**ALBEMARLE COUNTY PUBLIC SCHOOLS
SHOULD START SEEING A NET SAVINGS BY
THE END OF THE SECOND YEAR.**



IN CONCLUSION

THERE IS EVIDENCE THAT SUBSTANTIAL SAVINGS CAN BE MADE THROUGH THE REAL TIME TRACKING OF THE PHYSICAL BUS LOCATON.



SAVINGS FROM THE INITIAL IMPLEMENTATION COULD SERVE TO FUND THE OPTIONAL EXPANSION CAPABLIITIES AND ULTIMATELY PROVIDE A MUCH HIGHER LEVEL OF SERVICE AT A REDUCED OVERALL COST.