

# EDULOG

Education Logistics, Inc.



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**RESPONSE TO REQUEST FOR PROPOSALS ISSUED  
BY THE LAFAYETTE PARISH SCHOOL BOARD FOR  
ROUTING AND PLANNING SOFTWARE FOR  
STUDENT TRANSPORTATION, FIELD TRIP  
MANAGEMENT AND FLEET MAINTENANCE  
ADMINISTRATION**

## **RESPONSE TO RFP# 18-16**

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## EXECUTIVE SUMMARY

Education Logistics, Inc. (EDULOG) and the Lafayette Parish School Board (LPSB) have been partners in school transportation management for many years, and we appreciate the fact that the LPSB has one of the more complex school bus operations in North America. We also understand and respect the LPSB's desire to operate the most advanced and capable school transportation management system, and that the issuance of this request for proposal is a reflection of the district's desire to examine what is available and select the best system for its needs. We invite this comparison, and believe that the LPSB will find that it is being offered a greatly-enhanced, full-featured and powerful software system that builds upon what the LPSB already has, and that there are no initial costs—and no implementation headaches—associated with maintaining its partnership with EDULOG. With any other solution, there will not only be fees, but the LPSB will also have to expend a tremendous amount of time and effort on a solution not proven at the district. Thus the Lafayette Parish School Board is faced with the following decisions:

- ◆ Should it give up something that works, and works even better now with EDULOG's new **one screen routing capability** and SQL database?
- ◆ Should it engage in a long and intensive process of entering mapping, student, school, district, and transportation information into a system that it is unfamiliar with, and which may not work because of the system may have never worked at any place as complex as the LPSB?
- ◆ Should it forego the opportunity to enhance its present system with optional integrated modules (such as *EduTracker* GPS/AVL, student passenger management, bus driver management, on-vehicle tablet applications), and services (annual high level operational assessment, attendance at the annual EDULOG international conference/Student Transportation Leaders Conference) not available from any other company?
- ◆ How will the district optimize regular and special needs routing and forecast future transportation requirements with a different system?

We also believe the LPSB will be pleased to learn that in the past year EDULOG has begun an extensive process of re-engineering and re-development, and although for strategic reasons regarding competition we have been quiet about this process, we are more than happy to share information about our development with the LPSB because we believe this information is critical to the LPSB's decision-making process. We are confident that the end result of this renewal effort—EDULOG's next generation product—will meet and exceed LPSB's requirements as defined in the RFP document.

While engaging in this deep transformation as we move into the company's next generation, we would like the Lafayette Parish School Board to consider what EDULOG has done and what it is quickly developing. GPS/AVL, student passenger management, and mobile devices are maturing technologies in the student transportation management market, and EDULOG has devoted significant research and development efforts into creating world class solutions. And EDULOG's expertise with new technology has been recognized by IBM, which selected EDULOG to provide the software functionality for the most sophisticated student transportation management system yet envisioned. For example:

- EDULOG is bringing in expertise in design and engineering from areas outside of pupil transportation so that the most recent advances in database design, artificial intelligence, geo-spatial relationships, and mobile operating systems can be applied to school transportation management. In addition, EDULOG's unparalleled expertise in applying Operations Research principles to advanced mathematical modeling of optimization remains, and is invigorated by new developments in computer processing.
- The growth potential for many pupil transportation management system vendors is severely limited because the North American market for such software is saturated—and thus there is little potential for research and development funding. On the other hand, nations in Europe and the Middle East are for the first time offering government-provided school busing, and EDULOG has a major presence in these

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emerging markets. Not only do these new EDULOG partnerships provide significant funding for research and development, they also spur innovation: because these nations never had school busing before, they are not bound by past conventions or obsolete workflows and processes, and EDULOG will bring many of these innovations back to North America and the Lafayette Parish School Board. As just one example, EDULOG was recently awarded a contract for the Kingdom of Saudi Arabia after an intensive, three-year examination of all pupil transportation management software vendors worldwide. The contract, which involves new developments in student safety, management control, operational flexibility, and stakeholder transparency, has EDULOG supplying software, professional services, and staff for a project that is expected to transport three million students on more than 60,000 buses by 2017.

So what can EDULOG provide to the Lafayette Parish School Board that no other vendor can?

- A significant increase in research and development effort funded by our recent success in obtaining contracts for extremely innovative projects.
- A new, holistic approach to student transportation system design which emphasizes the interconnectivity between software, services, and telematics and fully supports the LPSB operational goals of having a system plan, monitor, and manage all student transportation activities.
- World class system design expertise resulting from working with the Department of Defense, Raytheon, and MIT's Lincoln Laboratories on projects that focused on applications of artificial intelligence: in particular, natural language processing and visual/geospatial machine learning.

We also believe it is significant to note that no other K-12 transportation management system provider has invested nearly as much resources and efforts in integrating GPS/AVL into the transportation management solution as EDULOG—or has provided such success for client districts. In addition, EDULOG currently offers an upgrade path that includes:

- ◆ **A proven, reliable, and enhanced GPS/AVL system** that is the only one available to offer true, two-way, real time, integration with routing and scheduling activities including geofencing, emergency and off-course alerts, idle time tracking, late/early/on-time performance in real time, the optional ability to create planned bus runs using actual GPS data, and the widest selection of reports available from any system.
- ◆ **An advanced driver time and attendance management system.** EDULOG knows what is required for the proper and most efficient processing of driver time data, such as log-in/log-out identification by driver, trip classification, time spent on pre- and post-trip inspections, etc. Therefore, EDULOG can provide the most sophisticated, but easy-to-use, driver time and attendance tracking system.
- ◆ **A parent portal system that allows parents or guardians to track the real-time locations of buses transporting their children.** They can also examine the transportation times (both actual and planned) for the entire day. If the students are en-route to a location, EDULOG's Parent Portal provides the current location and the estimated time of arrival. You can display the run on a map to see the actual path of the vehicle up to that point, as well as the planned directions for the run and the location of the student's stop. As with all of our applications, Parent Portal has many safeguards built into the system to ensure that only authorized users have access to student information.
- ◆ **Tablet system applications.** Only EDULOG has the capability to automatically share transportation changes that happens "on the fly" immediately with an on-vehicle device. For example: *A bus breaks down and a substitute driver has to go pick-up a child. The transportation department will make the necessary change and the new stop, student roster, driving directions, and more will be delivered immediately to the driver through the tablet.*



## EASE-OF-USE WITH EDULOG'S NEW ONE SCREEN ROUTING

EDULOG listens to what customers say, and then makes system changes based on those expressed desires. And one product that has been very well-received is our new One Screen Routing interface. Inspired by numerous client suggestions and comments, EDULOG's One Screen Routing introduces easy-to-use stop, run, and route editing that uses just one Windows screen. One Screen Routing displays in both tabular and graphic form an EDULOG system route with all associated runs, addresses, student headcounts, times, and schools. Adding a run is as simple as filling in a Microsoft Excel cell: just put the cursor in the list, type in an address, and the system automatically performs an address match and places that address on the run. All associated information is then transparently updated—without ever having to leave the One Screen Routing display! The same process is used to assign a new student to a run or to change the rider load at an existing stop.



And for those who like to work with the run displayed on the map, adding a stop is as simple as clicking on any location and then dragging the run to that stop. Address matching, run sequencing, time and distance computation is all done automatically. And to make things even easier, One Screen Routing automatically creates run directions based on your changes. You're in charge all the way, and there's no need to toggle between screens or remember an exact sequence of events. Because of the intuitive design of the interface and the powerful background processing that happens behind the screen, One Screen Routing can increase efficiency and productivity with very little effort on your part.

## LARGE DISTRICT SUCCESS

EDULOG is certainly familiar with the desire of large school districts to change routing and scheduling systems. For example, in the last several years EDULOG has been selected to replace competing transportation software systems at the Shelby County Schools of Memphis, TN, and the very large DeKalb County School District of Georgia. And why was EDULOG selected? Because its system is capable for meeting the demands of large and complex school busing operations, and the other systems aren't.

It is well known among school busing professionals that EDULOG dominates the large district routing and scheduling software market. For the 100 largest school district fleets in North America, the EDULOG system is the choice for the majority of these districts. And of the large school districts that use routing soft-

**From:** Smelt, Ed

**Sent:** Wednesday, December 04, 2013 6:19 AM

**To:** Jason Corbally

**Subject:** Good Morning

Hi Jason, just wanted to let you know that I absolutely love the new SQL and to say thanks for everything you and your staff have done to make my conversion quick and easy. Both Matt and Gina have been terrific and now I am looking forward to getting the rest of the GPS portion up and running and adding some more GPS.

I am meeting with the LPSBBO group Thursday and Friday in London Ontario, and you can bet, I will be promoting Edulog and letting them know how happy I am with my entire routing system.

I still want to attend the Nevada conference and am thinking of maybe using my own vacation so I can attend. We will have to be creative but I am sure we can think of something.

Thanks again.  
Ed Smelt, Manager  
East of Thunder Bay  
Transportation Consortium

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ware with any notable success, that is, they have increased efficiency, and this efficiency can be directly attributed to the routing system, in every case the EDULOG system is used.

The New York City Department of Education, Broward County Schools, Miami-Dade County Public Schools, and the Toronto District School Board are just a few of the large districts that have come to rely on the EDULOG system for cost savings, increased efficiency, and superior management control. The true test of how well a system will perform for the Lafayette Parish School Board is how well that system has done at comparable sites of similar size and complexity. ***That a system is adequate for a district that transports 10,000 students and has a very simple attendance pattern does not mean that it can handle the demands of the LPSB.*** Therefore, we urge the evaluation committee to thoroughly research all the vendors' large district client base to so that it understand what works, what doesn't, and why.

## SYSTEM INTEGRATION

EDULOG was the first company in the industry to have a fully integrated GPS/AVL/routing and scheduling solution. And as for integration with student databases, nothing can compare to the ease-of-use and efficiency that comes with EDULOG's live student update utility. EDULOG has developed a process so that within three minutes of entering student information into the district's SIS, the EDULOG system automatically receives that information, determines transportation eligibility, assigns the student to the correct bus stop and run, and prints a bus pass. This is just one example of the power and integration capabilities that make EDULOG the number one choice of school transportation professionals.

## THE RISK OF CHANGE

It should be acknowledged that attempting to change transportation management software systems necessarily incurs a large amount of risk. There are costs involved, of which the software fees (both initial and annual recurring) represent only a small part. The main cost is the time and effort the LPSB must expend on preparing student, school, transportation, and geographic information for the new system. Given the size of the LPSB transportation operation, this is an enormous undertaking that must be completed before the replacement software system can even be tested as to its suitability for the intended purposes. And while the transportation staff is concentrating on the necessary data development efforts, how will the daily routing and scheduling activities that depend upon a computerized management system be conducted?

As other school districts have discovered, it is not uncommon for some very well-known transportation systems to fail completely to serve even the very basic, but vital, functions required by a large busing operation. Every part of the selected system appeared to meet the requirements during demonstrations and district evaluations, but once implemented the system could not do what was needed for daily operations—even though it might have met the RFP requirements. It is true that some EDULOG clients have left for other products based on promises of easier-to-use systems, integration with flashy new technology, or promises of features that would be developed. Many of these districts have been disappointed to find that their selected systems have ended up failing to meet the complex requirements of transportation management in a large and complex operation, and these districts have either continued to struggle with a non-performing solution or have returned to EDULOG—as is the case with the Atlanta Public Schools.



## CONTACT INFORMATION

Education Logistics, Inc. is a privately held corporation incorporated in the state of Montana, with principal offices at 3000 Palmer Street, Missoula, MT 59808. The chief executive officer and owner of the company is Dr. Hien Nguyen of 3000 Palmer Street, Missoula, MT 59808. The secretary/treasurer of the company is Udloc Nguyen of 3000 Palmer Street, Missoula, MT 59808. The firm is 100 percent minority owned.

Questions regarding this proposal, or inquiries about an on-site presentation, may be addressed to Mr. Pete Salinas. Mr. Salinas' office phone number is (406) 728-0893 extension 2906. Electronic messages may be sent to: [psalinas@EDULOG.com](mailto:psalinas@EDULOG.com). Facsimile messages may be sent to: (406) 728-8754. Our mailing and delivery address is: 3000 Palmer Street, Missoula, MT 59808.

## FINANCIAL STABILITY

Financial statements can be provided upon request, but because Education Logistics, Inc. is a closely-held private corporation, we wish to keep this information out of the public domain. However, the LPSB can be assured that EDULOG can meet any conceivable financial stability requirement of the district and has by far the largest research and development budget of any K-12 transportation management software provider.





## COMPANY PROFILE

### BRIEF HISTORY OF THE BUSINESS

#### History of Innovation



1<sup>ST</sup> IN STUDENT TRACKING



1<sup>ST</sup> IN K-12 GPS/AVL



1<sup>ST</sup> IN DRIVER ATTENDANCE



1<sup>ST</sup> IN MOBILE



1<sup>ST</sup> IN PUPIL TRANSPORTATION  
ROUTE PLANNING & SCHEDULING SOFTWARE

Education Logistics, Inc. (EDULOG) is owned and directed by its founder, Dr. Hien Nguyen, and today employs or contracts with more than 165 professionals throughout North America, Europe, and Asia. Staff turnover is less than ten percent per year.

After completing his M.B.A. and Ph.D. in Mathematics at the Massachusetts Institute of Technology, Dr. Nguyen applied his knowledge to develop the Operations Research (OR) curriculum and program at the University of Montana. During this time, his focus on OR resulted in a consulting project for pupil transportation that developed efficient bus routes and schedules through the creation of a mathematically sound way to optimize the myriad potential alternatives.

These efficiencies produced impressive savings for the districts involved with the project, and after three years of refining the optimization process, Dr. Nguyen introduced the commercial application of optimization to student transportation. In 1978, he founded the first pupil transportation consulting and technology company, EDULOG. The new company combined the groundbreaking research into optimization and the application of GIS (Geographic Information System) technology into a computerized system for successful management of school bus routes and schedules.

During the 1980s, as the EDULOG system was implemented throughout North America, the system was further expanded to include applications for school attendance boundary planning/redistricting, statistical forecasting for student enrollments, and enhanced optimization routines. In 1988, EDULOG's superior solutions for managing school transportation were further validated when the state of North Carolina awarded EDULOG a contract for the first pupil transportation management system to be used by every school district under state control.

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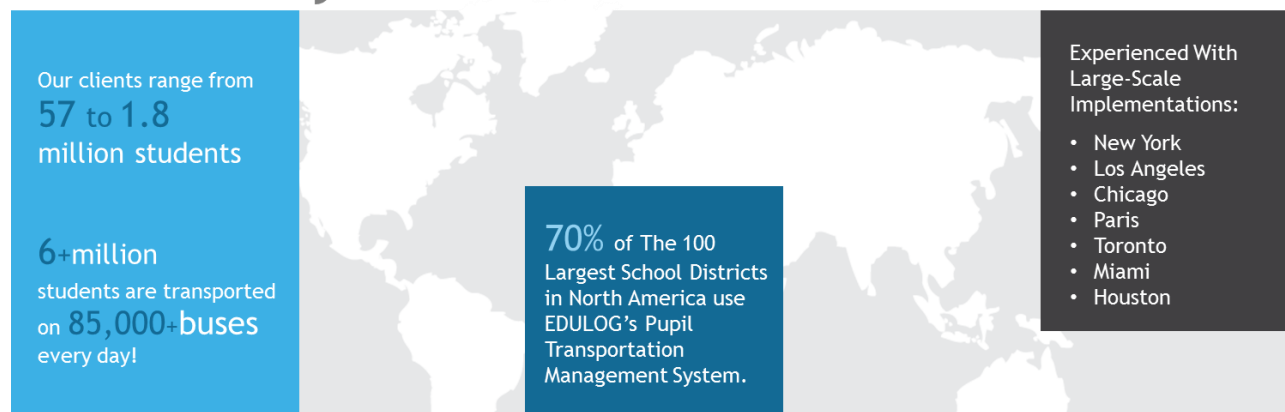
With the advent of more powerful PCs in the 1990s, EDULOG developed a modernized version of his routing and scheduling and optimization software that ran on Windows-based workstations and the company increased its client base from 80 school districts in 1989 to more than 650 by 1999. During this time, the company continued to leverage new technology by creating the first web-based software for pupil transportation.

In the years following 2000, EDULOG's proven capabilities at optimizing school busing resulted in the company winning competitive RFP contracts from the New York City Department of Education and the Miami-Dade Public Schools, thus adding to EDULOG's portfolio of the largest school bus operators (including the Broward County Schools, Chicago Public Schools, the Toronto School Boards, the Miami-Dade County Public Schools). It was also during this decade that EDULOG began developing applications for the emerging GPS/AVL student transportation market—and created the first integration of GPS/AVL with routing operations management. The result of this effort is the most comprehensive planning and monitoring system for the world's school buses, with the number of EDULOG clients now exceeding 1,200.

EDULOG's current focus is on integrating mobile devices to enhance connectivity and situational awareness between buses and transportation departments. In particular, artificial intelligence developments in the areas of natural language processing and visual/geospatial machine learning are being used to create state-of-the-art data modeling and computation techniques that will solve problems confronting the pupil transportation industry.

The integration of advanced technology with the human experience formed through decades of service represents EDULOG's core: no other firm has as broad a range of products for school transportation management (routing and scheduling, GPS, student passenger management, electronic vehicle inspection, driver time and attendance tracking, web, GIS, planning, SaaS (Software as a Service), accounting, fleet maintenance, field trip management) or can offer total solution services that guarantee a client's success. This integration is scalable, flexible, and proven.

## History of Service



## CORPORATE PHILOSOPHY AND MISSION STATEMENT

**To provide the most powerful, flexible, and advanced solutions for school district vehicle operations, backed by the industry's most skilled and experienced support and consulting team.**

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Education Logistics, Inc. was established as a company in 1978—having evolved from a pilot project directed by Dr. Hien Nguyen, who holds a Ph.D. in Mathematics from the Massachusetts Institute of Technology (MIT) and was professor of mathematics and operations research at the University of Montana in Missoula. In its development effort, Education Logistics has effectively balanced the usually conflicting objectives of providing powerful computer solutions while offering an extremely user-friendly approach to GIS-based pupil transportation management. This approach has made EDULOG the leading company in the field of student transportation management—particularly on the national scale in the public RFP process, where our record in obtaining contracts has been outstanding.

Since 1978, EDULOG has been the most respected and popular choice for school district transportation and planning professionals. Why? Because of our unwavering commitment to providing quality technology and services at an affordable price. When Dr. Nguyen introduced the first GIS-based school bus routing and scheduling package in 1977, EDULOG changed the world of transportation management forever: we gave school districts for the first time the power to create optimized bus runs and schedules based on facts and supported by logic.

More than 30 years later, we're still leading the industry: our software has grown into true decision-support systems capable of meeting the most complex challenges. Now, with the integration of real-time GPS bus and student passenger management into transportation management, EDULOG is setting new standards for power, flexibility, and ease-of-use.

The integration of advanced technology with the human element forms EDULOG's core: no other firm has as broad a range of products (routing and scheduling, GPS, student passenger management, electronic vehicle inspection, driver time and attendance tracking, web, GIS, planning, ASP, accounting, fleet maintenance, field trip management) or can offer total solution services that guarantee the client's success. This integration is scalable, flexible, and proven.

Often imitated, never equaled: that's another benchmark of EDULOG. We've seen competitors come and go while listening to them compare what they do to what we've already accomplished. While others try to catch up by copying original ideas, EDULOG is developing the newest, most powerful, and useful solutions (such as fully integrated bus and student passenger management using GPS/GIS/wireless technology).

## Our Beginnings

1977—First school bus routing and scheduling software system implemented by Dr. Hien Nguyen, Professor of Mathematics, University of Montana

1978—Company formed

1981—Company incorporated

- ♦ The company is privately owned and has never had any debt



## Our People

EDULOG senior management has an average of 19 years of experience with the company  
120 employees at corporate headquarters have an average of 7.75 years of experience  
165 total employees worldwide

- ◆ EDULOG's engineering staff alone is larger than the total number of employees for any competitor
- ◆ EDULOG's implementation and support staff is larger than the total size of any competitor

## Our Clients

More than 1200 clients throughout North America and Europe  
Total students for all clients exceeds 13 Million  
Total transported students exceeds 6 million

- ◆ The majority of the 100 largest school districts in North America with routing software have EDULOG
- ◆ Total statewide implementation of the EDULOG system in North Carolina—widely acknowledged to have the most efficient transportation system and most effective funding formulas of any U.S. state

## Our Clients' Cost Savings

Nearly \$22 million in savings recently reported by clients through the use of the EDULOG system

- ◆ The Miami-Dade County Public Schools recently used the EDULOG system to remove 74 buses from service.
- ◆ The Toronto District School Board attributes \$20 million in savings over the years to the EDULOG software.
- ◆ The Toledo Public School and EDULOG produced savings in the transportation budget of more than \$1.3 million this year.
- ◆ The Memphis City Schools used the EDULOG system to reduce its transportation expenses by \$8.2 million.

## Our Optimization Success

The Ontario Ministry of Education tested all of the leading routing and scheduling systems:

- ◆ The EDULOG system not only produced the best results in the least amount of time—in many cases it was the only system that could complete the assignment
- ◆ Much of the efficiency of the North Carolina districts is directly attributable to the power and flexibility of the EDULOG optimization software

## Our Customer Support

Even in the busiest times, first call resolution is completed within 30 minutes  
The longest support hours in the industry  
Every new client is assigned a dedicated project manager.

- ◆ EDULOG's customer ACE department enhances EDULOG's support services through project management, client communication, and continuing education.

## Our History of Firsts

Geographic information system for school transportation management and boundary planning  
Multi-user system allowing operators to perform the same function, at the same time, on multiple workstations  
Total solution service approach with guaranteed results

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Post-implementation consulting services  
Transportation software system implemented under a statewide contract  
System to connect separate transportation depots across a wide area network to a centralized database  
Internet-based transportation applications  
Ability to use maps from a variety of sources (ESRI, Navteq, MapQuest, etc.)  
Computerized run, route, and stop location optimization  
Optimization programs to simulate future transportation operations and boundary configurations and weigh the value of various alternatives  
International users' conference  
Application service provider (ASP) software hosting  
Integration of GPS technologies with routing software  
Real time student and driver tracking integrated with routing and scheduling data  
Mobile data terminals integrated with routing functions for two-way communication between dispatch/operations and buses

- ◆ EDULOG remains the only firm to provide continuing remote services for total system operations—the company as employee for a client

### Nothing Succeeds Like Success

Talk to our clients to learn more about their savings and satisfaction with EDULOG.

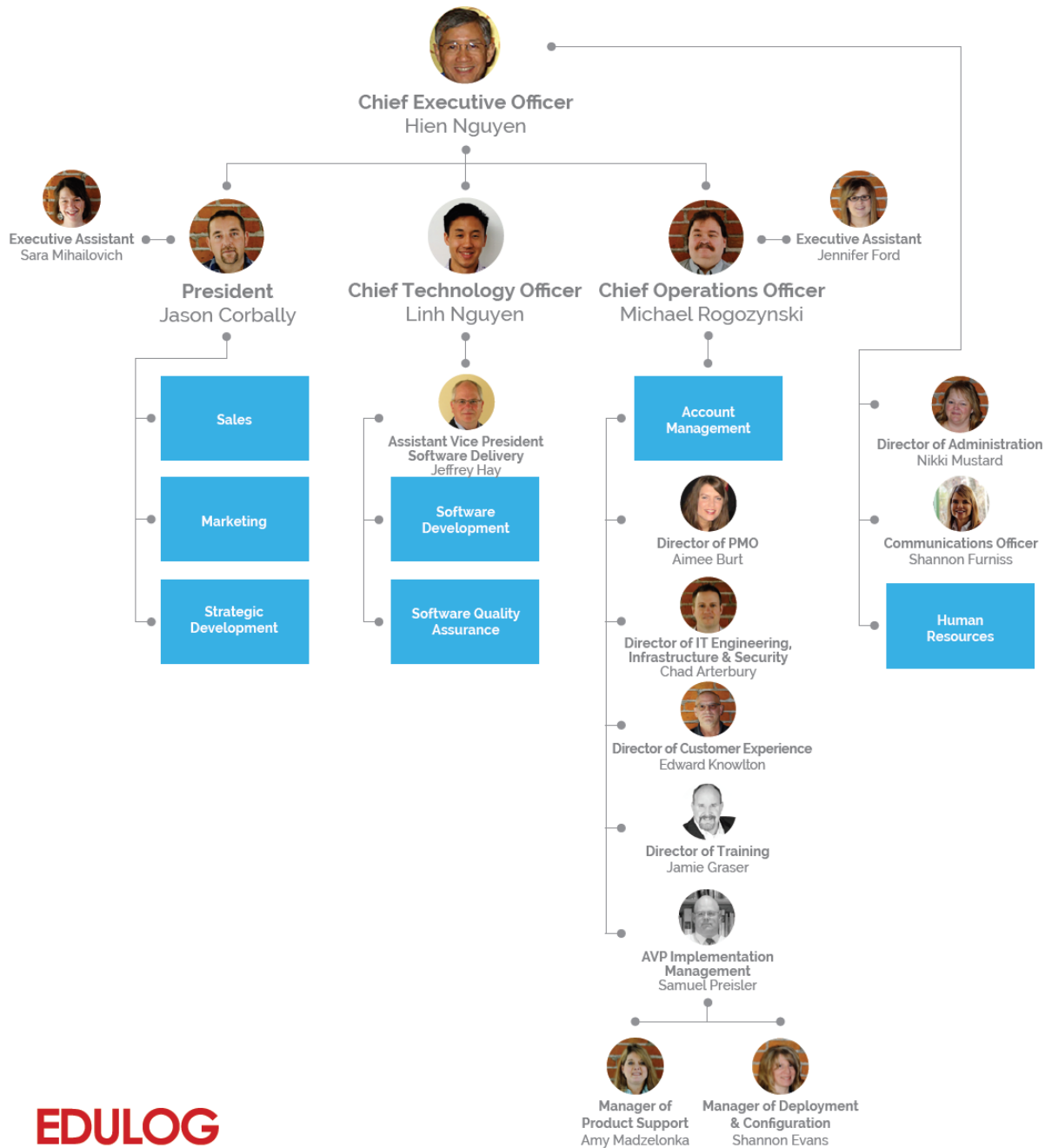
## ORGANIZATIONAL STRUCTURE OF EDULOG

The insert on the following page is an EDULOG organization chart.



# Education Logistics Organization Chart

## March 2016



**EDULOG**

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## ACTIVE BUSINESS VENUES

EDULOG has more than 1,200 clients in 46 states, five Canadian provinces, Europe, and Asia.

Of the largest 100 school district fleets in the US, more are served by EDULOG than any other vendor. Our client list of large school districts includes:

New York City Department of Education, NY  
Miami-Dade County Public Schools, FL  
Broward County Schools, FL  
Charlotte-Mecklenburg Schools, NC  
Shelby County Schools, TN  
Hillsborough County Schools, FL  
DeKalb County Schools, GA  
Cobb County Schools, GA  
Wake County Public Schools, NC  
Pinellas County Schools, FL  
Guilford County Schools, NC  
Virginia Beach City Public Schools, VA  
Minneapolis PS, MN  
Henrico County Public Schools, VA  
Cumberland County Schools, NC  
Loudoun County Schools, VA  
Wichita Public Schools, KS  
Los Angeles County Office of Education, CA  
Indianapolis Public Schools, IN  
Kansas City School District, MO  
Shelby County Schools, NC  
Baltimore City Public Schools, MD  
Brevard County Schools, FL  
Seminole County Schools, FL  
Omaha Public Schools, NE  
Newport News Public Schools, VA  
Winston-Salem/Forsyth County Schools, NC  
St. Tammany Parish School Board, LA  
Little Rock School District, AR  
School District of Greenville County, SC  
Buncombe County Schools, NC  
Collier County Schools, FL  
Portland Public Schools, OR  
Hanover County Public Schools, VA  
Grand Rapids Public Schools, MI



## BACKGROUND OF KEY PERSONNEL

The staff members of EDULOG specialize solely in the various fields related to computerized transportation management. Areas of specialization include program development, software engineering, project management, digital mapping, data preparation, client support, and consulting. The following list profiles EDULOG's senior management who will supervise the project.

The current plan is to assign one senior project manager, one junior project manager, several implementation specialists, and one or two trainers to this project.

### ANDY LEIBENGUTH: SENIOR CONSULTANT AND PROPOSED PROJECT MANAGER

*15 years of student transportation experience*

University of Montana, Missoula, Mont. B.B.A. in Business Administration

After working seven years in Portland, OR for the Portland Public Schools (where he rose to the rank of Transportation Services Director), Mr. Leibenguth returned to EDULOG in August 2012. As a professional transportation consultant, Andy assists client districts with the identification of solutions to transportation challenges in the areas of funding, software, policies and procedures, and/or staffing. Mr. Leibenguth uses his experience managing one of the top 100 school transportation departments in the US to ensure that appropriate and effective organizational and operational practices are in place to support safe and efficient transportation services.

Before returning to Missoula and EDULOG, Mr. Leibenguth was the Transportation Services Director of the Portland Public Schools. The Portland Public Schools uses 258 assigned buses each day, and has a total annual route mileage of 3,000,000 miles. The following is taken from a press release from the Portland Public Schools (PPS) announcing that Mr. Leibenguth was permanently appointed to the position of Transportation Services Director in December 2010:

"PPS is pleased to announce that Andy Leibenguth is our new Transportation Services director. He has been serving as interim director since Phil Weber left earlier this fall.

"Andy joined PPS in 2005 as a routing manager, helping to coordinate efficient bus travel and communicating routes to staff and families. He served as assistant director beginning in 2007. Prior to joining PPS, Andy traveled the U.S. and Canada implementing software and providing consulting services for district transportation departments.

"Andy earned a bachelor's degree in business administration in 1997 from the University of Montana in Missoula.

" 'Andy is well prepared to provide outstanding leadership, having worked in and around K-12 pupil transportation for the last decade,' said C.J. Sylvester, chief operating officer. 'And, while interim director, he distinguished himself as a leader who understands that safely transporting students to and from school is as much of an equity issue as providing a high quality academic program to all.'



“Andy said he is looking forward to the challenge: ‘I’m thrilled for this opportunity to lead our skilled and hard-working crew who are dedicated to getting our students safely to school and home again every single day.’ “

About Mr. Leibenguth’s position at the Portland Public Schools:

Reporting to the Deputy Chief Operating Officer, the Portland Public Schools Director of Transportation Services (DTS) is a senior management position who administers and supervises the safe, economical, and timely transportation of Portland Public Schools students while overseeing staff, preparing and managing department budgets, ensuring adherence to State and Federal laws, and being a good steward of district transportation assets. The DTS collaborates extensively with other district departments, including risk management, security services, special education, and school administrators to ensure the delivery of the highest quality transportation services to the district. The DTS has three direct reports, but has an overall staff of 106, plus annual contracted services of approximately \$13,000,000.

Mr. Leibenguth’s major responsibilities and duties at the Portland Public Schools were:

Administering and supervising the safe, economical and timely daily transportation of Portland Public Schools’ students.

Overseeing the preparation and implementation of bus schedules and routes to support organizational needs and maximize service efficiencies.

Administering and supervising staff work schedules.

Developing specifications and documents for transportation related contract services and purchases.

Preparing, with input from administrative personnel, and administering the annual budget for Transportation Services, comprising district-owned and contracted vehicles, equipment, supplies, and services.

Analyzing budgetary data, verifying figures; recommending allocation of budgetary funds.

Promoting and administering active programs for the safety of students and personnel, including industrial safety.

Directing and supervising transportation participation in emergency evacuations and other drills.

Conducting investigations, as required, to ensure transportation system meets required service levels.

Promptly conducting investigations of driver and other complaints by customers and stakeholders.

Responding quickly to systems failures and recommending procedures for improvement.

Collaborating with district administration and Security Services to investigate any incidents involving student transportation.

Developing and maintaining student accountability records; preparing reports as required by law and administrative policy.

Supervising and managing the Transportation Services Department staff.

Ensuring that all transportation-related district, State and Federal laws, mandates, and policies are followed.

Performing other duties as directed by the deputy chief operating officer.

Mr. Leibenguth started at EDULOG in 2000 as a member of the training and implementation staff. In this position, he was responsible for installing software systems at new client sites and instructing transportation staff in system use and maintenance.

In 2001, Mr. Leibenguth was promoted to transportation consultant (senior consultant in 2004). As an EDULOG consultant, he worked with existing clients primarily in the areas of optimization and bell time studies. Andy was the lead consultant on the Ontario Ministry of Education and the Lambton-Kent District School Board bell time study projects. His duties in this position also included advising clients about procedures and practices, implementing

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a variety of EDULOG transportation management software systems, and conducting efficiency and optimization studies for school district transportation departments.

## EXECUTIVE TEAM



### HIEN NGUYEN, CHIEF EXECUTIVE OFFICER/FOUNDER

- École Polytechnique, Paris, France. Diplome d'Ingenieur, 1971.
- Massachusetts Institute of Technology, Cambridge, Mass. Ph.D. in Mathematics, 1975.
- Sloan School of Management (MIT), Cambridge, Mass. M.B.A., 1975.

After completing his M.B.A. and Ph.D. in Mathematics, Dr. Hien Nguyen began applying his knowledge by developing the Operations Research (OR) curriculum and program during his tenure at the University of Montana in 1975. His methods were so effective that the program continues to be a mainstay of the University's curriculum. During this time, his focus on OR resulted in a consulting project that involved creating a mathematically sound way to optimize pupil transportation by developing efficient bus routes and schedules. These efficiencies ultimately lead to impressive savings for the districts involved with the project. After three years of refinement, Dr. Nguyen realized his true goal, the commercial application of optimized student transportation. In 1978, he founded the first pupil transportation consulting and technology company, EDULOG, based on this groundbreaking research.

In the 1980s, Dr. Nguyen's algorithms evolved into new systems that greatly enhanced enrollment projections, school boundaries, and school distribution. His inventions applied mathematical principles to real world problems, creating better educational opportunities within limited school budgets. With the advent of the PC in the 1990s, Dr. Nguyen developed a modernized version of his software that ran on Windows-based workstations. Under his stewardship the company continued to leverage new technology by creating the first web-based applications for pupil transportation.

At the dawn of the new millennium, Dr. Nguyen shifted his company's focus to developments in the emerging GPS/AVL student transportation market. The result is the most comprehensive planning and monitoring system for the world's school buses. Continuing EDULOG's history of cutting edge innovations, Dr. Nguyen's renewed focus is integrating mobile devices that foster connectivity and real insight between buses and transportation departments. The experience and expertise that are relevant to the proposed project are derived from:

- Teaching (from 1975 to 1982, on leave from 1982 to the present) at the University of Montana, Mathematics Department. Dr. Nguyen developed the Operations Research curriculum and program at the University and has been in charge of it since 1975. His duties as a faculty member consist in teaching advanced courses in Operations Research, conducting graduate seminars in research topics and advising doctoral and/or master degree candidates in the Mathematics Department. These academic activities allow him to stay in touch with the state-of-the-art in this very dynamic area of Operations Research.
- Consulting for various commercial and governmental agencies since 1975, Dr. Nguyen's consulting practice is specialized in the application of Operations Research, namely mathematical models of optimization, to various management situations. Applications have been in education (pupil transportation, boundary planning, class scheduling), food services (inventory), public transportation (ridership improvement measures), hospital administrations, etc.
- Directly participating in or supervising almost all of the projects contracted by EDULOG. In the role of overseeing the progress of all projects conducted by EDULOG, Dr. Nguyen has benefited from the ever-increasing experience and expertise that the company has developed through its years of operation.

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Dr. Nguyen was responsible for leading the firm in successfully implementing systems at the New York City Department of Education, Minneapolis Public Schools, the School Board of Broward County, FL, the Toronto District School Board, the Portland Public Schools, and at more than 1,300 other school districts.



### JASON CORBALLY, PRESIDENT

Jason Corbally leads the company toward new milestones, working closely with school districts, government, and industry to improve existing products and develop new ones, making EDULOG the industry leader in transportation management systems. Jason started at EDULOG in 2004 while attending the University of Montana and has paved the way for new partnerships, launching EDULOG's innovative technology into the international arena. Selected as one of Missoula's top "20 under 40" young business professionals, Jason also serves as a committee chair on Governor Steve Bullock's Main Street Montana Project and on the Montana High Tech Business Alliance Advisory Board. A native of Butte, Montana, he and his wife are the parents of Peyton and Liam.



### LINH NGUYEN, CHIEF TECHNOLOGY OFFICER

Mr. Nguyen earned his Master's degree in computer science from the Massachusetts Institute of Technology. At MIT, he worked with the Department of Defense, Raytheon, and MIT's Lincoln Laboratories on projects that focused on applications of artificial intelligence: in particular, natural language processing and visual/geospatial machine learning. At EDULOG, he aims to apply state-of-the-art data modeling and computation techniques developed in artificial intelligence to problems that we face in the pupil transportation industry.

Linh's understanding of data modeling and its potential contributions to the transportation industry inspired him to join in his father's vision and officially return to EDULOG. In his role as CTO, Mr. Nguyen is innovating and creating applications that will change the pupil transportation industry for decades to come. Seeing the potential and inherent benefits of optimized student transportation in a world market, Linh seized the opportunity to return to Montana to apply his extensive knowledge to this growing need.



### MICHAEL ROGOZYNSKI, CHIEF OPERATING OFFICER

Michael has 32+ years of experience in multiple industries including education, government, finance, insurance, manufacturing, and consulting. As EDULOG's chief operating officer, he strives to work with his team to grow EDULOG and launch it into the international marketplace. Michael is married with three daughters, of which two are in college.



## MANAGEMENT TEAM



### AIMEE BURT, DIRECTOR OF PROJECT MANAGEMENT OFFICE

Aimee Burt is an experienced project manager and Lean Six Sigma consultant. Aimee was the lead project manager of the United and Continental Airlines merger and integration which formed the world's largest airline. She was the senior project manager of United's relocation to Willis (Sears) Tower from concept, design, build, and initial move into the LEED certified workspace, with result being 4,000 employees stationed on 16 floors with 800,000+ square feet. As a Lean Six Sigma Black Belt, Aimee led integrated process improvement teams to improve people and cargo transportation efficiencies reaching \$25,000,000 in annual savings. At Nike world headquarters, Aimee served as a lean and project process leader, improving production support, opening the tech side of new stores globally, and deploying and upgrading hardware and software. She is also experienced in recruiting, relationship development, and change management, with strong interpersonal and communication skills which aid in improving business environments.

Aimee has worked virtually with companies throughout the world, and has physically worked in Germany, France, and the UK. She studied in Brazil and for leisure has traveled to 27 countries on six continents--48 percent of them two or more times. Originally from Oregon, after college she moved to New York and then Chicago. Aimee is happy to have moved to Missoula with her significant other plus his two children and her active Chesapeake Bay retriever.



### SHANNON EVANS, MANAGER OF DEPLOYMENT AND CONFIGURATION

Joining EDULOG in 2016, Shannon Evans oversees the operation of the deployment and configuration management team, with the mission to provide EDULOG's clients the highest level of quality in hosting and applications management services. Shannon's goals are to bring streamlined innovative solutions and improvements to systems wherever they can be found. Shannon's background includes 25 years of combined experience in hardware and software configuration management in both commercial and defense industries. Shannon and her husband were married in San Diego in the summer and relocated to Montana in December. Shannon enjoys interior home design and renovation projects with her new husband. They look forward to experiencing the natural wonders and rich history of Montana in the spring!



### SHANNON FURNISS, COMMUNICATIONS OFFICER

Shannon Furniss is the communications officer at EDULOG, managing internal and external communications and public relations. Before joining EDULOG, Shannon served as communications director at the University of Montana Bureau of Business and Economic Research and managing editor of the *Montana Business Quarterly*. She is the founder and managing director of Market Interactives, a communications and marketing firm based in Missoula, Montana. Shannon has written articles for the Montana High Tech Business Alliance, the *Montana Business Quar-*

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terly, the *Montanan*, and other publications. She was a speaker at the inaugural Montana STEMFEST held in 2015 which showcased educational and career opportunities in science, technology, engineering, and mathematics (STEM). Her presentation through interactive video conferencing reached 500+ high school students across Montana. Shannon has a degree in journalism from the University of Montana.



### JAMIE GRASER, DIRECTOR OF TRAINING

Jamie comes to EDULOG as a training and development professional and champion. Jamie holds a Master's degree in education, with a specialization in adult learning theory as well as an MBA (Master of Business Administration). Jamie has more than 20 years of training and development experience and has worked with many small and large companies to put into action both internal and client-facing training and consulting implementations. Jamie's corporate work experience includes Verizon, AT&T, Liveperson Inc., Deloitte, Cox Enterprises, US West, and many others. Jamie is happily married and has two elementary-age children. Jamie attempts to

live a three-tiered philosophy: (1) Your attitude determines your outcome; (2) Say what you mean and mean what you say; and (3) You are what you DO every day.



### JEFFERY HAY, ASSISTANT VICE PRESIDENT OF SOFTWARE DELIVERY

Jeff Hay has served as a US Army officer and has degrees in history from the University of Richmond (Virginia) and electrical engineering from the University of Aalborg in Denmark. As an engineer, Jeff has lived and worked around the world, with significant time managing global project delivery groups and working with customers in Europe, Asia, India, and the US. One of the threads that have run throughout his career is working for exceptional companies in some of the most dynamic plac-

es in the world. Jeff is glad to continue on this path working on EDULOG's products and getting the chance to live in Montana.



### SAMUEL PREISLER, ASSISTANT VICE PRESIDENT OF IMPLEMENTATION MANAGEMENT

Sam joins EDULOG after five and a half years at Silver Butte Holsteins, Inc. where he was the business manager, financial officer, and information technology director. Silver Butte Holsteins is a third generation agricultural enterprise and is one of the largest calf ranches in the United States with more than 60,000 animals on feed; it also has a large farming and dairy operation. During Sam's tenure, the company grew from a valuation of \$20 to \$140 million—growth made possible in part by his business and IT expertise.

Prior to Silver Butte, Sam directed the QA team of a state benefits system that served 1.6 million Idahoans. He has 30 years of software, quality assurance, information technology, and business experience.



Sam is a lifetime member of the Carnegie-Mellon Software Engineering Institute and a member of the American Society for Quality. He served as a founding member of the Idaho Technology Showcase Advisory Council and as chairman, president, and board member of IIASM. He also served as the vice chairman of the School Board for the Melba School District in southwestern Idaho.

Sam is a veteran of the US Navy, serving as an operations and intelligence specialist and an electronics technician; and for more than 15 years he has operated a property inspection business as a certified residential and commercial inspector.

He is married to Christie Preisler and they have six children.



### EDWARD KNOWLTON, DIRECTOR OF CUSTOMER EXPERIENCE

Edward has more than 25 years in the contact center industry working with companies in the United States and Philippines. He is a Six Sigma Black Belt with over 2,000 completed projects in service delivery and development and is COPC Management certified. Edward has worked with Fortune 100 companies including General Electric, Accenture, and IBM. His goal is to bring EDULOG customer experience to a new and exceptional level. Originally from Anchorage, Alaska, Edward lived in Metro Manila for ten years and has a fiancée, a son, and a dog named Zazzy.



### NIKKI MUSTARD, DIRECTOR OF ADMINISTRATION

Nikki has nearly 25 years of experience managing staff and overseeing company expenses, and serves as the planning director for our annual EDULOG conference. A Montana native, Nikki has been bitten by the travel bug and also serves as the business manager for a California vineyard, giving her ample time to enjoy wine country. Nikki's primary passion, though, is her family. When not working she enjoys spending time with her husband, her 20-year-old twin sons, and large extended family.



### AMY MADZELONKA, MANAGER OF PRODUCT SUPPORT

Amy Madzelonka began working with the EDULOG software support department in February 2014. Prior to joining EDULOG, Amy worked as a network engineer for 15+ years. Amy enjoys working with our clients and the relationships she builds with each of them. When free time permits, Amy enjoys golfing and spending time with her family.



## REFERENCES

### **Minneapolis Public Schools**

807 NE Broadway  
Minneapolis, MN 55413  
Mr. Scott James  
Transportation Director  
Phone: 612-668-2311  
Email: [scott.james@mpls.k12.mn.us](mailto:scott.james@mpls.k12.mn.us)  
Buses: 415  
Project Date: 1984 and continuing to this day  
Project Type: Integrated GPS/AVL with EDULOG Routing and Scheduling System

### **Galena Park Independent School District**

812 Normandy Street  
Houston, TX 77015  
Mr. Jim Beesley  
Transportation Director  
Phone: 832-386-2724  
Email: [jbeesley@galenaparkisd.com](mailto:jbeesley@galenaparkisd.com)  
Buses: 154  
Project Date: 2008 and continuing to this day  
Project Type: Integrated GPS/AVL/Student Tracking with Transfinder Routing and Scheduling System

### **Henry County Schools**

255 Lemon Street  
McDonough, GA 30253  
Mr. Jim Jones  
Database Analyst  
Phone: 770-957-2025 x 207  
Email: [jim.jones@henry.k12.ga.us](mailto:jim.jones@henry.k12.ga.us)  
Buses: 310  
Project Date: 1989 and continuing to this day  
Project Type: Integrated GPS/AVL with EDULOG Routing and Scheduling System

### **Clayton County Public Schools**

1058 Fifth Avenue  
Jonesboro GA, 30236  
Reference for Edulog NT  
Contact: Harold Walker, Transportation Director  
Phone: 770-603-5780  
Email: [hwalker@clayton.k12.ga.us](mailto:hwalker@clayton.k12.ga.us)  
Buses: 544  
Students Transported: 31,200  
Project Date: 1991 and continuing to this day  
Project Type: Integrated GPS/AVL and Electronic Driver Time and Attendance Tracking with EDULOG Routing and Scheduling System



**Brentwood Union Free School District**

54 Third Avenue  
Brentwood NY, 11717  
Contact: John Robertson, Transportation Manager/Consultant  
Phone: 631-456-6573  
Email: [jrobrjr@yahoo.com](mailto:jrobrjr@yahoo.com)  
Buses: 259  
Students Transported: 17,000  
Project Date: 2012 and continuing to this day  
Project Type: EDULOG Routing and Scheduling System

**Racine Unified School District**

3109 Mt. Pleasant  
Racine WI, 53404  
Contact: Mr. Patrick Starkin, Transportation Director  
Phone: 262-664-8724  
Email: [patrick.starken@rusd.org](mailto:patrick.starken@rusd.org)  
Buses: 150  
Students Transported: 12,000  
Project Date: 1988 and continuing to this day  
Project Type: EDULOG Routing and Scheduling System

## CLIENT TESTIMONIALS AND LETTERS OF RECOMMENDATION

Please refer to the following letters of recommendation or testimonials for further information regarding EDULOG's performance.





P.O. Box 23120  
3820 Nine Mile Road  
Henrico, Virginia 23223-0420  
(804) 652-3600

Dear New York City Department of Education Personnel:

Henrico County Public School is pleased to recommend Education Logistics, Inc. (EDULOG) as a preferred provider for AVL/GPS services. Henrico began its journey into the procurement process for AVL/GPS services in March of 2011. Overall, our experience with EDULOG has been a positive one. We have gained a valuable tool to monitor performance of our fleet and to investigate individual allegations by citizens, parents and school officials of misconduct, early or late arrivals.

As a long time user of the EDULOG software, it is essential that the GPS software integrate easily with our routing software. We are pleased that this system works as planned. When there is a feature that we need or do not understand, we receive exceptional customer service from the EDULOG staff each time we contact them.

We have found it easy to create multiple views to track buses. For example, in a large school system such as Henrico County Public Schools, it is important for us to have the capability to organize our school buses and display them by category all at the same time. With over 500 buses, it is quite difficult to view all buses at the same time. The EDULOG software allows us to toggle between multiple tabs of information including the map display. We use six tabs currently to display five zones and all special education runs.

We are impressed with the capability of having one screen without the need to flip back and forth between multiple screens and views. This shows that EDULOG values the time of the user as it is not required that we go in and out of the display to capture the information we need.

One final point regarding installation of the software, we were able to see buses on our computer screens even before final completion of installing the units. This allowed us to ask questions and address issues. We were able to capture data from many of the units within 24 hours of installation.

Without hesitation, we can truly say that we are pleased with our EDULOG routing software coupled with a GPS. We look forward to a long partnership with EDULOG and are grateful for their interest in assisting us in our continuous improvement efforts.

Sincerely,

A handwritten signature in black ink, appearing to read "Lori Carter-Evans".

Lori Carter-Evans  
Director of Pupil Transportation  
Henrico County Public Schools

An Equal Opportunity Employer  
[www.henricok12.va.us](http://www.henricok12.va.us)

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**DENTON ISD TRANSPORTATION**

5093 E. MCKINNEY ST  
DENTON, TX 76208  
940-369-0300

We installed on 158 school buses an integrated system that included GPS units, long-range RFID readers for student tracking, and mobile data terminals for instantaneous two-way text communication between the buses and the transportation office. EDULOG additionally provided the EduTracker software and project management services to incorporate these advanced tracking capabilities with our existing transportation operation and routing and scheduling software.

Safety and efficiency are the top priorities of the transportation department. And of all the GPS companies, only EDULOG has the complete package to meet these goals. The other companies have bits and pieces, and they claim that their products can be integrated with our routing and scheduling software, but only EDULOG could prove that they'd deliver what I want: tracking of every student on every bus, MDTs as a back-up for when a student forgot their card and for sending driver directions straight to the bus, and real-time alerts for when a bus is speeding or going off-route.

I am excited about the student tracking capabilities, especially in how it will automate our head counts for the required state reports, but it is the MDT functions that really separated EDULOG from the other systems that we looked at. It's a fact that every day students will lose or forget their ID cards, and then what do you do? With EDULOG's MDTs, the answer is simple: just have the driver point to the touch screen and select the student from the passenger list displayed on the MDT screen for the current bus stop. In this manner, every student is counted and recorded, and parents know that we're looking out for their children.

Because they show turn by turn driver directions taken from the routing and scheduling system, the MDTs are a big help for substitute drivers who might be unfamiliar with that bus's run. And if a run has been changed recently because a stop is no longer needed or a new student needs to be picked up, the driver has access to that information right there in the vehicle.

EduTracker provides us a cost-effective and integrated method of tracking bus locations at all times. With this innovative technology, not only can we have the exact location of any bus displayed on the EDULOG raster map, but the time and location of each pick-up and drop-off can be recorded for route analysis, emergency notification, and accident reporting. Enhanced productivity, maximized fleet utilization, improved safety and security, and increased community service can all be results of the EDULOG EduTracker system.

Rather than simply tracking which students board and exit the bus with GPS/AVL, we can compare this information to a list of students assigned to a given bus stop. Not only can dispatch know when a child has exited at an unassigned stop, the driver knows when someone boards the bus who isn't supposed to. EduTracker allows us to better manage phone calls from parents and determine with detailed accuracy where their child is located, if/when they were picked up or dropped off, and exactly what time this occurred.



Aaron Robbins  
Director of Transportation  
Denton ISD  
940-369-0300 [arobbins@dentonisd.org](mailto:arobbins@dentonisd.org)

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GALENA PARK I. S. D. TRANSPORTATION SERVICES

812 Normandy Street, Houston, TX 77015

NOV 11 2011

James D. Beesley  
Director of Transportation  
(832) 386-2720  
Fax: (832) 386-2740

I have been extremely pleased with the Edulog GPS/AVL/Student Tracking applications that this District has purchased. Utilizing these systems has allowed my operations section to have near-real time locations and speeds for all of the buses. This gives them the capability to provide fast, accurate information to parents, administrators and other customers.

When I assumed the duties of Director of Transportation in January 2006, my goal was to significantly enhance the safety of our students and the accuracy of our reporting. I wanted to leverage technology to enable my department to accomplish those goals. By installing digital cameras and GPS on our buses I felt that student safety would be materially increased.

As I began the bidding process for the GPS portion of our initiatives, it became evident early on that Edulog was the front runner among the six or so companies vying for the contract. First and foremost, Edulog wanted to help me achieve my vision. I never felt like they were just trying to sell hardware or software to me or this district. They were able to show me solutions where other companies could only offer vague promises.

Another selling point for Edulog was that they were willing to work with us to integrate the routing software – software that we had already invested a sizable amount in – into their GPS system. There were the usual burps and gurgles that accompany any Beta test of software, especially when combining two disparate companies' products. But throughout it all, the staff at Edulog worked diligently to solve compatibility issues and deliver the product we asked for.

As we implement full student tracking throughout our district, Edulog has worked with my staff on a daily basis to ensure that we get what we paid for. Being able to determine the last known location of a lost 6<sup>th</sup> Grader was just one of the benefits we experienced from implementing this product.

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



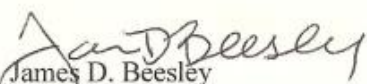
Innovative Technology. Demonstrated Savings. Proven Success.

It's not easy to quantify savings from implementing these systems, but a few examples come to mind that I want to list:

- Increased awareness of bus locations and loiter times has tightened up the chances for an employee to claim down time as route time.
- Speed reports have greatly enhanced safety by reminding drivers to slow down on the freeway.
- A driver was accused of aggravating the injuries of a wheelchair student by driving too fast over speed bumps. Using the speed report, I was able to show that the bus was only moving at 5 miles per hour when it crossed the bumps. Correlating the GPS data with Google Earth, I was able to show that the GPS pings were within 50 feet of the speed bumps. Further, using Google Earth's "Streetview" feature, I was able to show exactly where the incident occurred.

By integrating the products from Edulog with our Transfinder routing software, couple with our 24/7 Security cameras and DVRs, and some good old "thinking outside the box", my department has achieved my initial vision. Without Edulog's help, this would not have been possible and the safety of our students would be at risk.

I think Edulog has been a sound investment for this district, and will continue to be for years to come.



James D. Beesley  
Director of Transportation  
Galena Park Independent School District





To Whom It May Concern:

This is a Letter of Recommendation for the Edulog GPS/AVL system.

EDULOG's GPS/AVL system (*EduTracker*) and routing and scheduling software (*EDULOG.nl*) was used by the Henry County Schools to eliminate more than 8,000 unnecessary bus stops, resulting in an annual reduction in fuel costs of \$392,500.

Using the EDULOG system, we were able to track and eliminate a tremendous number of unnecessary stops—we went from 16,000 daily throughout the district to 8,000. Our initial savings in the first month was 22,000 gallons of fuel. In subsequent months, we've averaged a fuel savings of 15,000 gallons compared to the same month one year ago. At \$2.50/gallon for fuel, that's almost \$40,000 per month in savings that goes right to the bottom line! You can use any GPS system to help reduce idle time, but only EDULOG offers direct integration between the GPS and routing software that can produce these additional savings by eliminating unneeded stops and then ensuring drivers are adhering to the changes.

Because the EDULOG *EduTracker* system gives school districts total knowledge of the activities of each bus during the day, system operators can quickly and accurately determine which bus stops are no longer needed, and then pass that information to the EDULOG routing and scheduling system so that route sheets can be altered and new driving directions produced. The resulting reduction in bus idling—brought about by eliminating stops where there are no passengers or by consolidating stop locations—not only reduces fuel consumption and costs, but it also increases routing efficiency and reduces CO<sub>2</sub> emissions.

Henry County strongly recommends Edulog to any school district considering a GPS/AVL system!

**Jim Jones**

**Database Administrator**

**Henry County Schools**





**David Rauseo**  
**Transportation Director**

*Tel: 603-966-1008*  
*Fax: 603-594-4350*  
*www.nashua.edu/district/*

To Whom it May Concern:

I have been in the transportation industry for over 20 years and Edulog is among the finest routing software I have ever used. The company has continually impressed me with its services and unique products. Often Edulog's support department not only helps solve our problems – which are rare – but also helps me see the bigger picture and to think “outside of the box.”

By taking a pragmatic and decisive approach, the staff at Edulog brings resolution as well as helps me to think creatively about the software system as a whole and how its applications can improve the services we provide. The staff at Edulog is always practical, prompt, pleasant and has always been there to assist me.

If you have any questions, please feel free to contact me.

Mr. Dave Rauseo  
Transportation Director  
Nashua School District  
Nashua, N.H.  
603-966-1008







**MERCED CITY SCHOOL DISTRICT**  
444 West 23rd Street, Merced, CA 95340, (209) 385-6600

We wanted a special needs student tracking system that would not require the students to present an ID card or have to interact with the equipment in any way. Of all the responses we got to our RFP, only the Edulog system with the mobile data terminals met our requirement. We installed the combined Edulog GPS/Student Tracking/Routing and Scheduling system in the spring of 2009, and it has been working exceedingly well ever since.

The MDTs on the buses display the driver directions taken from the routing and scheduling system, with turn instructions and street names, stop locations, etc. At the stop level, the MDTs then show the passenger roster and a description of each student's special needs. Further student information is also provided such as emergency contact number—that's a lot of information that the system makes available to staff on the bus.

The students enter and exit the bus, the driver records these events and the information is sent to the server. We have instant knowledge of who is on the bus, where they got on and off, and where the bus is at any time. The efficiency of the system is incredible.

As I make daily changes in the transportation plan for the special needs students, the system automatically broadcasts those changes and new information from the routing and scheduling system out to the buses. I also like that the driving directions are what I have established in the routing and scheduling software, not the confusing or contradictory instructions that you get with a MapQuest system.

**Kraig Magnussen**  
**Merced County Office of Education**



## CONNELLSVILLE AREA SCHOOL DISTRICT

Administrative Building  
732 ROCKRIDGE ROAD  
PO BOX 861  
CONNELLSVILLE PA 15425-0861  
Phone 724-628-3300 Fax 724-628-9002

LISA HAMPE  
*Supervisor of Special Education*

EUGENE R. CUNNINGHAM  
*Business Manager*

KAREN L. MARKO  
*Director of Human Resources*

JAMES J. LEMBO  
*Director of Athletics &  
Transportation*

BRUCE I. JAYNES  
*Director of Technology*



DR. TAMMY STERN  
*Interim Superintendent of Schools  
Director of Federal Programs/  
Director of Curriculum and Instruction K-12*

MICHAEL J. OMATICK, JR.  
*Director of Buildings & Grounds*

GLORIA J. CLAWSON  
*Director of Food Services*

MICHAEL A. PARLAK  
*Director of Security/Facilities Manager*

VICKI D. MCWILLIAMS  
*Secretary to Board of Education*

October 20, 2011

Edulog support's Annie Jensen is a dream. She never let me down and is professional and prompt. Our technicians at the district would say no to something and she would keep working it and changing it to make it work. Annie was persistent and she worked until she got what we needed. Tomorrow will be our forth download. I'm down to 120 students that don't match and those are P.O. boxes. A significant improvement to where we were in the past. That is the best match rate we've ever had! Annie never left me waiting or wondering. She kept me in the loop every step of the way. Without Annie's persistence and expertise we would have never had the results we do now. Thanks Edulog and thanks Annie!!

Deborah Petrone  
*Secretary of Transportation*





**PENNBRIDGE SCHOOL DISTRICT**

1506 N. Fifth Street  
Perkasie, Pennsylvania 18944  
Telephone: 215-453-2369 • Fax: 215-257-4574

ROBERT S. KISH (Ed. D.)  
District Superintendent

Denise McCue  
Director of Transportation

October 10, 2011

Education Logistics, Inc.  
3000 Palmer Street  
Missoula, MT 59808

Dear Shawna Knudson:

I would like to take this opportunity to thank Edulog for their assistance this summer. We were notified on July 11, 2011 that all the bus runs/routes that had been established for the 2011-12 school year could not be used due to ongoing contract negotiations with the bus drivers.

We notified Edulog of our problem and began discussions regarding how we could precede. It was determined that another Edulog area, to copy all our public school bus runs from the previous year, would be necessary. During the discussions, it was decided that the special needs and private school runs would stay in the 2011-12 area.

After the decision was made, approval for another area was broached with management of Edulog. They approved this endeavor and by Wednesday afternoon the process began.

Different glitches occurred along the way, but everyone worked together and assisted my department in accomplishing their goal of having all the bus runs ready for the drivers on August 2, 2011 at 9:00 AM for their meeting. Much was accomplished in very little time. Pennridge School District Transportation Department again for the third year had a proficient start up of school year.

Without the help of Edulog management, Charmaine Forran, Chris Lowry and Ryan Ballas we could never have accomplished this feat. We thank you very much for your assistance and also allowing us to have this extra area for the 2011-12 school year at no cost to the school district.

This type of team work is what makes a very good working relationship. Thank you again for the assistance, perseverance and time from July 11<sup>th</sup> until now. It is very much appreciated.

Sincerely,

Denise McCue  
Director of Transportation

***Mission Statement***

*The Pennridge School District, in partnership with family and community, will provide all students with numerous and varied opportunities to gain the knowledge and skill necessary to grow into healthy, productive citizens equipped for life-long learning.*





***Transportation Department***

*Tuscaloosa City Schools*

*1302 37th Street East • Tuscaloosa, AL 35405 • Phone (205) 247-2400 • Fax (205) 247-2403*

September 19, 2011

Edulog Logistics  
3000 Palmer Street  
Missoula, Montana 59808

Dear Edulog,

In July the Director of Transportation for the Tuscaloosa City Schools had a heart attack. He is also the main user of our Edulog system. This created major issues in completing the routing for the 2011-2012 school year. We are very appreciative of the great service we recieved from Edulog's weekend summer support.

The support we received from Edulog was vital in completing the routing for the new school year. All of the staff were very professional in assisting us through a this difficult time period. With the assistance from Edulog, we were able to complete many of our routes which had not been completed, and also still make our deadline to publish our bus routes in the local newspaper. Edulog helped save our school startup."

"The support staff is very professional and returned our calls quickly. They also took time to not only help but explain the steps associated with assigning routes. Without Edulog's help we would not have had the routes completed by school start. I can't say enough about Edulog's weekend support. Thank you."  
Tuscaloosa City Schools.

A handwritten signature in cursive script, appearing to read "Melissa McAteer".

Melissa McAteer  
Secretary/Bookkeeper





**GOVERNING BOARD**  
Maribel Lopez, President  
Suzanne Hopkins, Vice President  
Tom Carlson, Member  
John Lewandowski, Member  
Dan Post, Member



**ADMINISTRATION**  
Doug Wilson, Ed. D., Superintendent  
Carolyn Dumler, Ed. D. Assistant Superintendent  
Jan Truitt, Ed.D., Assistant Superintendent  
Dan Contorno, Chief Financial Officer

February 28, 2011

Education Logistics, Inc  
3000 Palmer Street  
Missoula, MT 59808

Dear Edulog Staff,

Every year there are several vendors that attempt to convince those of us in our department to change to other transportation software programs. These attempts are not given consideration because we rely on Edulog for many areas of our operation. Of course there are the obvious routing and reports, but there are numerous other applications as well.

We use E-Trip for all of our field trip needs, and download reports from E-Trip into our payroll software. Fleet Pro is our vehicle maintenance software, we even download fuel transactions into Fleet Pro through a hyper terminal connection. The routing technician uses Edulog intensively for the specialized routing needed for sped and McKinney Vento students.

In our district we have created the "Transportation Web." This is an internal website with links to Web Query, Web Student, School Assistant, E-Trip, a district bus schedule populated from an Edulog report, and a special needs database also populated with Edulog data. Staff members district-wide use these features every day. We know it is widely used because they sure let us know when the site is down!

In addition to all of these features we also use Edulog for simulations, optimizations, boundary planning, and the shape server for updating our geocode. We were able to participate in planning the last big boundary change and provided demographic data and enrollment projections. In the past outside agencies had to be used costing the district tens of thousands of dollars. The Edulog optimizations that we have run have helped us reduce the number of routes as well as helped make the existing routes more efficient.

Needless to say Edulog is integrated into most of our every day procedures. We do not have issues come up with Edulog very often. But when we do the support that we receive is outstanding and we have never had anything that was not resolved and handled very quickly. Overall I have given the company the best of references to any who have asked. Our department is very excited and looking forward to adding multiple facets of a GPS solution in the near future.

Sincerely,  
Alisha Meza  
Transportation Operations Manager  
Marana Unified School District

11279 W. Grier Road • Marana, Arizona 85653 • (520) 682-3243

**Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16**



*Innovative Technology. Demonstrated Savings. Proven Success.*



August 22, 2012

To Whom it May Concern:

We wanted to send a letter of appreciation and let you know how grateful we are for your support. Canyons School District has been extremely pleased with the product and support from EDULOG. We have used EDULOG for our regular education routing for several years with great results. In 2009, we switched all of our special education routes to EDULOG and realized a cost savings of more than \$200,000.00. Since 2009, we have added other services to our package. Each service has helped our transportation department save money and time. Services such as EduTracker and GPS have been invaluable to us.

As much as we appreciate the software, the customer support has been remarkable. Whenever there is a question or concern, we feel like we are your number 1 priority. Over the past year we have also developed a tremendous relationship with our Regional Sale Manager, CJ Otto. CJ has spent countless hours answering questions and following up to ensure our complete satisfaction. Thank you for your past, present and future help and support.

Sincerely,

**Jeff Wren,**

*Regular Education Route Coordinator, Canyons School District Lorraine Miles,*

*Special Education Route Coordinator, Canyons School District*

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## CASE STUDIES

### HENRY COUNTY SCHOOLS

255 Lemon Street  
McDonough, GA 30253

Total Number of Students: 40,000  
Total Number of Transported Students: 22,000

The EDULOG GPS/AVL system and routing and scheduling software (EDULOG.nt) was used by the Henry County Schools (HCS) of Georgia to eliminate more than 8,000 unnecessary bus stops, resulting in an annual reduction in fuel costs of \$392,500 according to the district.

Serving one of the fastest growing counties in the nation, the Henry County Schools educates more than 38,000 students at 44 schools. 24,000 students are transported daily throughout the county with a fleet of more than 300 buses.

**The EDULOG GPS/AVL system and routing and scheduling software (EDULOG.nt) was used by the Henry County Schools of Georgia to eliminate more than 8,000 unnecessary bus stops, resulting in an annual reduction in fuel costs of \$392,500 according to the district.**

“Using the EDULOG system, we were able to track and eliminate a tremendous number of unnecessary stops—we went from 16,000 daily throughout the district to 8,000,” said HCS transportation director Cliff Shearouse. “Our initial savings in the first month was 22,000 gallons of fuel. In subsequent months, we’ve averaged a fuel savings of 15,000 gallons compared to the same month one year ago. At \$2.50/gallon for fuel, that’s almost \$40,000 per month in savings that goes right to the bottom line! You can use any GPS system to help reduce idle time, but only EDULOG offers direct integration between the GPS and routing software that can produce additional savings by eliminating unneeded stops and then ensuring drivers are adhering to the changes.”

**“You can use any GPS system to help reduce idle time, but only EDULOG offers direct integration between the GPS and routing software that can produce additional savings by eliminating unneeded stops . . . that’s almost \$40,000 per month in savings that goes right to the bottom line!”**

*Cliff Shearouse*

***Not only has the EDULOG system more than paid for itself by producing these documented fuel savings, but this return on investment will continue in subsequent years.*** The benefits are real, easily obtainable, and based on EDULOG’s proven method of integrating actual routing data into the planning model.

***Because the EDULOG GPS/AVL system gives school districts total knowledge of the activities of each bus during the day, system operators can quickly and accurately determine which bus stops are no longer needed, and then pass that information to the EDULOG routing and scheduling system so that route sheets can be altered and new driving directions produced.*** The resulting reduction in bus idling—brought about by eliminating stops where there are no passengers or by consolidating stop locations—not only reduces fuel consumption and costs, but it also increases routing efficiency and reduces CO<sub>2</sub> emissions.



**Unlike other systems that claim to offer “integrated GPS” but which are only able to provide one-way integration with planned routing data, EDULOG’s GPS solutions go far beyond this initial milestone.** When used in conjunction with EDULOG’s routing software, EDULOG GPS/AVL can take live GPS data and push it into the planned routing database. Rather than having to rely on a “best guess” model of what’s occurring on the road, clients can update routing information based on data collected in the real world in real time.

As real world GPS data from EDULOG GPS/AVL is moved into the district’s routing system, it greatly improves the accuracy of such things as exact stop locations and times, street segment speeds, etc. More exact data provided by the GPS system can lead to increased efficiencies and extremely meaningful run and route optimization.

## DENTON INDEPENDENT SCHOOL DISTRICT

5093 East McKinney

Denton, TX 76205

Total Number of Students: 24,000

Total Number of Transported Students: 8,400

In 2010, EDULOG implemented the most advanced and complete hardware/software system to this date for school bus tracking, student identification, and real-time integration with routing and scheduling activities. In partnership with the Denton Independent School District (DISD) of Denton, TX, EDULOG installed on 168 school buses an integrated system that includes GPS units, long range RFID readers for student tracking, and mobile data terminals (MDTs) for instantaneous two-way text communication between the buses and the transportation office. In addition to the hardware, EDULOG provided *EduTracker* software and project management services to incorporate these advanced tracking capabilities with the DISD’s existing transportation operation and EDULOG routing and scheduling software.

**“We see this as a huge tool to assist us in taking care of and seeing to the welfare of our students,” Transportation Director Gene Holloway said. “Safety and security is the primary, No. 1 priority, and second is our ability to utilize the system to be as efficient and proficient as we can in offering the best services to our students and families.”**

*Denton Record-Chronicle*

“Safety and efficiency are the top priorities of the transportation department. And of all the GPS companies, only EDULOG has the complete package to meet these goals,” said Gene Holloway, DISD transportation director. **“The other companies have bits and pieces, and they claim that their products can be integrated with our routing and scheduling software, but only EDULOG could prove that they’d deliver what I want: tracking of every student on every bus, MDTs as a back-up for when a student forgot their card and for sending driver directions straight to the bus, and real-time alerts for when a bus is speeding or going off-route.”**

The Denton ISD is a very forward-thinking school district when it comes to managing its transportation resources, and they recognize how critical it is to have a complete system provided by one vendor with all the components integrated with each other. For example, there are RFID student tracking systems out there that can tell you when and where a student gets on or off the bus and the name of that student, but that’s as far it goes. But with the EDULOG integration, you can know that and much more: who was supposed to be on the bus but never showed up, who left the bus at the wrong stop and where. Because of this two-way integration with the EDULOG routing and scheduling databases, districts can have a true real-time dispatch and alert system rather than simply an after the fact review and report tool—and isn’t that really the whole point of student tracking?





"We're excited about the student tracking capabilities, especially in how it will automate our head counts for the required state reports, but it is the MDT functions that really separated EDULOG from the other systems that we looked at, added Holloway. "It's a fact that every day students will lose or forget their ID cards, and then what do you do? With EDULOG's MDTs, the answer is simple: just have the driver point to the touch screen and select the student from the passenger list displayed on the MDT screen for the current bus stop. In this manner, every student is counted and recorded, and parents know that we're looking out for their children."

Holloway also emphasized the unique advantages offered by the MDTs as a result of the full integration with the EDULOG routing software. "Because they'll show turn by turn driver directions taken from the routing and scheduling system, the MDTs will be a big help for substitute drivers who might be unfamiliar with that bus's run. And if a run has been changed recently because a stop is no longer needed or a new student needs to be picked up, the driver has access to that information right there in the vehicle."

In a recent interview with the local press, Holloway said that the GPS/Student Tracking operation is: "much like an air traffic controller in a control facility to see where the buses are in real time. We'll be able, from our offices and from our operations center, to access all information of where the bus is located, the speed of the bus, and the number of students and names of the students that are on the bus at any given time in real time. ***A parent can call DISD transportation and inquire to and about the location of their student's bus, and if the student has boarded the bus or off-loaded the bus. Between the student tracking and the GPS, we will be able to provide safer, more dependable and consistent service to the students and parents of DISD.***"

**With the EDULOG MDT solution, you can send driver directions straight to the bus, and much more: you can track who was supposed to be on the bus but never showed up, who left the bus at the wrong stop and where. Because of this two-way integration with the EDULOG routing and scheduling databases, districts can have a real time dispatch and alert system.**

The Denton ISD will benefit from the full capabilities of the EDULOG system. Speeding alerts, missed stops, unscheduled stops, excessive idling, buses off course or far behind schedule are all events that the transportation department will be able to monitor and control in real time. When combined with the student tracking and MDT functions and the existing routing and scheduling system, the district has a true decision support and dispatching system that not only emphasizes best practices and management by exception, but also gives transportation staff the ability to immediately and effectively solve problems as they occur.

For example, ***EDULOG's RunEditor will be used by the district to gather actual time, location, and distance data that will interface with the planned data in the routing and scheduling system. No other GPS system has this ability to validate and improve routing and scheduling information—and when this is combined with the EDULOG optimization programs, the result is the most efficient transportation plan possible with the least amount of effort.*** But the *EduTracker* system does more than just improve an existing bus plan, it can also be used to automatically create new stop locations, runs, and routes for the transportation system, which is of critical importance to special education routing. Not only will this save the district a considerable amount of time and effort, but it will also ensure that the data is accurate and complete enough to meet regulatory standards. This GPS/AVL automatic data collection can also include driver directions with turns, street names, and distances between points, which are unprecedented capabilities in this market.





EDULOG's approach to student tracking has been to design its GPS solutions to offer clients the ability to select from the complete range of student tracking options. And as with GPS/AVL, the value of a student tracking system can be exponentially increased when it is integrated with planned routing data. ***Rather than simply tracking which students board and exit the bus, clients can compare this information to a list of students assigned to a given bus stop. Not only can dispatch know when a child has exited at an unassigned stop, the driver will know when someone boards the bus who isn't supposed to.***

As a true dispatch tool, *EduTracker* allows operators to better manage phone calls from parents and determine with detailed accuracy where their child is located, if/when they were picked up or dropped off, and exactly what time this occurred. Beyond daily operations, further routing efficiencies can occur because the system gives you a better understanding of exactly how many students are actually riding the bus compared to the total number eligible for transportation.

## GALENA PARK INDEPENDENT SCHOOL DISTRICT

14705 Woodforest Boulevard  
Galena Park, TX 77015

Total Number of Students: 21,000  
Total Number of Transported Students: 5,400

In April of 2010, the Galena Park Independent School District (GPISD) of Texas enhanced its EDULOG GPS/AVL system by adding student ridership tracking and driver payroll capabilities. 100 of the district's maintenance vehicles are also now equipped with EDULOG's cell phone-based GPS/AVL. In addition to student tracking, driver payroll, and GPS/AVL software, EDULOG supplied the district with 117 RFID readers, 64 mobile data terminals, and 100 mounting kits for the cell phones. As usual, professional project management services from EDULOG's Customer ACE department and continuing hardware and software support will be provided for the life of the contract. The Galena Park Independent School District is located in the metropolitan Houston area and serves more than 21,000 students attending 25 schools.

The Galena Park Independent School District was where we first integrated the EDULOG GPS/AVL system with the Transfinder routing and scheduling software, and the success of that project proved to the K-12 community that EDULOG has the engineering and project management skills to deliver the most advanced GPS systems for school busing. With the implementation of the student tracking and driver payroll portions of EDULOG's integrated suite of transportation management products, the GPISD has one of the most capable real-time tracking systems in North America.

***"We owe a lot to EDULOG. They were the ones who took on the integration that no one else would do, and they're the ones who proved that the sum really is more than just the combination of hardware, software, support, and training. This whole project has also emphasized for me the need to have one vendor responsible for all aspects of the project, and for that vendor to have proven project management skills."***

*Jim Beesley*

***"We've been using the EDULOG GPS system on our school buses for two years, and we couldn't be more pleased,"*** said Galena Park Independent School District transportation director Jim Beesley. "We've also been planning to add student tracking for some time, and so we've decided to equip each bus with RFID readers. In addition, we're also installing MDTs on the special education vehicles. With these two hardware items from EDULOG, the district will be able to automate the head counting for the state report and also tell each



school at any time who exactly is riding on the bus. ***The addition of student tracking will be a real service to the community, and undoubtedly will be seen as an effective security measure.***

"We're also expanding the use of the GPS/AVL system to include the district's maintenance vehicles, which will speed up the response time for service calls by allowing us to know where everyone is in real time," added Beesley. "We also believe that the introduction of the EDULOG driver payroll system will pay for itself almost immediately because we will now be able to accurately and efficiently track work schedules, thus eliminating the possibility of payment for work not performed. All of this is a big step forward for the district, but based on our past experience with EDULOG, we're confident that this new project will bring an almost immediate return on investment."

EDULOG's involvement with the Galena Park Independent School District began when the company was awarded a contract based on a very competitive RFP for GPS hardware. "When I assumed the duties of director in 2006, my vision was to become one of the most technologically advanced districts in Texas," said Beesley, "and I understood that installing GPS on school buses could produce greater savings and security. But when we initially issued the RFP for this equipment back in 2007, I had no idea that it would be this successful!"

The RFP released by the district was deliberately open-ended: the district had Transfinder's routing software and wanted GPS hardware that would provide real-time data transmission from the buses and that would be compatible with Transfinder's GPS/AVL tracking software. Beesley said that at the time of the RFP "I was thinking that GPS was sort of a commodity, like tires. After all, the same signals are sent from the satellites to the GPS units, and then it's just a matter of getting that signal data into the Transfinder AVL software. Boy, was I wrong."

**Unlike the typical 'data overlay' approach commonly used by other routing and GPS vendor combinations, no separate export/import process is needed to combine the data.**

The evaluation and resulting discussions with the RFP respondents highlighted some other differences between the companies and their approaches. ***"It seemed that some guys just wanted to sell me equipment. EDULOG wanted to sell me solutions,"*** explained Beesley. "They seemed to have a lot of knowledge about how to use GPS not just as a tracking tool, but as a management system, and they really seemed to have a vision that coincided nicely with mine. As a GPS provider that is a software company at its core, they were clearly the most experienced in working on exactly this type of integration project."

After the EDULOG hardware was installed, the district asked EDULOG to provide GPS/AVL software that would integrate with the district's Transfinder routing and scheduling software. To achieve the goal of integration of planned data from the Transfinder software with real world GPS information gathered by the EDULOG system, we developed an interface using *BusTracker's* open system design. Data from the routing and scheduling system, such as changes in bus stop locations or new run sequences, is directly accessible by the *BusTracker* software. Unlike the typical "data overlay" approach commonly used by other routing and GPS vendor combinations, no separate export/import process is needed to combine the data. No one else has ever been able to accomplish this direct database integration, but we took on the challenge, and it works, thanks to the way we developed *BusTracker* as a system to be used with non-EDULOG routing and scheduling software programs.

"The results have really been impressive," adds Beesley. "Now we can know immediately when a bus is off course or how soon it will come to stop where a parent is waiting, and this is all done seamlessly through the interface that EDULOG created for us. With EDULOG I have a true dispatch tool, and I'm confident that we can use the EDULOG system to handle any emergency or unusual situation. And now that we have this comparative analysis function, everyone, including the drivers, has become a lot more conscientious about following



schedules and reporting problems. ***I have much more than just a tracking and reporting tool with EDULOG—I have a real management system to make things better.***

“We owe a lot to EDULOG,” says Beesley. “They were the ones who took on the integration with Transfinder that no one else would do, and they’re the ones who proved that the sum really is more than just the combination of hardware, software, support, and training. This whole project has also emphasized for me the need to have one vendor responsible for all aspects of the project, and for that vendor to have proven project management skills.”



## PRODUCT INFORMATION

### ALL UNDER ONE ROOF

A fully integrated transportation management system that is powerful enough to interact with everyone in the school district and community and that is also easy to use, with one consistent interface and database strategy was considered an unattainable goal of K-12 busing operators—until now. With the continued development and advancement of the EDULOG transportation management system, we have expanded the possibilities for information sharing and the leveraging of your technology investments while retaining the power, flexibility, and ease of use that have been our system's base since 1979.

A fully integrated transportation management system that is powerful enough to interact with everyone in the school district and community and that is also easy to use, with one consistent interface and database strategy was considered an unattainable goal of K-12 busing operators—until now. With the continued development and advancement of the EDULOG transportation management system, we have expanded the possibilities for information sharing and the leveraging of your technology investments while retaining the power, flexibility, and ease of use that have been our system's base since 1979. With the EDULOG approach, you get (not all of the capabilities are included in the system currently proposed to the Lafayette Parish School Board):

- Regular bus routing and scheduling
- Special needs transportation
- Field trips
- Fleet maintenance
- Route planning
- Accounting
- Enhanced GPS tracking
- Student passenger management
- Driver time and attendance tracking
- Vehicle inspections
- Application connectivity and consistency (even from mobile devices)
- Easy to maintain data structures
- A consistent look and feel for all software and processes
- Support and assistance from a single, proven company, specializing solely in K-12 transportation

**EDULOG continues to strengthen our ties to our long-term clients through the introduction of integrated GPS/AVL and student passenger management technology, on-vehicle tablets, new web features, and enhanced consulting and support services. EDULOG's strength of experience is also on a personal level. Many EDULOG managers have been assisting our clients for more than 20 years, and the entire staff has nearly 700 years of experience with school transportation operations.**

**Now there is no need to have a routing and scheduling system from one vendor, mapping software from a second, GPS/AVL equipment from a third, fleet maintenance software from a fourth, and a web portal for transportation information developed by in-house staff—it's all available from EDULOG today.**



## SYSTEM EASE-OF-USE

Ease-of-use is not equivalent to simplicity or a result of a “one size fits all” solution that employs “one touch routing” with results that cannot be modified. Instead, ease of use comes from having the right tool for the job at hand. With the EDULOG system, that means automating processes such as student information transfer, map updating, and assigning students. This EDULOG batch processing capability has been proven to be far the most effective method of managing the daily transportation changes that all large school busing providers must accomplish. Rather than having to manually type and check every student entry or bus stop assignment as with other software packages, the EDULOG system automatically processes changed or new information based on rules established with the district. The benefit of this automation power is tremendous: instead of having routers performing clerical tasks and duplicating data entry, the transportation department can leave that up to the EDULOG system and pay attention to what is really important: those special circumstances that need immediate attention and the overall effort to improve service and efficiency.

**Use Google to search for EDULOG in the news. Compared to the other systems, you won't find a single mention of problems in the past year for districts using the EDULOG transportation management system.**

## COST SAVINGS

The ability to create efficiencies in a K-12 transportation operation is fundamentally a result of the system's optimization capabilities. Without the ability to have the software make rational decisions guided by district policies, there can be no significant cost savings from a transportation management system. **In other words, without effective optimization capabilities, the routing and scheduling system is simply a database that is manipulated by system operators as best as the district can do.** Compare that to the proven performance of the EDULOG system:

- The Miami-Dade County Public Schools recently used the EDULOG system to remove 74 buses from service.
- The Toronto District School Board attributes \$20 million in savings over the years to the EDULOG software.
- EDULOG recently showed the Lafayette Parish School Board of Georgia how to eliminate 10 special needs buses—while maintaining the current level of service.
- The Toledo Public School and EDULOG produced a savings in the transportation budget of more than \$1.3 million this year.
- The Memphis City Schools used the EDULOG system to reduce its transportation expenses by \$8.2 million in 2009.
- The Carroll County School System of Georgia used the EDULOG system to reduce its fleet by 30 buses.
- The Charlotte-Mecklenburg Schools of North Carolina saved \$495,000, parked 100 buses, and consolidated 11,000 stops thanks to the EDULOG system.
- The Canyons School District of Utah reports more than \$200,000 in savings after the first year of using EDULOG software.





## VENDOR EXPERIENCE AND SERVICE

EDULOG has been serving school district transportation operations longer than any other software vendor, and we continue to strengthen our ties to our long-term clients through the introduction of integrated GPS/AVL and student passenger management technology, new web features, and enhanced consulting and support services. EDULOG's strength of experience is also on a personal level. Many EDULOG managers have been assisting school districts for more than 20 years, and the entire staff has nearly 700 years of experience with school district transportation operations. But we go beyond merely sitting in an office and talking to clients on the phone: many projects have EDULOG staff at customer sites for weeks at a time, and several of the company's employees have actually been assigned to work side-by-side with district transportation staff for months, and in some cases, years.

Because of this constant interaction with our clients, we know first-hand what it takes to successfully manage a busing operation such as the Lafayette Parish School Board's, and this is experience that cannot be obtained by instructing district staff for a few days and then having a salesperson stop by once or twice a year. We've been with districts during the preparation of a new school year's transportation plan and those first hectic weeks when recently-enrolled students need busing right away. And we've also been there when new school boundaries require major changes to bus routes during the winter break, or when a bond measure fails and the number of buses in service needs to be drastically reduced to meet the shrinking budget.

**As many EDULOG clients will tell the LPSB, the amount and quality of post-implementation consulting services that a software vendor can provide is perhaps even more valuable than the system itself.** Does the district need to significantly reduce its operating budget because of funding reductions? EDULOG has assisted several districts with just such a project. Does the district need to create an entirely new transportation plan because of major changes in school attendance boundaries and policies? Again, EDULOG has done that for large school districts. Or does the district need to implement a new method to monitor performance and costs? Once more, EDULOG has performed this service. EDULOG has the experience and knowledge to go beyond simple analysis and provide effective recommendations that result in verifiable and permanent improvements—in addition to the software tools that give districts what they need to affect positive change.

And the end result? The transportation department looks good, costs are contained, there is no need for a time-consuming RFP process to select a consultant, and the changes can be made quickly because the supporting software is already in place. No other software vendor can offer (or prove) greater success with large school district operations than EDULOG.

## WHY HAVE AN EDULOG INTEGRATED TRANSPORTATION MANAGEMENT SYSTEM?

It has been well documented that the use of EDULOG routing and scheduling software (which is only one piece of the EDULOG integrated K-12 transportation management system) will produce financial savings. In a further section of this RFP response we will present case studies that further document financial success directly attributable to EDULOG system use.

The financial savings realized from implementing and using EDULOG routing and scheduling software is primarily a result reducing the number of vehicles in service because of better route planning or reducing the number of miles driven, or a combination of the two. These result in less expenditures for fuel, replacement vehicles, labor (drivers, aides, mechanics), insurance, and non-fuel consumables (lubricants, tires, etc.).



There are, of course, other financial savings that can be realized by having an EDULOG routing and scheduling system—especially labor and administrative costs related to transportation planning, maintenance and administration of the transportation plan, and reporting of statistics and the dissemination of information to the state, schools, and the community.

We will discuss the potential for these “off the road” savings further in this document, but we would also like to point that there are further benefits to having an EDULOG integrated transportation management system (of which routing and scheduling is only one part) that go beyond dollars and cents. They include:

- Greater management control and mechanisms for change
- Increased situational awareness and student safety
- Improved service to the community

But let us return to the financial benefits of having a system.

## FINANCIAL BENEFITS

### Optimization

To some degree or another, all K-12 routing and scheduling systems can show on a digital map bus stop locations, student residences, schools, and the path that buses take to link the destinations together. Having this display capability is better than relying on colored pins and strings on a map, but it really doesn't address the issue of “how do I make my routes and schedules more efficient by reducing vehicles and miles while providing the same level of service?”

To answer that question, EDULOG developed in the 1970s powerful optimization algorithms that allows the software system quickly and efficiently analyze all possible combinations ride times, passenger loads, and route miles in a way that create the best solution based on factors determined by the client.

We then developed the application of route coupling optimization that links together bus runs so that one bus can serve multiple schools in the most efficient manner. That was followed by our introduction of bell time optimization that considers all possible school bell times and makes adjustments so that the least number of buses can be used to transport all students.

And it is through optimization that real “on the road” savings are produced—EDULOG optimization at the Toledo Public Schools of Ohio resulted in a fleet reduction from 143 to 102 buses, with a projected annual savings in transportation costs of \$1,394,000—based on the district's figure of \$34,000 in annual expenses for each bus in service. But not all optimization processes are the same—either in their power or flexibility, or the amount of operator control that is provided to account for unique circumstances.

Fortunately, there are ways to evaluate optimization capabilities:

Does the system provide sufficient feasibility in defining the actual requirements of the client? For example, when a system builds bus runs from scratch, can it consider different size vehicles, and can it limit bus runs by time and/or load? Can the user specify the desired number of vehicles to minimize the total fleet requirement?

- Another example is linking bus runs into full day schedules; can the system allow for individual arrival and departure time windows for each school and also each bus run? Can it consider road conditions or traffic congestion?



- What is the track record of the vendor with its optimization software? Has the system proved itself in the claimed capabilities? How has it done in agency administered tests against other systems?

The EDULOG optimization approach is based on a very solid mathematical background, and the algorithms are constantly being enhanced to increase performance in response time and the quality of solutions produced. And just as importantly, the whole procedure of building bus routes is extremely user-friendly, easy to train on and operate, and totally automatic.

### **Savings from the Optional *EduTracker* GPS/AVL System**

Global Positioning Systems (GPS) have existed for more than 20 years, but only recently have they been implemented in the student transportation industry. Initially, safety concerns spurred the decisions to equip school buses with GPS (knowing where a bus is and what it is doing at any given time is a significant security benefit). And although the safety benefits of GPS are vital, other advantages that GPS brings to a school transportation operation can recover the cost of the system and provide significant, continuing cost savings at a time when increasing efficiencies and reducing operating costs are more important than ever.

Based on the experiences of clients that have implemented an EDULOG GPS solution, conclusions can be drawn about the potential results from installing such a system. The financial savings available can be quite startling. Often the return on investment (ROI) can be so significant that clients discover it's not a question of whether they can afford to have an EDULOG GPS solution—but rather how can they afford to be without one.

As the results below clearly show, there are multiple ways to permanently reduce transportation costs by a significant margin through:

- Controlling Route Deviation
- Eliminating Unscheduled Stops
- Reducing Unnecessary Idling
- Tracking Driver Times and Activities

In the following examples of cost savings, we will use a hypothetical school transportation operation with 245 buses—approximately equivalent to the total regular education fleet size of the Lafayette Parish School Board.

**Although the safety benefits of GPS are vital, other benefits of GPS will result in an almost immediate return on investment and provide significant, continuing cost savings at a time when increasing efficiencies and reducing operating costs are more important than ever.**



## Reducing Route Deviation

Unplanned route deviations are a significant cost because they unnecessarily waste fuel, increase the total driving miles and the associated maintenance costs of buses, and are an unproductive use of driver payroll. Reducing the amount of route deviations will immediately reduce costs. It is estimated that without any ability to actively monitor and confirm that its buses are following their planned routes, the typical operation has no less than a six percent deviation from its planned bus routes on an annual basis. An EDULOG GPS solution will allow you to identify and eliminate most route deviations by having the ability to compare real world GPS data with the planned route for that bus. Therefore, the following savings are available:

<b>Average Daily Mileage Per Bus</b>	<b>67</b>
<b>Assumed Deviation</b>	<b>5.40%</b>
<b>Extra Miles Driven Per Bus Per Day</b>	<b>3.62</b>
<b>Extra Gallons of Fuel Used Per Bus Per Day</b> (7 miles per gallon)	<b>0.52</b>
<b>Extra Fuel Cost Per Bus Per Day</b> (\$3.00 per gallon)	<b>\$1.55</b>
<b>180 school days</b>	<b>\$279.10</b>
<b>Total Buses in Fleet</b>	<b>285</b>
<b>Total Annual Savings</b>	<b>\$79,544</b>

Note: The above only considers the cost of fuel. It does not take into account wear and tear on a school bus, maintenance expenses, driver payroll, and other costly factors caused by driving unnecessary miles.

## Reducing Unscheduled Stops

It is well known that bus drivers do not always make the same stops as planned by the transportation department—drivers often ignore some planned stops and make a number of unscheduled stops. This isn't necessarily the result of drivers intentionally doing something they know is wrong, but the difference between what is planned to happen versus what actually happens in the real world can be a meaningful area for cost savings. Skipped and unscheduled bus stops can occur for a variety of reasons—for example:

- A. Drivers may not report when a student stops riding the bus (they may not be motivated to do so because it would reduce their total route time). They don't make the stop for the phantom student, but rather drive past it, and the information never gets to the transportation department so that the planned schedule for that route can be altered. Transportation planners will continue to route the bus with the assumption that the stop is needed—thus reducing routing efficiency.
- B. Drivers may be picking up some students at bus stops that the transportation department is unaware of, therefore making unscheduled stops (such as stopping directly in front of a student's home as a convenience). The driver may not believe he/she is doing anything wrong if this unscheduled stop is along the route they are supposed to be driving. However, each time the bus comes to a stop and then must accelerate back to driving speed, there is an associated cost in increased fuel use. Unscheduled stops made willfully by drivers for other reasons are equally as expensive.

By implementing an EDULOG GPS solution, school transportation managers will be able to quickly identify and remove most unscheduled bus stops. This will improve the quality of the planned data used for bus routing and scheduling and will effectively reduce payroll, idle time, total mileage, and fuel consumption. It has been estimated by other EDULOG clients that removing a single unscheduled daily bus stop will result in an annual sav-



ings of \$60 to \$70 per year. With an average unscheduled stop rate of five percent, the typical client would realize the following savings:

<b>Rate Unscheduled</b>	<b>5.00%</b>
<b>Average Unscheduled Stops Per Day Per Bus</b>	<b>3.05</b>
<b>Excess Annual Cost Per Bus</b> (\$60 per year per stop)	<b>\$183.00</b>
<b>Total Buses in Fleet</b>	<b>285</b>
<b>Total Annual Savings</b>	<b>\$52,155</b>

Note: The above only considers the cost of fuel saved by reducing unscheduled stops. It does not take into account wear and tear on a school bus, maintenance expenses, driver payroll, and other costly factors caused by unscheduled stops. It also does not consider the potential savings available from increasing routing efficiencies, as described above, which would be a benefit caused by having more accurate stop data for planning purposes.

### Reducing Engine Idling Time

Fuel is one of the greatest costs associated with pupil transportation. Therefore, any reduction in the amount of fuel used by the fleet will result in immediate savings. The results shown above from reducing route deviation and removing unscheduled bus stops specifically focus on reducing fuel expenses. However, simply reducing the amount of time that buses are stationary with their engines idling can provide a substantial return in savings.

A certain amount of engine idle time is to be expected for any school bus operation. Transportation departments can attempt to minimize fuel waste by setting a policy (for example, buses should never idle for more than ten minutes at a time). However, without a system that can actually track idle time, it is virtually impossible to enforce the policy. An EDULOG GPS solution monitors bus idle time, both historically (through reports) and also in real time. Transportation Managers could then effectively enforce an idle time policy: drivers would be aware that their idle time is being monitored and therefore would be less likely to violate the policy. And in extreme cases, dispatch can be immediately notified of gross violations in real time (a bus idling for 45 minutes), allowing them to contact the driver and tell him/her to turn off the engine.

The cost of unnecessary idle time is significant. The national average is ½ gallon of fuel used per one hour of idle time (Source: US, EPA). The ability of the transportation department to enforce an idle time policy using an EDULOG GPS solution will result in immediate cost savings. Based on the results at other EDULOG clients, it is reasonable to project that at least 14 minutes of idle time per bus per day can be eliminated.





<b>Minutes Reduced Idle Time Per Day Per Bus</b>	<b>14</b>
<b>Excess Gallons Of Fuel Per Day Per Bus</b> (1/2 gallon per 1 hour idling)	<b>0.12</b>
<b>Excess Fuel Cost Per Day Per Bus</b> (\$3.00 per gallon)	<b>\$0.35</b>
<b>180 School Days</b>	<b>\$63.00</b>
<b>Total Buses in Fleet</b>	<b>285</b>
<b>Total Annual Savings</b>	<b>\$17,955</b>

Note: the above figures do not include the occasional gross violations (bus idling for 45 minutes or more) that occur.

### Reducing Driver Payroll

The other major recurring cost for a school transportation organization besides fuel is payroll, and the largest group of employees is bus drivers. Naturally, driver payroll costs are an inherent part of every operation, and unfairly scrutinizing or penalizing good drivers does not benefit organization or its drivers. However, protecting the transportation department from payroll abuse can substantially reduce excess payroll costs.

For example, it has been widely observed that drivers may “pad their hours” (perhaps inadvertently or unknowingly) by a small amount each day. Every excess minute counts—and quickly adds up—when considering the number of drivers and multiplying the effect over an entire year.

Existing payroll systems make it extremely difficult to reduce this type of payroll slippage—because any comparison of a driver’s logged hours with his/her planned hours must be done manually. As a result, there is no way to recover the estimated extra five to ten minutes that may be lost each day. An EDULOG GPS solution would allow the transportation department to fully integrate the driver payroll system with the scheduled hours for drivers. Through this integration, exception-based reports can document driver logins/logouts that exceed an acceptable time window (show the drivers that logged in more than 15 minutes early, or logged out 30 minutes late). Additionally, comparisons can be made to highlight non-productive time (drivers that spent more than 20 minutes on a pre-tip vehicle inspection), and also slack time (driver completed the pre-trip inspection but did not start the bus run until 27 minutes later).



With access to this invaluable information, management can have drivers modify their behavior and thus dramatically increase the productivity and efficiency of the operation.

<b>Minutes of Wasted Time Reduced Per Driver Per Day</b>	<b>13</b>
<b>Average Hourly Driver Pay Rate</b>	<b>\$12.00</b>
<b>Excess Cost Per Driver Per Day</b>	<b>\$2.60</b>
<b>180 School Days</b>	<b>\$468.00</b>
<b>Total Drivers</b>	<b>285</b>
<b>Total Annual Savings</b>	<b>\$133,380</b>

Note: Many EDULOG clients have reported a substantial savings of ten percent or more in driver payroll simply by announcing to drivers the introduction of GPS. Basic awareness that tracking will occur can lead to improved driver performance.

## Conclusion

EDULOG's GPS solutions offer additional benefits that go far beyond financial return and cost savings. For example, it is difficult to assign a value to the safety and security of children. However, when purely focusing on cost and financial benefits, no other GPS solution can offer the continuing annual cost savings available from EDULOG—because no other system combines both actual GPS data and planned routing and scheduling data into a single system. As discussed in this text, a school transportation operation could immediately begin to realize cost savings starting in month one with an EDULOG GPS solution.

<b>Reduced Route Deviation</b>	<b>\$79,544</b>
<b>Reduced Unscheduled Stops</b>	<b>\$52,155</b>
<b>Reduced Engine Idle Time</b>	<b>\$17,955</b>
<b>Reduced Driver Payroll</b>	<b>\$133,380</b>
<b>Total Annual Savings Immediately Available</b>	<b>\$283,034</b>

Compare the total annual savings with the cost of the system, and it becomes clear that you cannot afford not to have an EDULOG GPS system.

## ADMINISTRATIVE EFFICIENCY

Having student information (names, school of attendance, grade, residence address, special needs, etc.) in a routing and scheduling system is critical for the proper management of a transportation plan. But if all that information has to be entered manually, it creates a tremendous workload, and often leads to information not being updated or maintained. But a really well-designed transportation management system can automatically take information from a student information system and transfer the data correctly to routing and scheduling system—thus alleviating a tremendous amount of typing. EDULOG has interfaces with all the leading student information systems for this information transfer, and also interfaces with a number of legacy systems (after all, we've been doing this for more than 30 years).

But having the student information in the system is just a start—transportation departments or school administrators then have to assign students to a bus stop and a bus route—again a time-consuming process.

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.

That's why EDULOG developed a process so that within three minutes of entering a student in a district's SIS, the EDULOG system automatically receives that information, determines transportation eligibility, assigns the student to the correct bus stop and run, and prints a bus pass.

### **Special Needs Transportation**

At many school districts, managing special needs transportation involves as much as 70 percent of the time spent on routing and scheduling activities. The task of managing special needs transportation is made even more difficult by the large number of extensive changes made daily.

To alleviate the workload, the EDULOG system conducts all required special needs transportation functions, including special identification of handicapped students and their appropriate program, the ability to specify global or individual load times for special needs students, the generation of door-to-door pickup stops, the ability to group special needs students separately or have them be "mainstreamed" for routing purposes, and the ability to include medical information and/or a student's individualized transportation plan on the student census record.

### **Information Access**

The Internet has changed school district operations forever, and EDULOG was the first to leverage this change by creating tools to electronically broadcast transportation information throughout the school district and community.

We know that everyone wants instant access to real time information. With EDULOG web applications, that Lafayette Parish School Board can give parents, principals, secretaries, realtors, and other interested parties detailed information about bus runs, school boundaries, and student transportation assignments. By distributing information through the web, you decrease your workload and provide a valuable service to the community.

### **Fleet Maintenance/Parts Inventory (Optional)**

Significant operational savings can result from having an easy-to-use, fully integrated, vehicle specific database software system, for managing vehicles, parts inventory, work orders, and personnel. A complete case history can be kept for each vehicle that monitors operating costs, repairs, maintenance services, and fuel consumption.

As one example of the usefulness of such a system, the EDULOG system "manages" preventive maintenance. Schedules are evolved by treating a task as though it were regularly scheduled maintenance, letting the user assign it to an experimental timetable. The EDULOG system helps the district establish permanent timetables by allowing the director or manager to experiment with alternate preventive service schedules, and, over time, to tell if a change in maintenance and inspection work is yielding favorable results. Such changes can then be incorporated into the existing maintenance schedule permanently and the job is no longer guesswork.

Costs can also be controlled with the parts inventory feature as inventory problems like shortages and overstocks are recognized and dealt with. Cost savings are produced through several inventory control characteristics, including: an Economic Order Quantity (EOQ) model built into the system causing new orders to be generated for the inventory when a specified level of goods-on-hand is reached; a feature that inserts the number of a given part on order into the inventory automatically; and the maintenance of a complete and up-to-date vendor file.



### Field Trip Management (Optional)

Managing field trip and other extracurricular transportation activities is not only time-consuming, it is also prone to error with most manual approaches—errors that can cost money. Therefore, an integrated transportation management system (such as EDULOG) should automate many of the management functions of field trip transportation. The system allows schools to request field trip transportation and allows administrators to approve or deny such requests. It also allows districts to:

- Automatically assign drivers and vehicles to trips
- Track driver and vehicle availability
- Store various types of information on requests, field trips, groups (schools who request field trip transportation), drivers, and vehicles
- Produce a variety of reports on your field trips
- Automatically calculate charges for trips using a variety of rate choices, then produce invoices to bill groups

### Driver Time and Attendance Tracking (Optional)

Most employee time and attendance systems used by transportation departments simply record log-in/log-out times. But we believe (and many school transportation professionals agree) that much more can be done with a time and attendance system—especially one that is integrated with driver scheduling, vehicle activities, work types, and GPS/AVL.

What EDULOG provides is a system that is a true intelligent worker management system. EDULOG's *eDTA* (Electronic Driver Time and Attendance System) allows you to track and monitor bus driver hours electronically, providing an efficient alternative to traditional paper systems or manual time clocks. It saves time and money by:

- Tracking log-in and log-out times
- Recording vehicle inspection times
- Verifying that drivers are on the right bus/route
- Defining custom labor types and pay rates
- Eliminating wasted time
- Increasing efficiency and driver production
- Preventing driver abuse (padding hours)

## INCREASING MANAGEMENT CONTROL AND EFFICIENCY

An EDULOG integrated transportation management system provides benefits at all three levels of transportation decision-making:

- Operational
- Tactical
- Strategic

At each level, savings can be achieved, and as the planning becomes more advance, the potential for savings grows larger.



As the levels advance, the time scope lengthens:

- days—operational
- months—tactical
- years—strategic

Also as the levels advance, the scope of the enterprise expands

- one school or one bus depot—operational
- the entire district's transportation plan—tactical
- the entire district (transportation and facilities and attendance boundaries)—strategic

This operational level of management involves day-to-day activities

- Making scheduling changes
- Keeping student and transportation information current and correct

Management at the operational level requires quick action, and often involves repetitive tasks. A system at this level needs to be easy to use and flexible, and should follow a work flow that fits the district's way of doing things.

Daily management at the operational level includes giving information to:

- Parents and students
- Schools
- Bus contractors or drivers
- Administrators

This information needs to be correct, and it needs to be produced quickly, especially when a new student is enrolled in the district.

One tremendous benefit of the EDULOG system is that you can put transportation information on the Internet so that parents can look up bus stop and time information for any address. In addition, this information can be made available throughout the district on an intranet.

Operators must also maintain accurate data, which means keeping information up-to-date, and producing reports for:

- Schools
- Bus drivers
- Internal operations

A strong system at the operational level must be able to create both standard reports and "ad-hoc" or customized reports. When creating customized reports the operator must be able to:

- Sort or search on any and all items in the database
- Control the output
- Pass this information on to another system
- Save the report for later use and editing

Operational level actions usually don't require much administrative review, but a system must be flexible enough to let the operator consider all district policies.





However, it is of vital importance to the student and his/her parents that they get assigned transportation immediately.

Systems that cannot process student information downloads on a daily basis or that do not allow for the manual override of system assignments are not adequate for even the operational level.

At the tactical level of planning the EDULOG system offers an even greater savings potential:

- Efficiently planning for school year start-up
- Evaluating and comparing transportation policies
- Quickly and easily changing bus stop locations
- Creating optimized bus runs

Planning at the tactical level usually takes a few weeks to a few months, involves the higher levels of transportation management, and affects the entire district.

- If you can use the system to create state reports, you can save hours of overtime.
- If you can optimize runs and routes, you can save time on the road, mileage, and vehicles.
- If you can plan next year's schedule in two weeks instead of two months you might get to take a vacation.
- If your plan is accurate and valid, you won't have buses passing by students on the first day of school.

At the tactical level, a system must be able to:

- Evaluate transportation policies and bus stop locations
- Build bus runs and routes
- Prepare state reports

These are more complex issues than at the operational level—and require a more sophisticated solution.

At the strategic level EDULOG helps with long-term planning:

- Where is the district going?
- How are we going to get there?
- What can we do to increase efficiency, the level of service, or both?
- These are complex issues, and EDULOG can help solve a variety of “what if” problems

The strategic level often involves transportation in a working group with planning, facilities, educational administration, and looks into the future one or more years. To plan at the strategic level, you may need to use the system to:

- Forecast future enrollments and then use this information to project future bus requirements;
- Determine what would be the increase/decrease in transportation costs if you went from a three year to four year high school plan;
- Create a plan that will satisfy a court-ordered desegregation plan (or to provide supporting statistics to say that the plan has now been met);
- Find the best schedule of school start/end times that would be needed if you were required to reduce the bus fleet by 20 percent.

At the strategic level, policies are evaluated:

- What if the walk to stop or school distances were changed?
- What if school start/end times were altered?



- How will this affect transportation planning?
- What if a school were closed, or opened?

A system must be able to allow a district to:

- Create simulations,
- Save them,
- Analyze them
- And report on them

without affecting your current plan. In fact, you could be working on these strategic planning issues at the same time that someone else creating a new bus run to serve a newly-opened subdivision.

At the strategic level, you may need to analyze growth, decline, or shifts in enrollment

- What if schools change grade configuration?
- What if the attendance boundaries were changed?
- How will all of this affect the other schools and transportation planning?

Unless you have an EDULOG system that gives you integration between transportation and demographic analysis functions, it may prove impossible to perform these tasks with any sort of confidence or statistical validation.

## SAFETY AND SECURITY

Having a passenger roster with names and contact information is obviously valuable in an emergency or when a bus is overdue. In addition, the EDULOG system has been used as a GIS (geographic information system) tool for emergency notification and evacuation not related to transportation—tornadoes, chemical spills, etc. By quickly drawing a boundary at a set distance from the incident, the system was used to find the contact information for all who lived in the area.

With the optional EDULOG *EduTracker* GPS/AVL system, when a driver or vehicle attendant pushes the emergency button on the vehicle, a signal is transmitted through the GPS device to the EDULOG base station server. All workstations currently monitoring the system will have a pop-up box displaying the emergency event, the vehicle number, and the vehicle location.

Because of the integration with routing and scheduling data for both time and place, EDULOG clients can quickly determine if there is an abnormal busing incident and take appropriate action. The delayed or stationary bus is highlighted on the system display, a dispatcher can radio the bus, report the position to authorities, and use the EDULOG system to get the names, phone numbers, and emergency contacts of all involved students.

Knowing where all the vehicles are, and what is happening out on the road, can also increase situational awareness and support effective decision-making when an accident or emergency occurs. These unplanned incidents can be handled better and quicker when a transportation department has an accurate picture of what is happening and are able to make decisions based on real-time information. This results in fewer delays, better use of resources, and better service to students and the community.



## INFORMATION TO THE COMMUNITY

With EDULOG's integrated web browser software, anyone with access to the Internet can look up transportation system information and have their school busing questions answered. Bus assignments, schedule changes, new transportation plans, all this can now be viewed using intuitive, easy-to-use software. School districts that make frequent transportation changes or that need to "broadcast" transportation system information throughout the community find this system to be exceptionally valuable.

The software is extremely useful for answering questions such as: what is the closest bus stop to any given address such as a student's house, when does the bus come in the morning and afternoon, how far is the bus stop from a house, and what is the bus number. In addition, the software shows a map Internet users are familiar with, and the graphic display not only shows the selected address and the closest schools, but also allows the viewer to zoom, pan, and scroll the map. By clicking on the displayed address and then drawing a line to any point (such as a school), the distance along the actual street network is displayed. To produce a paper copy of the map, just click on the print button.

EDULOG's newest offering in its suite of GPS mobile application products is our optional *Parent Portal*. This program allows parents or guardians to track the real-time locations of the vehicles used to transport their children. They can also examine the transportation times (both actual and planned) for the entire day. If the children are en-route to a location, *Parent Portal* provides the current location and the estimated time of arrival. As with all of our applications, *Parent Portal* has many safeguards built into the system to ensure that only authorized users have access to student information.

*Parent Portal* can also be used to send automated text messages to parents to notify them when a bus is expected to be late. This automatic notification capability is not just limited to regularly scheduled buses—it can also be used with any sort of extracurricular bus run such as a field trip or athletic event busing.

## WHAT IS NEW WITH EDULOG SQL AND ONE SCREEN ROUTING?

EDULOG now supports two interfaces based on the MS-SQL database: EDULOG's Advanced interface and the web interface (eSQL). EDULOG's Advanced interface is designed for district staff who perform occasional tasks such as inputting school arrival and departure times, updating or creating vehicle information, and optimization. EDULOG's eSQL interface has been designed to enhance the performance of day-to-day routing tasks such as changing stop assignments or reassigning stops to runs. Your district will be able to have and use both interfaces.

The following are the primary enhancements included in the latest version of our transportation software designed to use an MS-SQL database. We're providing several updates to the way you work in EDULOG. These include improving calculations and reporting features, in addition to powerful new features that enhance usability.

### EDULOG Transportation Software

eSQL has drag and drop functionality for students, stops and runs on the main map display for many of the common tasks you need to perform during the day. You can easily drag a student to a stop to assign them or you can lasso multiple students and assign them all at once to a stop. You can also drag and drop stops to runs just as easily. In addition, you can now re-arrange the user interface workspace for increased utility and also take advantage of dual monitors. New selection tools are available to make working with multiple data

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points faster, and all tools are available from the main screen so you can work with your data graphically! All of the tabular information can be found in a properties dialog on the main screen which allows users to edit and update quickly while working graphically. Users have the ability to easily reorder stops on runs, access the timeline editor to adjust stop times, and display relevant stop and run data for selected students on the map with the simple click of a button.

eSQL search capabilities are tailored to reflect your daily tasks. “Quick Load” searches are based on the things you do on a daily basis, such as assigning students to stops. You can efficiently and quickly filter, load, and display multiple data types based on schools and bell times such as unassigned student trips, new students, unmatched students, stops with zero loads, runs outside bell time windows, student trips on inactive stops, stops in hazards, and many more.

Google Maps can also be used with this version of eSQL! You have the option to display common Google views; road map, satellite, or hybrid views.

For optimization study purposes, the concept of “snapshots” have been introduced which allows you to easily create a complete copy of your current transportation database from within the system and switch to that data without leaving the system. Working with the “snapshot” data allows you to make experimental changes within the “snapshots” of your data without affecting your production data. The “snapshots” have access to all reporting capabilities, and you can easily switch between your snapshot data and your live data all without having to install and support a complete simulation data area. (Advanced)

Resequencing run functionality has been improved, and is now more robust to better meet your needs. (eSQL and Advanced)

We have incorporated an improved algorithm which is a unified calculation method for optimization and daily use of EDULOG to produce more consistent solutions. It is used throughout the routing system for areas such as drive path and walk path school distances, driver directions, optimization, and more. (eSQL and Advanced)

Route Sheet Editor has been enhanced to display information about the data that you are working with while editing your route, such as selected stop and run information. (eSQL)

## Students

We improved the concept and functionality of student needs by further defining student needs into two specific types: Transportation and Other. You can define up to ten transportation needs which are used to indicate specific equipment or bus requirements. The Other Needs feature is new, and is used for needs that are unrelated to transportation, such as allergies, epinephrine auto-injector needs, or other medical conditions. You can define as many Other Needs as you require. (eSQL and Advanced)

## Vehicles

It is now easier to enter vehicle data and associated transportation needs information within the system, and EDULOG has the ability to do feasibility checking on the transportation needs when assigning a student to a stop that is assigned to a vehicle.



## **Cost Calculation**

Cost Calculation is a powerful product that helps you determine the true costs of transporting your district's students, and can be purchased for use with this version of EDULOG.

## **Run Direction Word Processor**

The Run Direction Word Processor tool allows users to create customized driver directions for your drivers, and can be purchased for use with this version of EDULOG.

## **Archive Reports**

Archive Reports allow you to store historical data and perform historical reporting on your EDULOG data, and can be purchased for use with this version of EDULOG.

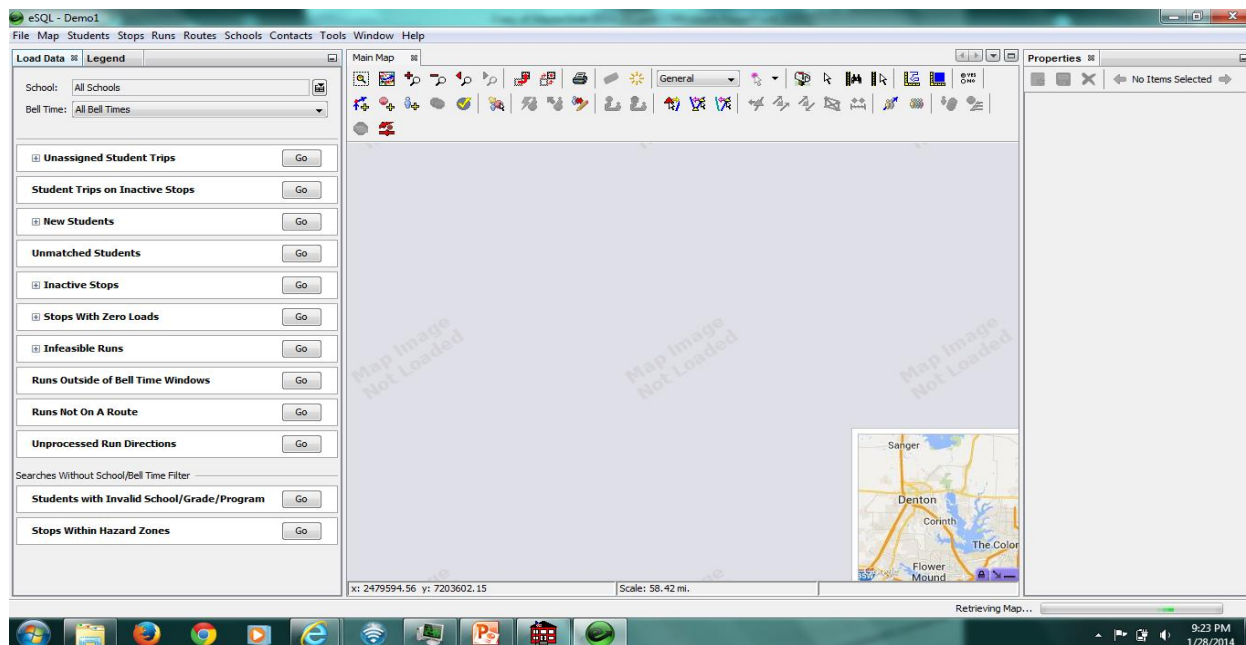
## **SCREEN CAPTURE EXAMPLES**

**ON THE FOLLOWING PAGES YOU WILL FIND SCREEN CAPTURES HIGHLIGHTING SOME OF THE NEW CAPABILITIES OF EDULOG SQL WITH ONE SCREEN ROUTING.**

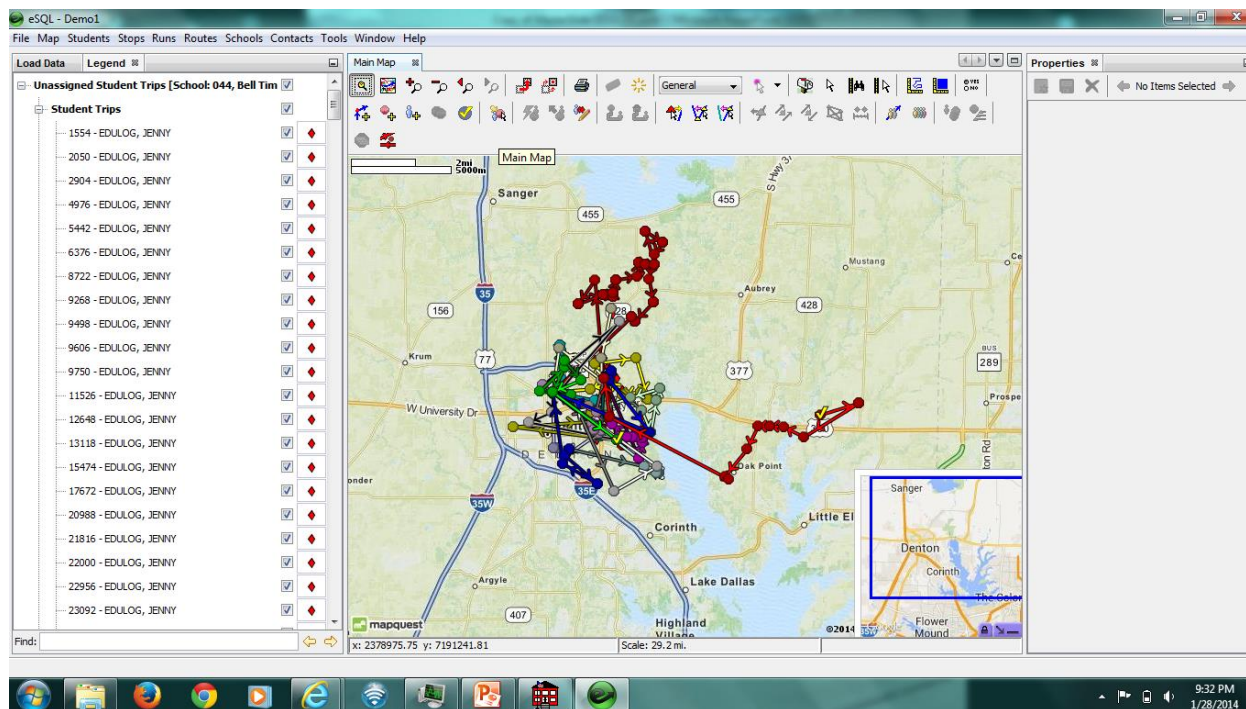




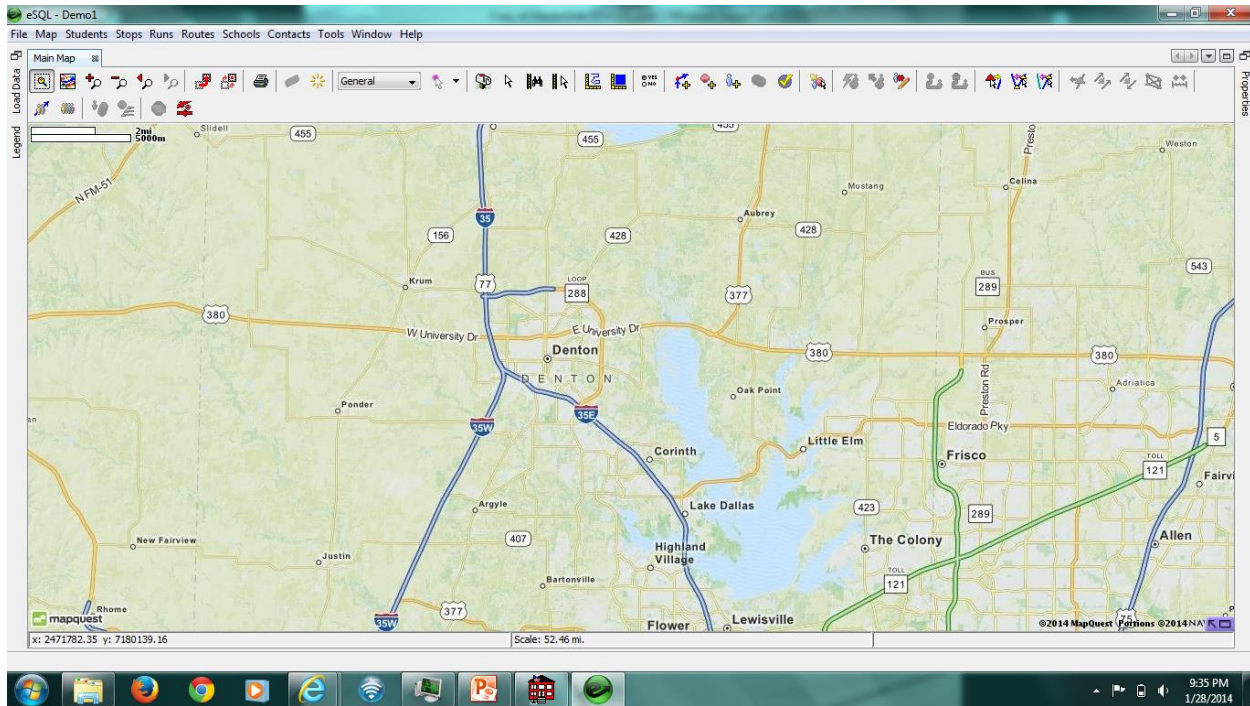
## A new layout with quick access to key information.



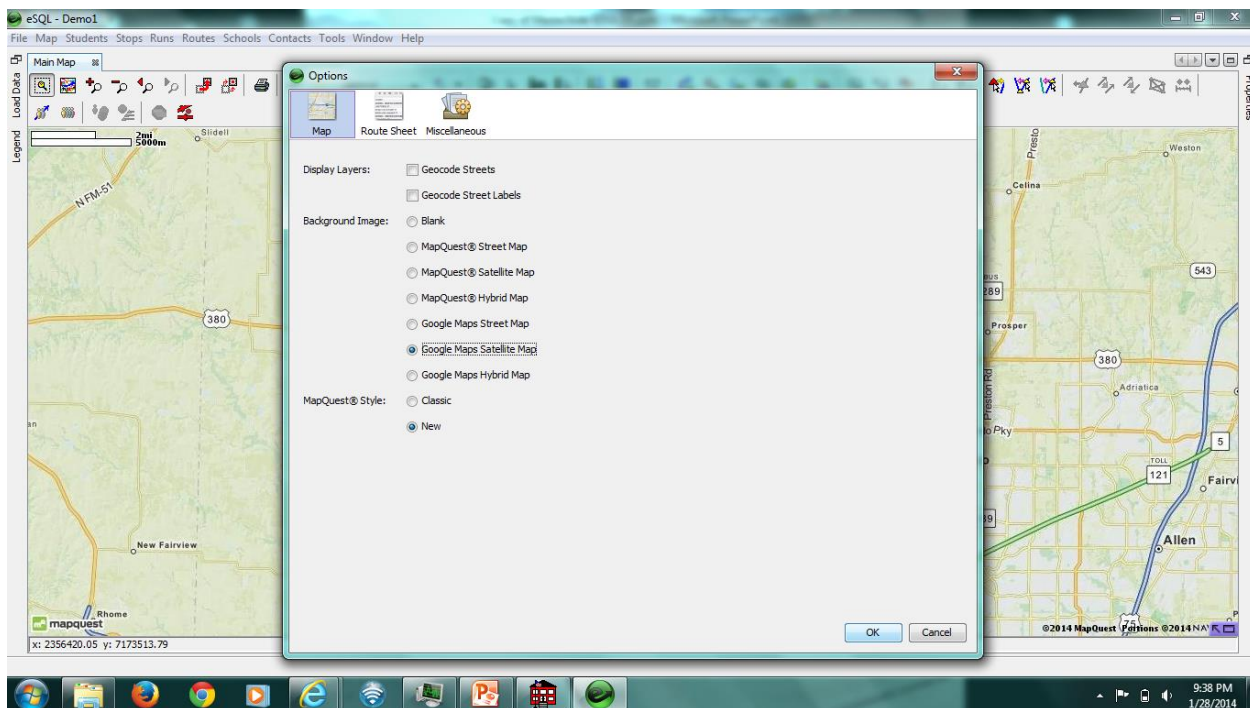
## Easy access to student, stop, and run information.



## Google map overlay for quick and comprehensive geographic orientation.

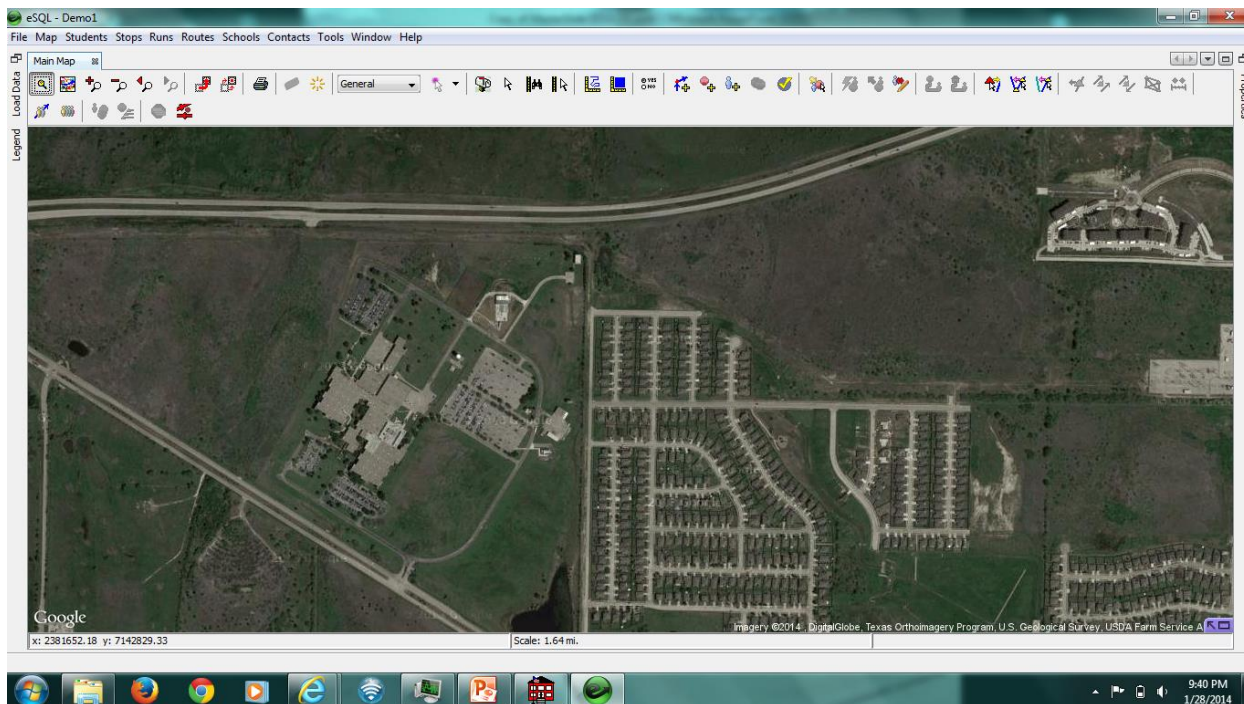


## Map views to meet any preference or condition.

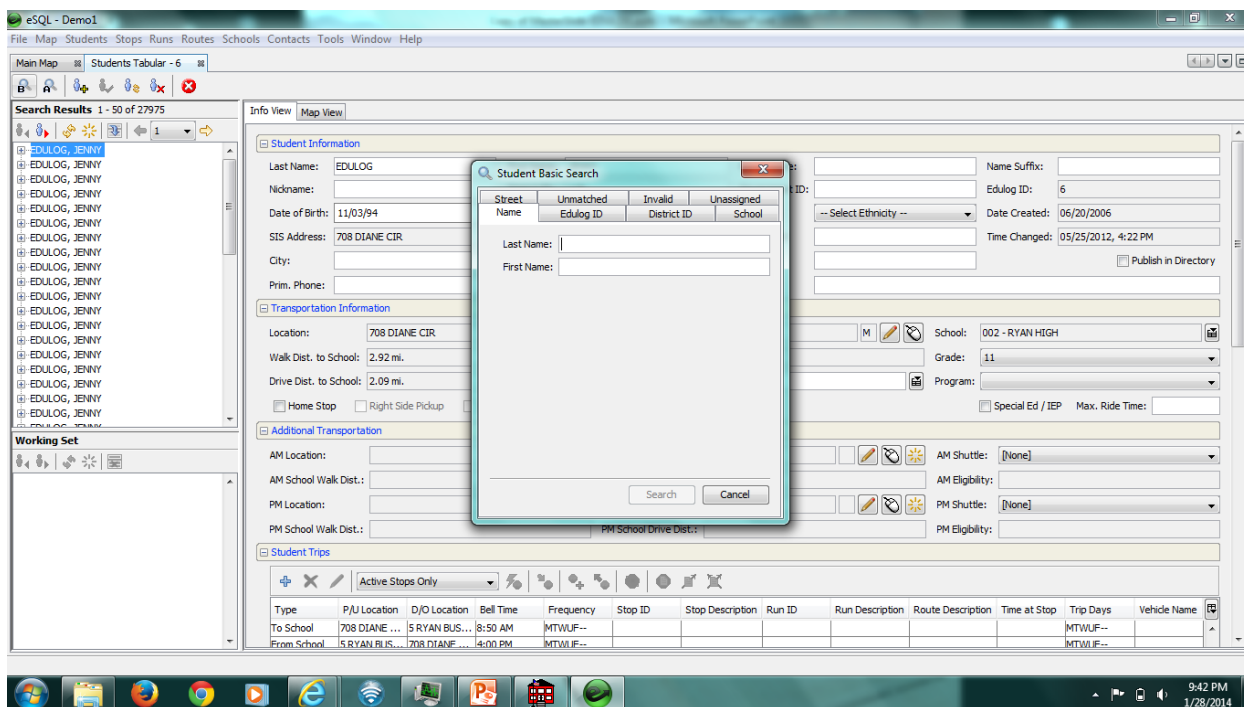




## Satellite and orthophotographic views from a variety of sources.



## New search options—including by student's first name.



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## Quick “hover over” functionality.

**Search Results** 20101 - 20150 of 27975

- (1) EDULOG, JOHNNY
- (2) EDULOG, JOHNNY
- (3) EDULOG, JOHNNY
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- (5) EDULOG, JOHNNY
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**Working Set**

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- (100) EDULOG, JOHNNY

**Student Information**

Last Name: EDULOG First Name: JOHNNY Middle Name: Name Suffix: Edulog ID: 15475  
 Nickname: District ID: 31054 Government ID: Date Created: 08/09/2005  
 Date of Birth: 08/01/97 Gender: Ethnicity: -- Select Ethnicity -- Time Changed: 05/25/2012, 4:30 PM  
 SIS Address: 9511 CARSON DR Apartment: Publish in Directory  
 City: State: Zip: Prim. Phone: Sec. Phone: E-Mail:

**Transportation Information**

Location: 9511 CARSON DR M School: 048 - HARPOOL MIDDLE (HMS)  
 Walk Dist. to School: 2.93 mi. Eligibility: 0 - Eligible Grade: 08  
 Drive Dist. to School: 2.99 mi. User Eligibility: 13 - No Busing Zone Program:  
☐ Home Stop ☐ Right Side Pickup ☐ Available ☐ Special Ed / IEP Max. Ride Time:

**Additional Transportation**

AM Location: AM Shuttle: [None]  
 AM School Walk Dist.: AM School Drive Dist.: AM Eligibility:  
 PM Location: PM Shuttle: [None]  
 PM School Walk Dist.: PM School Drive Dist.: PM Eligibility:

**Student Trips**

Active Stops Only

Type	P/U Location	D/O Location	Bell Time	Frequency	Stop ID	Stop Description	Run ID	Run Description	Route Description	Time at Stop	Trip Days	Vehicle Name
To School	9511 CARSON DR	9501 HARPOOL MIDDLE	8:20 AM	MTWTF--	048.052	LOOKRIDGE RD...	048.001	AM RTE 131 - ...		8:00 AM	MTWTF--	263337
From School	9501 HARPOOL MIDDLE	9511 CARSON DR	3:20 PM	MTWTF--	048.052	LOOKRIDGE RD...	048.101	PM RTE 131 - ...		3:52 PM	MTWTF--	263337

## Quicker access to student transportation needs and requirements.

**Transportation Needs**

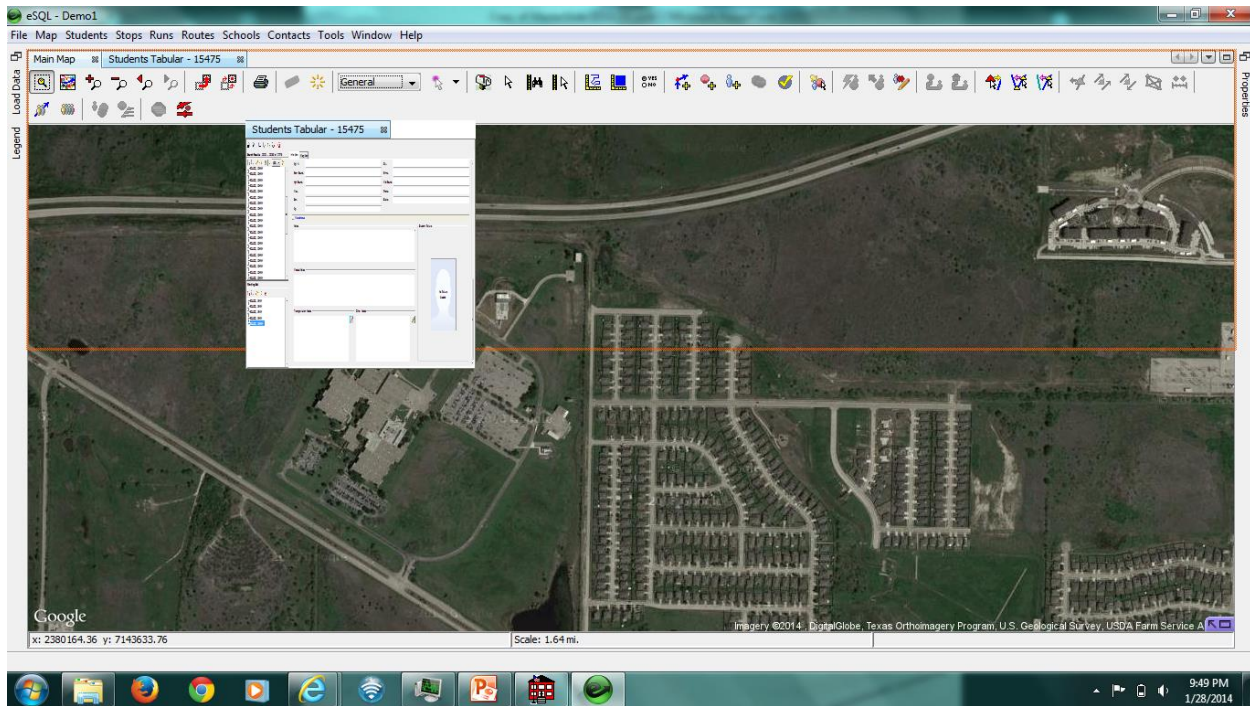
Select Transportation Needs:

- ☐ 1 - A/C
- ☐ 2 - Wheelchair
- ☐ 3 - Safety Vest
- ☐ 4 - Oxygen
- ☐ 5 - Car Seat
- ☐ 6 - Attendant
- ☐ 7 - Seat Belt
- ☐ 8 - Brace
- ☐ 9 - Walker
- ☐ 10 - Belt Lock
- ☐ 11 - Q-Vest
- ☐ 12 - Bus Aide
- ☐ 13 - Safety Caps
- ☐ 14 - Safety Vest As Needed
- ☐ 15 - Seat Belt As Needed
- ☐ 16 - User defined special need 16

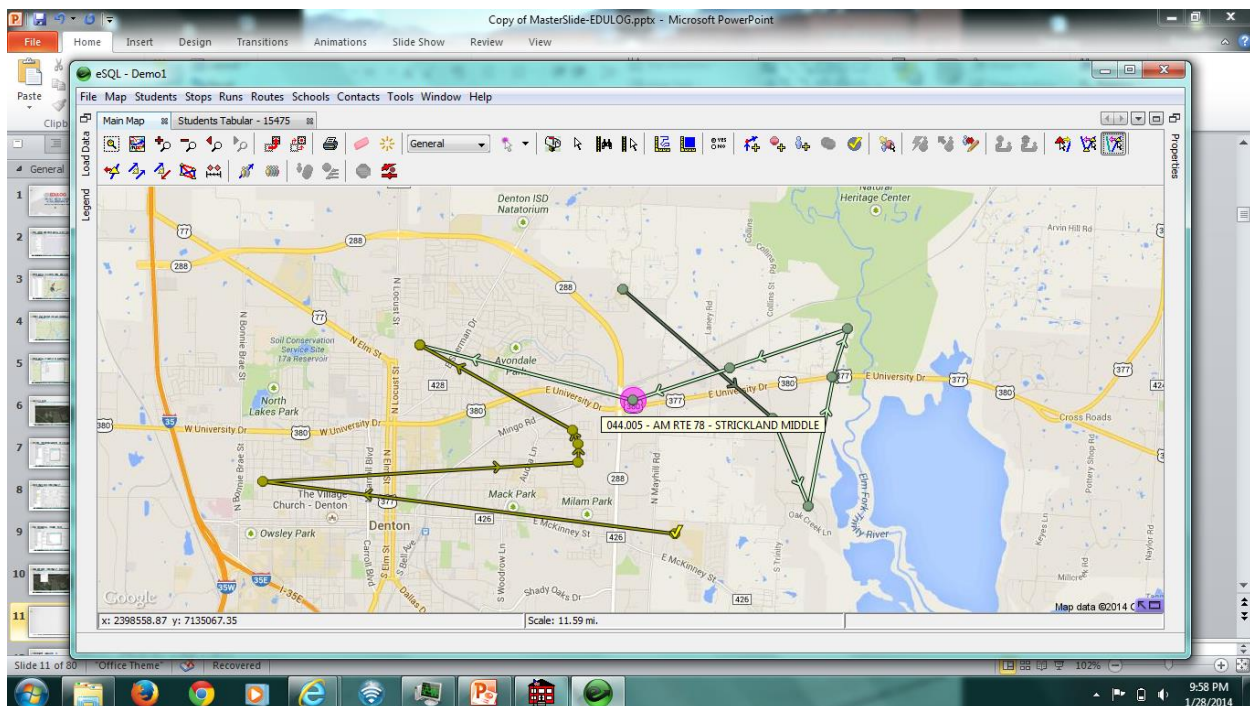
OK Cancel



## Drag and drop functionality with multiple screens.

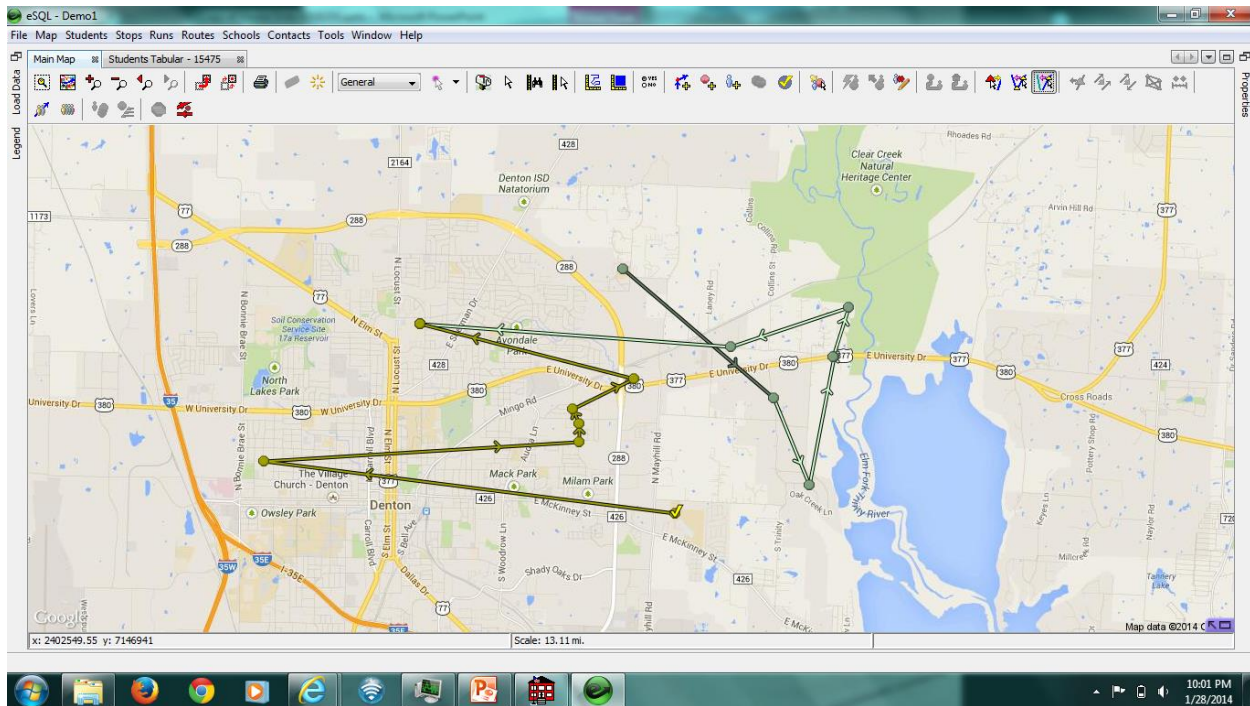


## Change stops from one run to another . . .

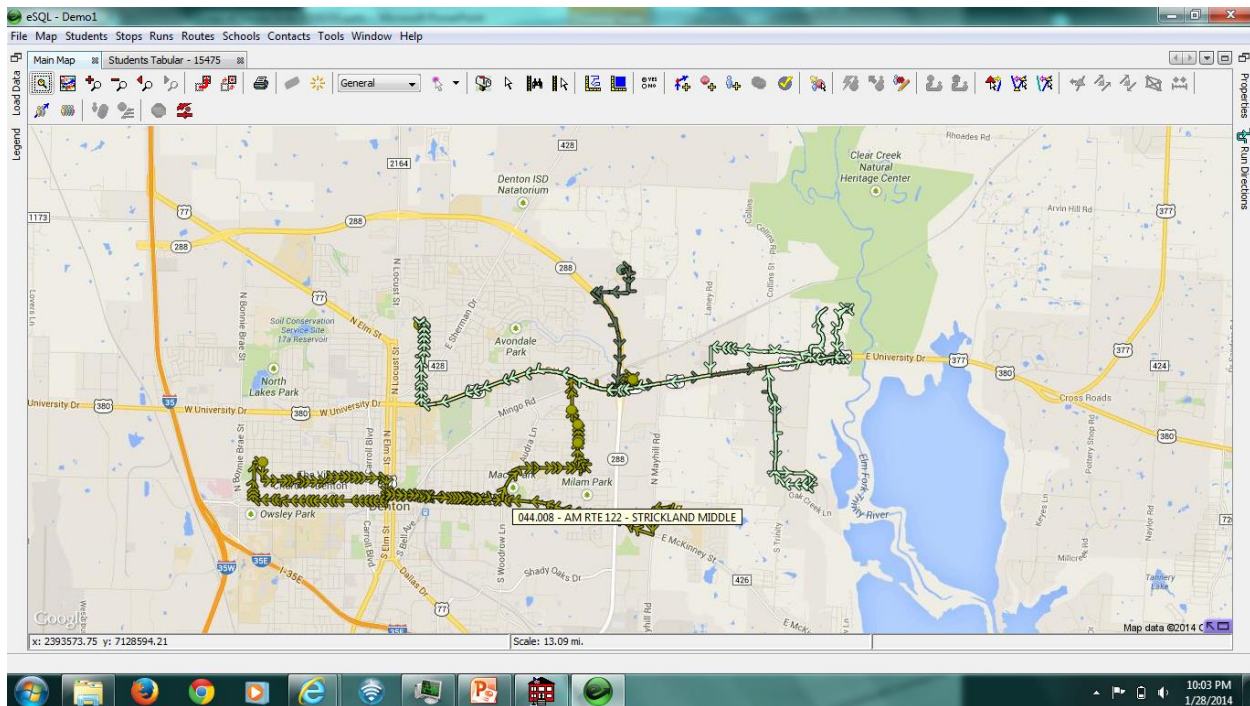




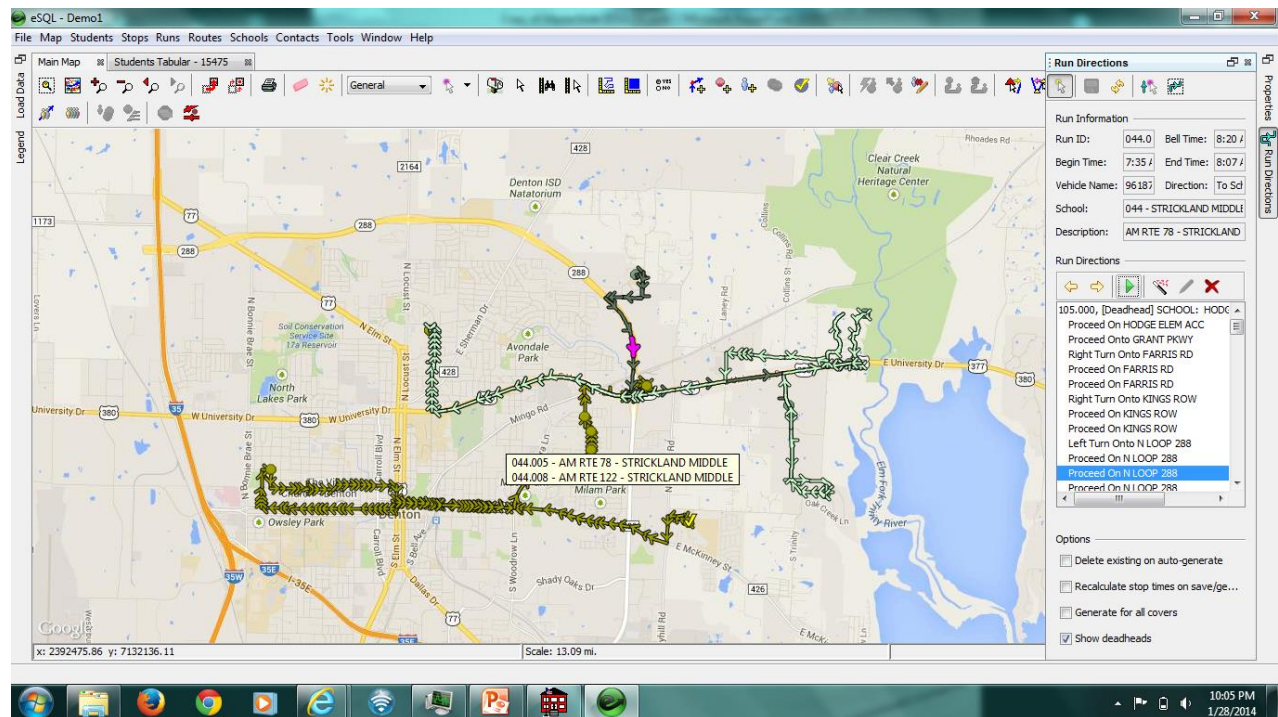
With just a click of a button on the main map . . .



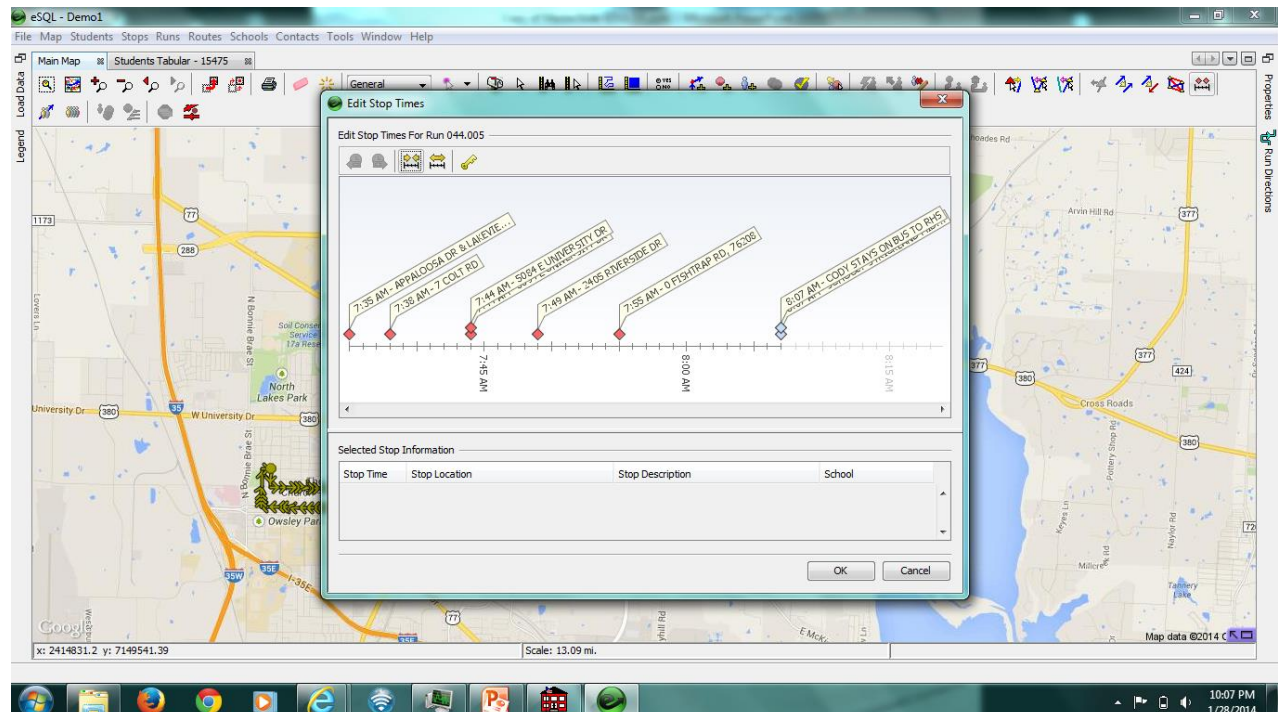
While at the same time processing the changed run directions.



## Edit run directions from the main map.



## Quickly and easily edit stop times from the main map.







# EDULOG Routing & Planning



## Let's be Honest

Transportation departments are being asked to do more with less, which is why EDULOG's Routing and Planning software is designed to help you save money, increase safety, and make life easier for you and your staff.



## Integration, Automation and Simplification

EDULOG's routing and Planning software integrates with your student information system, automatically pulling and populating your transportation rosters, eligibility, and more based on your district's daily records.



## Don't Worry: We Did the Math

EDULOG's Routing and Planning software automatically takes your planned stops and finds the best possible runs and routes so your school district reduces mileage, idling and overall trip times.



## Make it Better, Faster, Stronger

Our intuitive interface lets you work graphically on customizable maps or with a spreadsheet-style interface to make sure your workflow is comfortable and familiar.

### Planning is the First Step Towards Savings

EDULOG offers a complete suite of student transportation products that make routing easy. Our Routing and Planning integrates with our web products, GPS software, Student Tracking, and more.



Call today to learn more about EDULOG Routing & Planning and how it can make your job easier.

 866.340.3896 | [www.edulog.com](http://www.edulog.com)



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## **eEDULOG**eSQL-One Screen Routing

### **We're taking routing efficiency to a whole new level**

Modern pupil transportation departments need modern planning software. With an updated, streamlined user interface, EDULOG eSQL software makes your daily tasks easier and faster than ever. Plus, our optimization capabilities are more accurate than ever, with an improved proprietary routing algorithm that takes advantage of today's enhanced hardware.

Incredibly  
**Powerful**  
Stunningly  
**Simple**

### **What if...**

Your everyday  
routing tasks could  
be done faster  
than ever?



### **What if...**

Route optimization  
could create  
better insights for  
your daily plans?

### **What if...**

You could see  
routing and  
planning in a  
whole new way?



**Contact EDULOG  
to learn more and  
receive a FREE demo!**

**866.340.3896  
[www.edulog.com/eSQL](http://www.edulog.com/eSQL)**



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*Innovative Technology. Demonstrated Savings. Proven Success.*





## eEDULOG eSQL-One Screen Routing



### Drag-and-drop makes assignments simple

Easily select and assign multiple students to stops, quickly assign stops to runs, and do it all right from your map. Performing your most common routing tasks is easy as counting to "One."



### See your routing in a whole new way

We've partnered with mapping leaders like Google and MapQuest to bring you familiar viewing options that make using our school routing and planning software even easier.



### More than just a pretty face

EDULOG has upgraded our routing algorithm so that school districts can plan better, more efficient routes. Better routing means more savings can be kept in your district's classrooms.



### We've listened to you

Providing the best experience for our users has always been one of EDULOG's core goals. This revamp of our flagship product incorporates feedback directly from users. The result is the most modern interface available.

Have you considered EDULOG's Routing and Planning solutions for your school district in the past? Now is the perfect time to take another look. Schedule a demo today and find out why EDULOG's new eSQL software is right for your district.



Find out more about EDULOG's new "One Screen Routing."  
Visit [EDULOG.com/eSQL](http://EDULOG.com/eSQL) today to schedule a FREE demo.

eEDULOG | 866.340.3896 | [www.edulog.com](http://www.edulog.com)



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## THE EDULOG ROUTING AND SCHEDULING SYSTEM

Since its formation, EDULOG has specialized in developing software systems for school bus routing and geographic planning. Through the years it has refined its programs to satisfy requests from clients and meet new needs. The experience accumulated through the implementation of the software in school districts of varied characteristics allows EDULOG to provide a system with great versatility and flexibility. EDULOG's software can be adapted to rural, suburban, or urban areas and to school districts with complete or skeletal geocodes.

EDULOG's transportation/planning software is totally user-oriented. Fully menu-driven and self-prompting, the programs require no prior knowledge or use of computers. Such industry-standard features as windowing, pop-up menus, use of various colors and help messages, etc., are prevalent throughout the system to guide a user that may have little or no knowledge of the system. These features promote the system's quick and easy on-line review/update capability. The system's average response time (excluding sorting of reports or multiple field inquiries) is less than two seconds. Major data revisions—such as changing school boundary zones and transferring corresponding students to new zones—or any other major data addition or editing can be done in less than five minutes.

As a graphics-based system, EDULOG provides color screen displays and hard-copy plotting/printing capabilities on demand. A zoom feature is inherent in all graphic displays. Additionally, all information is accessible in a one-monitor-per-workstation environment.

The following section, "Software Components," highlights some of the more complex planning management issues. The various software features will accurately reflect current and future transportation policies with capabilities to update or simulate any new parameters. These policies can be established by grade levels or programs.

## SOFTWARE COMPONENTS

### *Student Database Management*

The core of the EDULOG system is the student database management module, used by both the transportation and planning staffs. The EDULOG system uses the same student database for transportation and boundary planning functions—unlike many competing systems, there is no need to create and maintain separate databases. Partial updates to change student information and add or delete students are always possible with the EDULOG student database.

The initial database is created by downloading the relevant demographic information from the master student database. The EDULOG system allows the selection of a variety of data fields to be stored in the system's database. Once the key data fields are identified by the organization's staff working with the EDULOG project team, a procedure will be created and verified to automate the data loading tasks in the future. The system implementation team will design the procedure to load the data after it is downloaded to the system's disk drive.

The data entry tasks will be completed using this module. Some highlights of the system's data entry capabilities include:

Batch and interactive data entry

- Extensive front-end editing functions to identify incorrect addresses, etc.
- Automatic assignment of school, bus stop, route, and other relevant information based on a student's address and grade





- Selective batch updates (for example, move all students up one grade)
- Immediate graphic location of student based on address
- Comprehensive report generation and data query
- selected, partial updates to student records without having to replace the entire database

One important distinction of the EDULOG system with major consequences for transportation eligibility determination, and stop assignment is that every student in the database has a unique record, and can easily be given an assignment different from every other student at the same address. The EDULOG system does not force every student living on the same address segment into a “rider group” for the purposes of determining transportation eligibility or stop assignment.

### Address Lookup Functions

Impressively quick and accurate random address lookup is a distinctive feature of the EDULOG system. Because the EDULOG map display allows for unlimited zooming and panning using the mouse, operators can move efficiently to the area and detail wanted. Any address can quickly be identified on the map by entering the information through the keyboard. Conversely, placing the cursor on the map and clicking the mouse will display the correct address in the text window. Features of the EDULOG address lookup facilities include:

When the address and street name is entered, the cursor can automatically locate and highlight the actual location on the map display.

- Given a stated address, the programs display by name the exact attendance zone or zones containing the address.
- Graphic identification functions include the ability to identify via cursor placement a street segment’s name and address range on the right and left side of the street.
- Address identification functions include the ability to retrieve the exact street address number and street name for any cursor placement along the road network.
- Student address locations are displayed on the correct side of the street.

## GEOCODING SOFTWARE

With EDULOG’s geocoding software, the school districts will have full control of its geographic data. New subdivisions, road construction and road changes can be added at any time to ensure accurate bus runs and schedules. Through interactive graphics, the user can add streets and cul-de-sacs as they come into use. Address matching of students who move into new subdivisions can be as accurate and current as possible. Because the graphics tools and programs are designed for ease-of-use, this specialized and complex task can now be accomplished safely and easily by current transportation/planning personnel.

### Street Attribute Coding

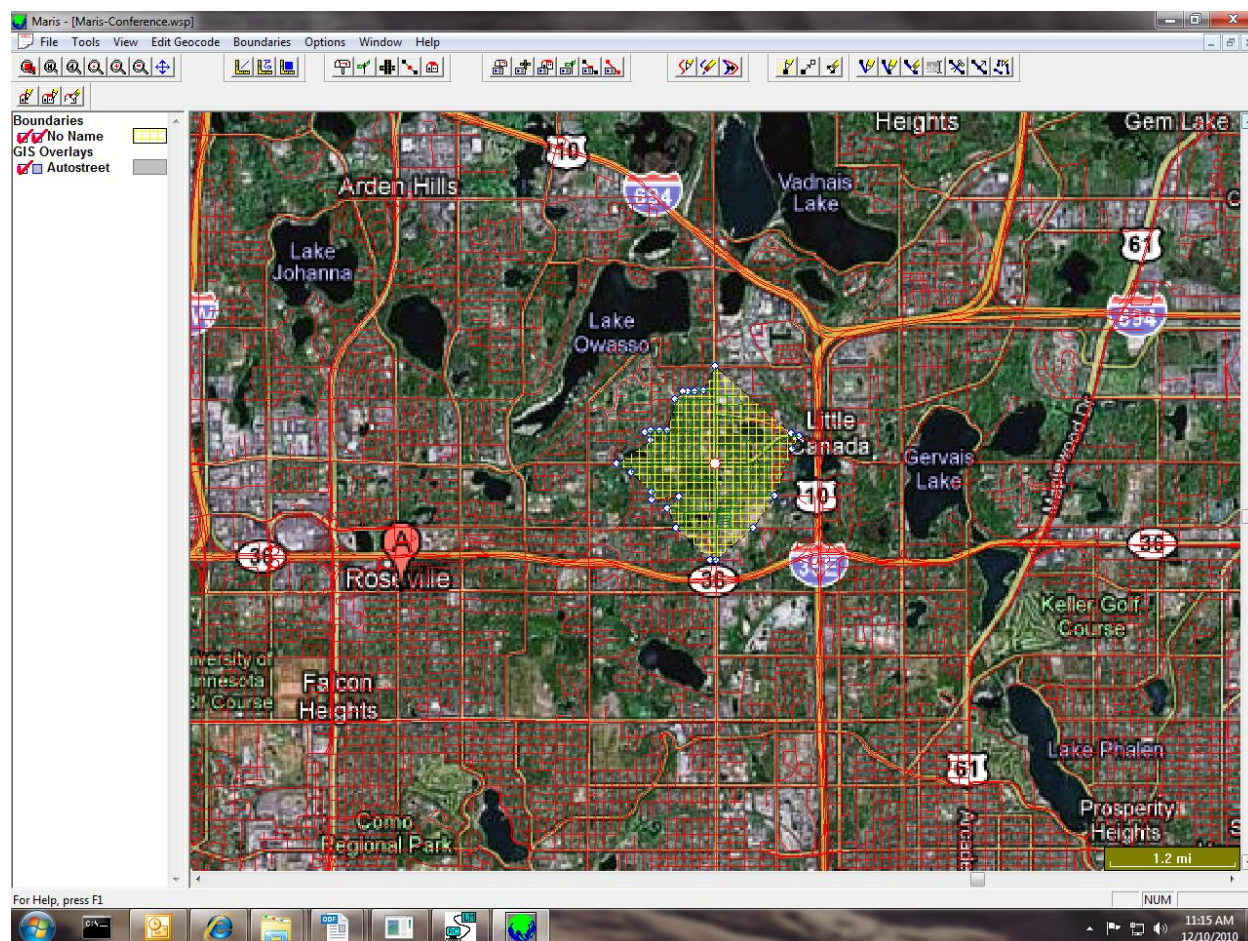
To create a geocode file that can support effective bus routes and boundary planning functions, additional information, called attributes, is included:

street names

- separate address ranges for both sides of the street
- walk path restrictions
- restricted streets or areas for bus travel or student pedestrians (hazard conditions)
- one-way streets or any traveling restrictions by segment
- average travel speeds for each segment



- restricted turns (i.e., no left turn)
- transportation eligibility boundaries by grade level
- walk zones and school zone boundaries
- safety condition of a street by segment.



EDULOG's geocoding software includes a complete set of programs to effectively handle each of these data requirements. Depending on the type of data, entry is done with a digitizer, mouse, keyboard, or special search programs. Verification is performed by plotting special maps highlighting the particular information to be validated. For example, the following can be produced whenever needed: Speed maps for each velocity which make it easy to check linking continuity; plots showing one-way streets; or plots showing streets considered hazardous for student crossing.

### Geographic Data Maintenance

This activity is the fine-tuning part of the complete geocoding process. It corresponds to the on-going task of maintaining the geocode. These files remain dynamic and this feature is essential in guaranteeing that the map properly supports the transportation and geographic planning system.

One powerful advantage of the EDULOG geocoding system is the ability to fine tune the geocoding without altering the underlying map file. Using this feature it is possible to remove from stop and routing consideration: streets under repair, in construction zones, or unsafe for any reason; delete turns or entire streets because of noise, safety, or other consideration, etc. These changes can be made daily without risk of deleting addresses or inadvertently altering the actual street network.

The EDULOG system includes a complete set of menu-driven, user-friendly programs for maintaining the geocode. All the following information can be modified:

street names and type (color coded)

- address ranges along streets (hundred block designations)
- one-way designation on segments
- modification for restricted turns
- bus traveling speed
- hazard conditions of segments
- availability of segment for student walking
- transportation eligibility boundaries by grade level
- walk zones and school zone boundaries
- total travel time
- total length of segment

These are the key tools used to ensure that the geocode is kept up-to-date to match the actual transportation environment. Depending on the needs of a particular client, the transportation or planning staff can use this module to develop the entire geocode and/or to use it regularly to update the existing file.

## PUPIL TRANSPORTATION SYSTEM

The purpose of the EDULOG routing and scheduling system is to give school organizations effective management tools to monitor the efficiency of bus routes and schedules and perform any required routing and scheduling tasks to maintain the highest level of efficiency.

The programs are on-line, interactive, and easy-to-use; no previous experience with computer applications or data processing is required. The screen displays are uncluttered and easy to read. Available functions are displayed on the video screen and correspond to special keys on the keyboard. Functions can be selected by simply pressing a button on the mouse or keyboard. The menu approach used by all the programs ensures that the user can go easily from one screen to the next without referring to a directory or manual. The system helps the transportation staff perform the following tasks:

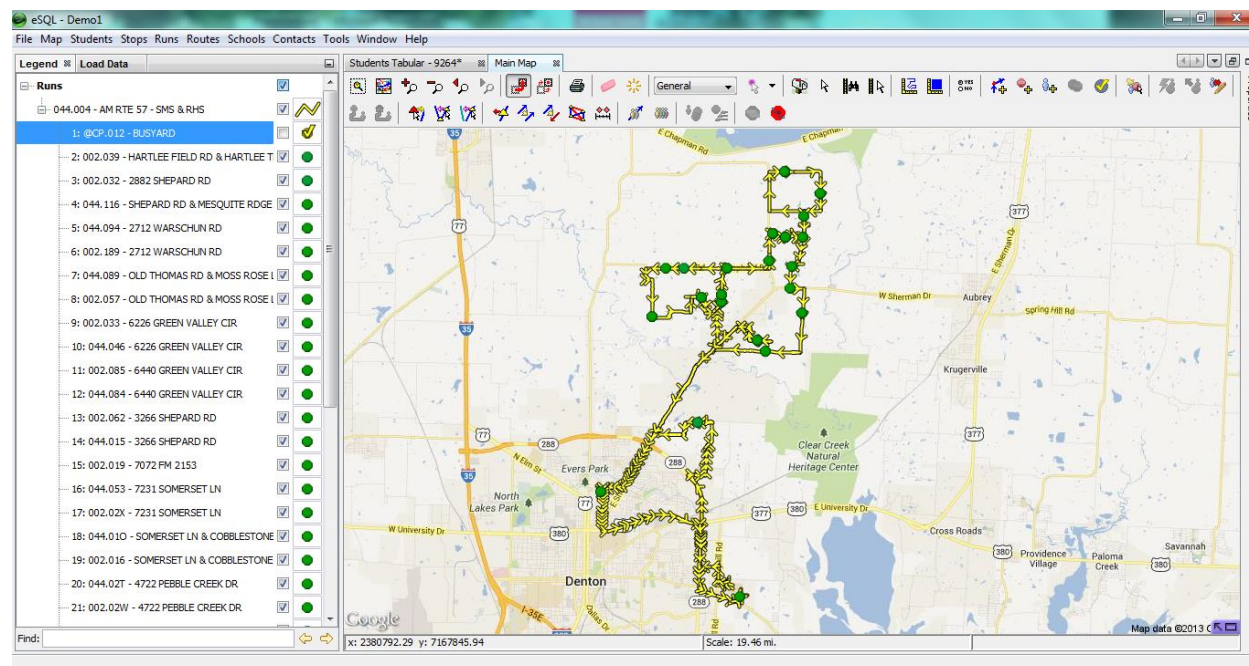
### Student Functions

- A. Adding new students to the system. A new schedule can be determined automatically if there is a current bus stop within the user-defined walking distance;
- B. Changing the data of a currently transported student (address, grade, school, etc.). All subsequent re-scheduling can be performed automatically;
- C. Deleting a student from the system, and;
- D. Inspecting the current data and schedule of an individual student or a group of students, which may be specified by the user, so that only students meeting a user-defined set of criteria will be displayed and reported. This function has applications for many kinds of reporting for client use.





The following screen display shows student bus stop locations and the start and end point of the bus run.



## Bus Stop Functions

- Adding a bus stop. The program will suggest the best location to insert the new bus stop on a run, and let the user simulate several alternatives before making the final decision;
- Reassigning a bus stop from its current run (the program will find the best alternative for reassignment);
- Deleting a bus stop from a run, and;
- Relocating a bus stop from its current location.

## Bus Run Functions

- Adding a bus run
- Changing a bus run
- Deleting a bus run
- Changing the pick-up or drop-off times at bus stops
- Changing travel times between two given stops on a run
- Resequencing bus stops on a run
- Automatically building new runs

## Bus Route Functions

- A. Adding a bus
- B. Changing the combination of runs served by a bus
- C. Adjusting arrival and departure times for a bus
- D. Deleting a bus
- E. Controlling the deadhead time between runs
- F. Modifying assignment of bus routes to buses

## System Maintenance Functions

In addition to the operational functions described above, the system also allows the client to perform software maintenance to incorporate new requirements or changes in its policies. Such changes are reflected in the client's transportation scheme. The client will at times decide to engage in some of these tasks:

Updating students, addresses, and policies;

- Updating the geocode data;
- Changing transportation eligibility criteria;
- Changing school boundaries;
- Promoting students to their new grades at year end, and;
- Reassigning students to appropriate bus stops at year end.

## TRANSPORTATION ELIGIBILITY DETERMINATION

EDULOG has excelled in the area of eligibility determination by developing an extremely versatile and flexible approach to modeling school districts' varied transportation eligibility policies. Eligibility is processed either on-line during the update of student data or in a batch mode to process the entire student population.

All school districts have eligibility policies based on maximum walking distance to schools and all have innumerable exceptions to those policies because of hazard conditions, past practices, program exceptions and "grandfather" clauses. The EDULOG system allows users to automatically determine student eligibility conditions accurately for distance criteria and also for other special cases. EDULOG's approach is versatile enough to handle practically all possible eligibility criteria such as walking distance, hazard conditions, programs, and grade levels. Eligible students are automatically assigned to the closest stop along safe walking pathways, with manual override always available during all the steps of the assignment process. Eligibility processing is flexible enough to allow client personnel to modify requirements to reflect changing organization policies.

Eligibility for transportation is determined by the system according to current client transportation policies such as walking distance, hazard conditions, program and grade levels, travel times, bus load capacity, and safety constraints. Accurate computation of travel distances and times along the actual street network are determined without approximations such as "crow flight" or rectangular distances.

The software also allows the user to interactively override the system-determined eligibility for any student. Also, whenever a student's address is changed, or a student is added in the interactive program, the system automatically computes and displays the eligibility determination. The user may then approve or correct the presented data.



Reports are available to generate any eligibility information. These are part of the report-writer of the student census system so that the user can have access to the full power of generating reports of any desired format. Exception reports are also supported, such as listings of students who are eligible but not transported and/or students who are transported but not eligible.

## STOP ASSIGNMENT

Once eligibility determination is completed for all students, the next step is to automatically assign them to the closest bus stop. To determine the closest stop to a student's home, all distances are computed along actual street paths while considering all client-defined safety conditions. For example, if a street is declared to be hazardous for students to cross, bus stops need to exist on both sides of the street and students are assigned correctly to their bus stops.

Another powerful feature of EDULOG's stop assignment program automatically warns the user when an attempt is made to assign a stop to a hazardous street. When such an attempt is made, the system automatically zooms in on the map and shows possible safe assignments with their addresses. After clicking on a safe location with the mouse, the new stop is automatically reassigned.

EDULOG's software also offers the added capability of displaying five alternative stops for student assignment ranked by walking distance from the student's home. This feature offers greater versatility and stop load balancing. Additionally, manual override is allowed at all phases of the stop assignment process.

The EDULOG system includes reporting capabilities that can generate required reports plus many customized reports. For example, bus stops can be generated by school, by grade level, sorted by description, ID number or node numbers, or the associated student list by stop.

## ROUTE DRIVING DIRECTIONS

This feature allows the system to automatically generate driving directions, such as left- and right-turn instructions with actual street names and times at each stop, to be included in the bus schedules given to drivers. As with all of EDULOG's software, this technical sophistication is accompanied by extreme ease-of-use for non-technical users.

Although the basic system offers all necessary standard reports with pick-up/drop-off points for students and times per route, this additional capability automatically calculates and defines travel directions for bus drivers. Automatic instructions include: directions to proceed along street segments; stop at a corner; pick up students listed by name; and where to make right and left turns. Student destinations, actual street names, and estimated time at stops and the final destination point are also provided in the automatic route driving directions.

## MULTI-BUS TRANSFERS

The EDULOG transfer system allows system users to create a special type of bus stop that can transfer students from one bus run to another bus run. Using the transfer system, the automatic bus run functions will pick up students and give the user the option of either taking students directly to school (or home) or taking them to a transfer stop location. The EDULOG transfer system is fully integrated with the text and graphic bus stop and bus run programs and the graphic student display program. As many as 99 transfer stop locations can be created for each school in the district. The EDULOG transfer system is fully controllable by grade level—users can





set the program so that kindergarten students never transfer between buses and if any transfers are needed, routes will be created so that high school students are transferred first.

## HAZARD ZONE AND SEXUAL PREDATOR DISPLAY SOFTWARE

The purpose of the EDULOG hazard zones is to allow users the ability to visually track locations that may be hazardous to students and give warnings to system operators when creating or relocating a stop in the user-defined hazard zones. Examples of hazard zones may be an area around the home of sexual predator, a drug house, a mining location, a refinery, a bar, or an adult bookstore. The EDULOG system will allow stops to be created or relocated within the hazard distance, but the system will automatically warn the operator that stops may exist within the hazard. An associated report can be used which lists which stops are located within a hazard zone. Hazard zones are based on a user-defined rectangular distance from a given address.

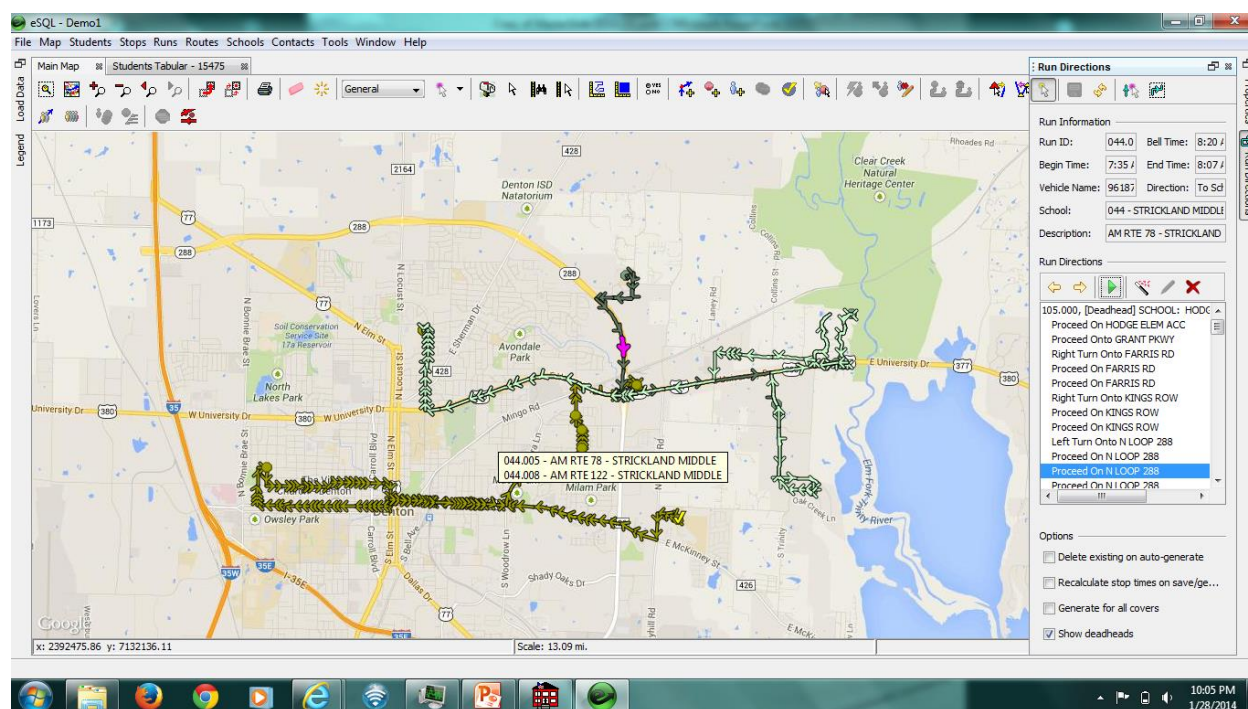
## ATTENDANCE BOUNDARY DISPLAY SOFTWARE

The attendance boundary display module can be used as a standalone system placed in every school to answer inquiries about school attendance zones and bus stop assignments. By typing in an address, the program will display the residence location on the digital map. Entering the grade (or special program) will show on the display screen the nearest applicable school, along with the distance from the school to the residence, the school phone number, bell times, principal's name, etc. In addition, the program can be used to check current enrollment of the selected school, grade, and program for space availability. The nearest bus stops to the student's residence are also displayed, with addresses and pickup/dropoff times.

## EDULOGWEB INTERFACE

Inspired by numerous client suggestions and comments, EDULOG's *EDULOGWeb* Interface introduces an easy-to-use method for stop, run, and route editing in just one Windows screen. *EDULOGWeb* Interface displays in both tabular and graphic form a current EDULOG system route with all associated runs, addresses, student headcounts, and times, and schools. Adding a run is as simple as filling in a Microsoft Excel cell: just put the cursor in the list, type in an address, and the system automatically performs an address match and places that address on the run. All associated information is then transparently updated—without ever having to leave the *EDULOGWeb* Interface display! The same process is used to assign a new student to a run or to change the rider load at an existing stop.





And for those who like to work with the run displayed on the map, adding a stop is as simple as clicking on any location and then dragging the run to that stop. Address matching, run sequencing, time and distance computation is all done automatically. And to make things even easier, *EDULOGWeb* Interface automatically creates run directions based on your changes. You're in charge all the way, and there's no need to toggle between screens or remember an exact sequence of events—thus making *EDULOGWeb* Interface ideal for new system operators or occasional users.

Because of the intuitive design of the interface and the powerful background processing that happens behind the screen, *EDULOGWeb* Interface can increase efficiency and productivity with very little effort on your part.

## **SPECIAL NEEDS TRANSPORTATION SOFTWARE**

Special needs transportation is an especially demanding responsibility for school transportation staff, and is generally run more or less independently from the regular transportation functions because most special needs students require special buses, on bus aides, and individualized door-to-door service. The task of managing special needs transportation is made even more difficult by the large number of extensive changes made daily.

Many special needs features are included with EDULOG's standard transportation system. But for more demanding applications, EDULOG offers a special needs module which provides individualized attention by taking into account special ride time restrictions, medical equipment, aide assistance and door-to-door pick-up. The EDULOG special needs module is distinctive in that it can be integrated with the regular transportation system or be used as a separate transportation application—many of our clients have found that it is most efficient and conforms best to current procedures to operate special needs routing separately. With the EDULOG system, the school district has that choice.

In the EDULOG system, special needs routes may serve two or more schools, with student load fluctuations from stop to stop. As changes are made in the routes, the program ensures that the vehicle is still capable of delivering the students within school time limits and that the riding time does not exceed the limit for any student. If a route satisfies the distance, time, load, and student disability requirements, but does not serve the required school, the EDULOG special needs module will automatically attempt to add the school onto the route.

The EDULOG special needs modules are interactive, on-line software designed to provide managerial control over all aspects of special needs transportation. With management support as a goal, provisions are made under this system for:

- Door-to-door pickup as well as corner pickup
- Special seating requirements for individual vehicles or the entire fleet is stored, managed, and available for reporting
- Individual student needs and handicaps
- Maximum student riding time
- Special pickup or dropoff instructions
- Individualized school starting and ending times
- Manual override control of bus assignments
- Maintenance of feasible routes and schedules

This user-friendly system provides an effective way to store and retrieve all of the data pertaining to special needs students, special needs vehicles, and the routes and schedules used to transport students to schools and centers. For example, all of the following data can be stored for every student: maximum riding time, loading time, special seating requirements, required medication and/or supervision, and special pick-up and drop-off instructions.

The system also has remarkable versatility in controlling the daily management of re-routing and rescheduling necessitated by the constant number of changes made wherever special needs transportation is undertaken. The EDULOG system is designed to offer users the option of either having all or part of the rescheduling tasks performed automatically by the system, or of simply allowing the system to present all feasible rescheduling options and then making the final decisions independently of the computer. In either case, the system considers all of the possible student constraints (times, distances, handicaps and special needs, vehicles in service and their equipment, etc.) to ensure that the alternatives presented satisfy all specified parameters. The system verifies that all routes and schedules are acceptable with regard to student needs and vehicle specifications—whether bus assignments are entered manually or determined automatically by the system.

The following are the standard data elements for special need students (note the number of user-defined fields available to the district):

- Air Conditioning
- Wheelchair
- Harness
- Oxygen
- Car Seat - 1
- Attendant
- Car Seat - 2
- Bee Allergies
- Seasonal Allergies
- User defined special need 9
- User defined special need 10
- User defined special need 11



- User defined special need 12
- User defined special need 13
- User defined special need 14
- User defined special need 15

## TRANSPORTATION CAPABILITIES

EDULOG has worked with school transportation operations of sizes ranging from 25 to 500,000 students, in urban, suburban or rural areas, serving a variety of programs requiring specialized services such as special needs door-to-door, shuttles, and rural transfers.

We are confident that we have an excellent understanding of the needs and challenges of school bus routing management. Although each school district has its own special practices, there are many characteristics common to all pupil transportation operations, for example:

The cyclical nature of the routing and scheduling activities: year start-up, intensive student update requests at the beginning of the year, tapering off after a couple of months; routine adds, changes and deletes during the rest of the school year, year-end rollover, summer program transportation.

- The sensitivity of the system to the accuracy of student and geographic data: *each* student must be accurately located, evaluated for eligibility, assigned to a pick-up location, etc. Any mistake can lead to a parent or school complaint.
- The intricacies of transportation policies. A typical case is the determination of eligibility, which is usually a factor of distance from school, age of the student, disability condition, if any; safety conditions and/or any number of individual exceptions based on medical conditions, historical or political considerations, etc.
- The importance of the geographic data. Not only is an accurate network necessary to correctly compute travel times, distances, and directions, but also detailed information concerning traffic restrictions (one-way, speed limits, etc.) and hazard conditions are essential in deciding eligibility and assignment to the appropriate bus stop.
- The complexity of the routing activities themselves. The mathematical model corresponding to a standard problem of grouping (clustering) stops into routes subject to capacity and riding time constraints is a well-known unsolved problem in Operations Research for which no known solution method is available to guarantee the best (optimal) solution. Yet routes need to be produced that are the most efficient possible and which can also satisfy school district general policies.
- The immediacy of many of the demands on the transportation staff to respond to problems or to provide information. Most requests for action are made in a crisis mode and the response, either from a computer system or a manual approach, needs to be very quick.

These are some of the considerations that are essential to consider when designing an automated bus routing system. The EDULOG system has been tested through many challenging circumstances and requirements and has continuously evolved to include more capability and flexibility to address the very specific needs of its client market. The EDULOG system incorporates this experience by satisfying the following cardinal design considerations in functional requirements:

- high system performance in response time and computation capability—all data must be accessed in the shortest time so that user queries are addressed within an acceptable response level. The system must include extensive computational ability (mathematical algorithms) to help the user in all of the complex tasks of routing, scheduling and planning;
- extensive flexibility in design and features to accommodate current and also future needs.



and system requirements:

- ease of use of the programs, incorporating the newest technology and standards of user interface in order to allow non-technical users to derive the maximum use and benefits from the system;
- use of new software development and maintenance tools (DBMS, CASE) to simplify system maintenance requirements and enhance system flexibility at the level of file restructuring and customization;
- support of a variety of software/hardware platforms through the use of portable software codes.

In the area of functional requirements, EDULOG is confident that its current system can meet and exceed all of the LPSB's functional requirements. In particular, all the mathematical algorithms of automated routing, scheduling and stop selection and creation have been designed and continually enhanced with utmost attention given to performance and economy of computer memory resources.

## TRANSPORTATION OPTIMIZATION SOFTWARE

Optimization is a buzz word in the industry that has lost much of its original meaning. It is used by different vendors to mean different capabilities. Because optimization is extremely difficult to fully support, the differences in capabilities of various systems may be enormous, yet all vendors claim that they "have optimization." This is a particular area where the potential buyer has to be especially careful about vendors' claims. It is essential to evaluate the fundamental capabilities of a system, beyond the superficial level of cosmetics and flashy graphic displays. The task is not easy because most vendors will not reveal the internal working of their approaches, citing their proprietary nature. Fortunately, there are some ways for the discriminating buyer to evaluate these optimization systems:

- Does the system provide sufficient feasibility in defining the actual requirements of the client? For example, when a system builds bus runs from scratch, can it consider different size vehicles, can it limit bus runs by time and/or load? Can the user specify the desired number of vehicles to minimize the total fleet requirement?
- Another example is linking bus runs into full day schedules; can the system allow for individual arrival and departure time windows for each school and also each bus run? Can it consider road conditions or traffic congestion?
  - What is the track record of the vendor with its optimization software? Has the system proved itself in the claimed capabilities? When was it released? Is it used by other school organizations with good results? How long has the software actually been in use by school districts?

User references are important to prove claims about all components of the system, but are essential in optimization because so much is unavailable or inaccessible to the buyer for direct scrutiny because of the proprietary or complex mathematical nature of the software.

### Optimization Software

Optimization in a transportation system consists of developing the most efficient a system of bus routes and schedules as possible within the guidelines of existing or potential transportation policies.

This optimization activity includes several stages of graphic review to consider all of the street network data along with student needs and transportation policies. The objective is to develop a set of routes and schedules with the minimum fleet requirement and travel distance while effi-

The Des Moines Public School District has used EDULOG since 1991. In 1994 EDULOG was used to configure a three tier bell structure in a simulation area and then implemented those changes the following fall. We were able to reduce the fleet by almost 1/3. Since implementing EDULOG we estimate our total savings to be \$500,000. This past year, 2009-2010, the Des Moines Public School District saved \$50,000 by using EDULOG's run optimization module and we were able to eliminate two buses.

Sherry Bickett  
DMPS Transportation Route Manger





ciently serving all eligible students. It is another major achievement of EDULOG's research and development effort that enables us to create an extremely effective route building scheme. EDULOG has consistently been acknowledged to be the only company capable of providing true global optimization in all three of the major routing functions: stop location, run building, and route coupling.

The routing and scheduling optimization software is the core of the EDULOG system. These programs were first created more than ten years ago and have been continually modified, refined, and enhanced through the years. EDULOG's optimization system has evolved through several generations of development so that the present system for personal computers has all of the effectiveness, flexibility, and versatility of the version available for larger computers.

The EDULOG approach is based on a very solid mathematical background, and the mathematical algorithms have been enhanced for increased performance in response time and the quality of solutions produced. More importantly, the whole procedure of building bus routes has been modified to be extremely user-friendly, easy to train on and operate, and totally automatic. The latest improvement has been the integration of interactive graphics with the optimization software so that solution review and adjustment can be done graphically.

The main functions of the optimization process (which can be operated interactively or in a batch mode) are:

- Run Building
- Route Coupling

### Run Building Optimization

The run building process can be executed for a given destination school or a selected group of schools. In the latter case, all bus runs produced by the system will have multiple services to the selected schools. The process can be further restricted to a specified group of bus stops, or a group of students. The run building procedure typically follows these steps:

- A. The operator defines the parameters for the optimization process including: the destination school (or group of schools) to be considered, the bus stops (or students) selected for routing, and the load and time factors for each run. These parameters are then stored in a file and can be retrieved if another run of the program is wanted.
- B. The run building programs are executed. The programs globally generate an optimal set of runs based on the pre-selected stops according to operator-specified time and load limits. Runs are created by sequencing stops for the most effective routing pattern while satisfying transportation policies.
- C. The resulting runs are available for transportation staff review through interactive graphics. Any of the standard reports available on the system such as passenger lists by bus stop, bus stop listing on runs, etc. can be generated to help in the evaluation.
- D. Computer plots are generated to further help the evaluation of the results.
- E. From the run review, it may be desirable to change some of the parameters defined in Step A, as well as perhaps change some service requirements and then repeat the process at Step B above. This process can be executed as many times as required until satisfactory runs are produced. Once a set of runs has been generated, stops may be added, deleted, moved to another run, or exchanged with other stops. The operator can "freeze" any run, group of runs, or part of a run and re-optimize the remaining stops according to the same or different time and load constraints. In this case, or in the case where only minor corrections are required, the on-line interactive programs can be called upon to perform the final fine-tuning of the runs for operation.





EDULOG was the first company to develop a system with the ability to automatically build multiple bus runs to a specific school or cluster of schools while using full vehicle capacity and minimizing time and distance in travel. This capability has been honed by years of use, and the savings realized by our clients are well documented.

### Route Coupling Optimization

The route coupling software combines a specified group of bus runs into bus schedules with the objective of minimizing fleet requirements, travel distance, and wait times. The process can be conducted for any group of specified runs so that the least number of buses is used to transport all eligible students. Operation of the software is similar to the route scheduling process:

- A. The operator defines the parameters for the route coupling process: the group of runs involved, the particular restrictions on vehicle types and capacities, the time windows within which the runs can be at schools, etc. The parameters are stored in a file and can be retrieved and changed for another run of the process when needed.
- B. The route coupling is executed. The programs create coordinated bus schedules using the least number of vehicles while minimizing distances, deadhead travel, and wait times.
- C. Hard-copy reports are generated for review (or review can be carried out through interactive graphics). At this point additional simulations for school start/stop times and arrival/departure times can be performed to further minimize vehicle requirements.
- D. The review may lead to changing some of the run parameters and repeating the process at Step B above or, if the results are satisfactory or close to being so, the on-line interactive programs can be called upon to fine-tune the schedules.

We believe that the EDULOG route coupling optimization software has fully proven the value of automatically performing route coordination to maximize vehicle usage by scheduling multiple trips.

## REPORTING FUNCTIONS

EDULOG generated reports are of three types: standard reports used often and routinely, customized reports that are typically used only a few times a year, and user-defined reports. Standard reports include all student assignment and bus scheduling information, and are quickly produced with just a few keystrokes. Custom reports are easily created by non-programming staff; unlike many competing systems, there is no need to leave the EDULOG system to prepare custom reports.

Full capabilities for creating custom and ad hoc reports from the database are integrated into EDULOG software—giving EDULOG's report writer flexibility unsurpassed in the industry. Changes to the database structure are automatically incorporated into the report writer component—there is no need to alter the report structure when modifications are made to the database.

EDULOG's powerful Report-Writer includes complete sort priority options for individually designed special reports. For example, the system easily produces computer-generated routes and bus schedules with complete data for dispatching. The software will also automatically compute and display travel times and distances along actual streets. LPSB staff may select students based on any combination of criteria stored in the student files, and then sort and format the information as desired. Statutory reports can be easily produced. For example, the Report-Writer feature can generate reports for the effective management of the transportation system, such as:

- Driver Schedules—stops to be executed by vehicles showing points of pick-up (defined in terms directly understandable by the driver), the names and number of students assigned to each stop, and the expected time of arrival.



- Route Census—listing of route schedules including the name, identification number, school, grade, and home telephone number for each student assigned to a stop. All student data fields are available for selection for this report.
- District Listings—alphabetic listing of enrolled (not just transported) students including bus route and stop information, and enrollment data such as the student's address, school, grade, telephone number, and birth date.
- Timeline Report—time chart representation of the schedule of each bus, showing schools served, destination, deadheads between runs, and start and ending times for each run.
- School Listings—alphabetic listing of students arranged by school, grade, telephone number, birth date, and transportation (bus route and stop) information.
- Notification Cards—individual mailing labels and/or student notification cards, suitable for mailing, with information regarding stop location, stop time, and route assignment. These reports are available for selection of students according to school, grade, program, or bus runs. In particular, the user can select students who are affected by a change in schedule (for example, when pick-up and return times are changed) or reside in a specific user-defined area and generate the required notification for these students.
- Driving Directions—directions showing right and/or left turns with specific street names.
- Map File Reports—various reports listing all street segments of the school district with address ranges, speed limits, traffic restrictions, etc.

The system can produce a graphic hard-copy or display screen plot of virtually any report generated in text form by the Report-Writer. A similar procedure is followed for sorting priority options and data field selections. Sample output graphics include:

Computer-produced maps of the street network of the district with color coded speeds, street names, hundred block listings, user-defined hazard conditions, and one-way designations;

- Student distribution maps—the selection of students is user-defined with the same flexibility as in the report-writer;
- Bus stop maps—a selection of bus stops defined by the user to be represented over the street network;
- Bus run maps—a selection of bus runs defined by the user to be represented over the street network. At the option of the user, the actual street path used by the runs may be plotted.
- Capability to display several routes simultaneously;
- School attendance boundary maps;
- Student bus passes with student ID, name, grade, a.m. bus and stop numbers, and p.m. bus and stop numbers.

Reports can be formatted to provide any eligibility information desired—users can create reports of any desired format without leaving the system or having to learn arcane query languages. Exception reports are also supported, such as listings of students who are eligible but not transported and/or students who are transported but not eligible.

## SAMPLE EDULOG TRANSPORTATION REPORTS

Please refer to the following pages.



## Route Report with Stop and Run Info

Route ID:	01	Bus Number:	01	Vehicle Capacity:	0	
Route Description:	BUS ROUTE # 1					
			Assign	Assign		Acc
Stop Time	Description	Service ID	Stop Load	Run Load	Miles	Miles
RunID:	MHS.001	Days:	MTWUF-----00			
Run Description:	TO MATTOON HIGH SCHOOL					
7:20 AM	BUS GARAGE	@CP.001043	0	0	0.0000	0.0000
7:29 AM	2735 ST HWY 121	RID.253001	1	1	2.7955	2.7955
7:33 AM	10020 N COUNTY RD 000E- 1ST HOUSE ON LEFT (HEADY,BOGGS)	MHS.075001	2	3	3.3947	6.1902
7:35 AM	8844 N COUNTY RD 000E	MHS.300001	0	3	1.2290	7.4191
7:35 AM	8840 N COUNTY RD 000E	RID.214001	1	4	0.0040	7.4231
7:36 AM	8688 N COUNTY RD 000E	RID.241001	1	5	0.1502	7.5733
7:37 AM	375 E COUNTY RD 850N 1ST HOUSE ON LEFT (TURN AROUND IN DRIVE	MHS.077001	1	6	1.0273	8.6006
7:43 AM	8424 N COUNTY RD 000E	RID.262001	1	7	3.1337	11.7343
7:44 AM	8422 N COUNTY RD 000E	MHS.033001	3	10	0.4271	12.1614
7:46 AM	580 E COUNTY RD 750N	RID.190001	1	11	1.6091	13.7705
7:59 AM	SCHOOL: MATTOON HIGH SCHOOL	MHS.000001	0	5	5.3538	19.1242
8:00 AM	S 30TH ST & WALNUT AVE	RID.178001	5	10	0.2839	19.4081
8:01 AM	S 33RD ST & WALNUT AVE (STUDENTS SHOULD BE ON NE CORNER)	RID.044001	7	17	0.2439	19.6521
8:06 AM	SCHOOL: RIDDLE ELEMENTARY SCHOOL	RID.000001	0	0	1.9008	21.5528
RunID:	MMS.001	Days:	MTWUF-----00			
Run Description:	TO MATTOON MIDDLE SCHOOL					
7:43 AM	8840 N COUNTY RD 000E	MMS.377001	1	1	0.0000	0.0000
7:45 AM	10000 N COUNTY RD 000E	MMS.372001	1	2	1.2129	1.2129
7:52 AM	580 E COUNTY RD 750N	MMS.397001	1	3	3.3812	4.5941
7:58 AM	LANE ACRES	MMS.140001	19	22	2.8492	7.4434
7:59 AM	3345 WESTERN AVE	MMS.362001	22	44	0.4896	7.9330
8:01 AM	N 33RD ST & MOULTRIE AVE	MMS.142001	21	65	0.4165	8.3494
8:06 AM	30TH AND OAK	MMS.074002	12	77	1.1998	9.5492
8:07 AM	33RD AND OAK	MMS.075002	20	97	0.2443	9.7936
8:15 AM	SCHOOL: MATTOON MIDDLE SCHOOL	MMS.000001	0	0	2.4004	12.1939
8:22 AM	BUS GARAGE	@CP.001054	0	0	1.7225	13.9165
RunID:	RID.101	Days:	MTWUF-----00			
Run Description:	FROM RIDDLE ELEM & MATTOON MIDDLE SCHOOL					
2:20 PM	SCHOOL: MATTOON HIGH SCHOOL	MHS.000002	0	8	0.0000	0.0000
2:34 PM	8424 N COUNTY RD 000E	RID.263002	1	7	7.0784	7.0784
2:39 PM	2735 ST HWY 121	RID.254002	1	6	3.5108	10.5892
2:46 PM	8422 N COUNTY RD 000E	MHS.033002	0	6	3.4485	14.0377
2:47 PM	8688 N COUNTY RD 000E	RID.242002	1	5	0.1860	14.2237
2:47 PM	8660 N COUNTY RD 000E -5TH HOUSE ON LEFT (SALMONS)	MHS.076002	3	2	0.3064	14.5301
2:50 PM	10020 N COUNTY RD 000E- 1ST HOUSE ON LEFT (HEADY,BOGGS)	MHS.075002	2	0	1.9034	16.4335



### School Arrival / Departure Report

Period from: 8/26/2009 to 8/26/2009

Date: 08/26/2009 School code: 002 School name: GALENA PARK HIGH									
Bus Number	Run ID	Route ID	Event Type	Scheduled	Actual	Condition	Early/Late	School Window	Be/After
295 W/C	002.040	295 W/C	No Data	6:45:00 am					
361 W/C	002.043	361 W/C	No Data	6:45:00 am					
247	002.018	247	Bus Departed	6:40:00 am	6:45:30 am	On Time	5:30	06:40:00 AM-06:40:00 AM	5:30
210	002.049	210	Bus Departed	6:40:00 am	6:45:40 am	On Time	5:40	06:40:00 AM-06:40:00 AM	5:40
289	002.012	289	Skipped	6:48:00 am					
216	002.042	216	Bus Departed	6:50:00 am	6:48:29 am	On Time	-1:31	06:50:00 AM-06:50:00 AM	-1:31
237	002.020	237	Skipped	6:50:00 am					
360 W/C	002.028	360 W/C	No Data	6:50:00 am					
258	002.034	258	Bus Departed	6:50:00 am	6:50:18 am	On Time	0:18	06:50:00 AM-06:50:00 AM	0:18
242	002.048	242	Bus Departed	6:50:00 am	6:52:50 am	On Time	2:50	06:50:00 AM-06:50:00 AM	2:50
253	002.046	253	Bus Departed	6:45:00 am	6:53:00 am	On Time	8:00	06:45:00 AM-06:45:00 AM	8:00
218	002.037	218	Bus Departed	6:50:00 am	6:53:13 am	On Time	3:13	06:50:00 AM-06:50:00 AM	3:13
236	002.022	236	Bus Departed	6:50:00 am	6:53:55 am	On Time	3:55	06:50:00 AM-06:50:00 AM	3:55
257	002.032	257	Bus Departed	6:45:00 am	6:54:36 am	Late	9:36	06:45:00 AM-06:45:00 AM	9:36
281	002.024	281	Bus Departed	7:00:00 am	6:58:45 am	On Time	-1:15	07:00:00 AM-07:00:00 AM	-1:15
260	002.052	260	Bus Departed	7:00:00 am	7:06:06 am	On Time	6:06	07:00:00 AM-07:00:00 AM	6:06
245	002.044	245	No Data	7:10:00 am					
288	002.035	288	Skipped	7:30:00 am					
259	002.007	259	Bus Departed	7:20:00 am	7:42:37 am	Late	22:37	07:20:00 AM-07:20:00 AM	22:37
218	041.001	218	Skipped	8:10:00 am					
253	002.011	253	Skipped	8:30:00 am					

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## Vehicle Travel Distance Report

Period from: 1/8/2010 to 1/22/2010

Vehicle #	Date	Distance Traveled (in Miles)	Planned Mileage (in Miles)	Difference (in Miles)
10104	01/08/2010	169.71	164.89	-4.82
10104	01/09/2010	0.00	0.00	0.00
10104	01/10/2010	10.30	0.00	-10.30
10104	01/11/2010	167.87	164.89	-2.98
10104	01/12/2010	167.46	164.89	-2.57
10104	01/13/2010	168.02	164.89	-3.13
10104	01/14/2010	167.78	164.89	-2.89
10104	01/15/2010	162.81	164.89	2.08
10104	01/16/2010	0.00	0.00	0.00
10104	01/17/2010	0.00	0.00	0.00
10104	01/18/2010	0.30	164.89	164.59
10104	01/19/2010	5.82	164.89	159.07
10104	01/20/2010	58.28	164.89	106.61
10104	01/21/2010	9.75	164.89	155.14
10104	01/22/2010	0.00	164.89	164.89
20332	01/08/2010	95.51	92.84	-2.67
20332	01/09/2010	0.00	0.00	0.00
20332	01/10/2010	0.00	0.00	0.00
20332	01/11/2010	95.76	92.84	-2.92
20332	01/12/2010	92.28	92.84	0.56
20332	01/13/2010	96.01	92.84	-3.17
20332	01/14/2010	5.09	92.84	87.75
20332	01/15/2010	94.14	92.84	-1.30
20332	01/16/2010	0.00	0.00	0.00
20332	01/17/2010	0.00	0.00	0.00
20332	01/18/2010	0.00	92.84	92.84
20332	01/19/2010	93.99	92.84	-1.15
20332	01/20/2010	98.34	92.84	-5.50
20332	01/21/2010	89.86	92.84	2.98
20332	01/22/2010	7.68	92.84	85.17
20405	01/08/2010	119.71	128.81	9.11
20405	01/09/2010	0.00	0.00	0.00
20405	01/10/2010	0.00	0.00	0.00
20405	01/11/2010	67.51	128.81	61.30





Run ID:	100.20A	Route ID:	10			
Run Description:	TO AMELIA 8:40 BELL					
Days:	MTWUF-----00					
Stop Time	Description	Service ID	Assign Stop Load	Assign Run Load	Miles	Acc Miles
8:25 AM	520 N 2400 WEST ST ,84601	100.003001	25	28	0.5453	2.7816
	Last Name, First Name	District ID		School		Grade
	STOUT, REMMICK	000000024503		100		06
	UFFENORDE, KYAH	000000025825		100		01
	WIGHT, JANE	000000020193		100		03
	WIGHT, WILLIAM	000000025953		100		01
8:30 AM	SCHOOL: AMELIA EARHART ELEMENTARY	100.000001	0	0	1.7239	4.5055
8:38 AM	ARRIVE AT BUS COMPOUND	@CP.003040	0	0	3.2669	7.7723

\*\*\*\*\*

Run ID:	100.20D	Route ID:	4			
Run Description:	TO AMELIA - SPECIAL NEEDS 8:40 BELL					
Days:	MTWUF-----00					
Stop Time	Description	Service ID	Assign Stop Load	Assign Run Load	Miles	Acc Miles
7:21 AM	Deadhead - SCHOOL: PROVO HIGH SCHOOL	704.000002	0	0	0.0000	0.0000
7:31 AM	2041 S NEVADA AVE ,84606	100.024001	0	0	4.6733	4.6733
7:34 AM	2187 S DAKOTA AVE ,84606	100.032001	0	0	0.5754	5.2487
7:40 AM	1026 E 460 S (ABC KIDDY WORLD)	100.033001	0	0	2.4091	7.6578
7:42 AM	972 E 360 SOUTH ST ,84606	100.030001	0	0	0.3884	8.0462
7:55 AM	308 W LAKEWOOD DR ,84601	100.020001	1	1	3.3059	11.3521
	Last Name, First Name	District ID		School		Grade
	MUNIZ, OMAR	000000015447		100		02
7:55 AM	316 W LAKEWOOD DR ,84601	100.021001	1	2	0.0134	11.3655
	Last Name, First Name	District ID		School		Grade
	BOGDIN, BOE	000000014960		100		02



## SIS (STUDENT INFORMATION SYSTEM) INTERFACE

Designed by each district in consultation with EDULOG and their IT staff, the EDULOG student file is flexible and dynamic, containing exactly the information that is of concern to each district's unique set of circumstances.

### *Initial Download of Student Information*

During the start-up phase of the EDULOG implementation, a member of the EDULOG data preparation staff is assigned to oversee the development of the district geographic and student files. This person works closely with district personnel, making suggestions and recommendations to ensure successful matching of student and geographic data. The initial student file is prepared at EDULOG headquarters from an ASCII file provided by the district.

### *Periodic Student Information Update*

One of the more powerful features of the EDULOG system is the ability to perform periodic student updates from a master database already maintained by a separate system. This allows transportation and planning personnel to access the most current student data without having to keep track of changes in the database or repeat data entry functions already performed by others.

The first on-line test of the update procedure is typically conducted at the district during training. This ensures that district personnel can perform all the necessary operations and continue to update the student file independently of EDULOG. The frequency of the periodic updates is established by the district based on the expected volume of changes. At some districts, the update procedure is conducted daily, while other districts prefer weekly or semi-monthly intervals. The downloaded records may consist of only records which are adds, changes, and/or deletes since the last update if the master database system has the capability to extract such records.

**As for integration with student databases, nothing can compare to the ease-of-use and efficiency that comes with EDULOG's live student update utility. EDULOG has developed a process so that within three minutes of entering student information into the district's SIS, the EDULOG system automatically receives that information, determines transportation eligibility, assigns the student to the correct bus stop and run, and creates a bus pass. This is just one example of the power and integration capabilities that make EDULOG the number one choice of school transportation professionals.**

Alternately, the download may contain the entire active student population. The EDULOG implementation account manager is responsible for consulting with district IT staff to determine which methods are available and which one is most convenient and preferable in a given situation. EDULOG internal control files are then set to accommodate the desired mode of operation.



### *Student Address Information Processing*

EDULOG geographic information is stored in precise fields that break down an address into its component parts so that a student address may be matched to a specific geographic location. During the normal student update, student residence addresses are parsed into the EDULOG address format of number, prefix, street name, street type, and suffix. During the parse, translations are made for the prefix, street type, and suffix fields so that consistent entry of these fields in the master database is not required. For example, Street, Str, STREET, St., etc., will all be translated to the EDULOG standard type "ST". After matching students to the geocode, the parsed address is protected when a student record comes through the update with a minor change, such as a new telephone number.

### *Required Student Record Information*

The EDULOG student file contains basic information about each student in the district so that every student can be located in the geocode system, tested for school and/or transportation eligibility, assigned to bus stops if eligible, and recognized in tally functions throughout the pupil transportation system. A number of other fields may also be stored in the student file, allowing each district a customized file format that serves unique needs and concerns.

Six required fields are always contained in the student file:

1. LAST NAME
2. FIRST NAME
3. SCHOOL CODE

Each school in the district (and those out-of-district and/or parochial schools for which bus service is provided) must have a unique school code with any combination of alphabetical and numerical characters. It is also possible to perform an automatic translation of school codes during each periodic student update. For example, it is often more convenient for an EDULOG system operator to recognize "North Central High" as NCH rather than school code 159 as it may be stored in the master database. EDULOG prepares a translation table according to district specifications in such instances, with the translation transparent to the end-user.

4. GRADE CODE

The grade code identifies the student's grade and may also contain a reference to the type of transportation that must be provided. If, within the same grade, there are two or more groups being transported at different times, we assign a unique grade code to each group. The most obvious example is morning and afternoon kindergarten groups, which can be coded K1 and K2 or KA and KP. Special needs students often have a unique grade code as do parochial students in some instances. Alternately, downloaded data may contain the grade as "year of graduation."

5. STUDENT ID NUMBER

Six-digit student numbers are the most common although the nine-character maximum allows social security numbers to be stored in this field. This identification number must be unique for each student and preferably will remain constant throughout the students' enrollment. It is essential as a cross-reference between incoming records and existing EDULOG records during the automatic update procedure.



## 6. RESIDENCE ADDRESS

The residence address supplied here locates the student within the geocode as a basis from which to calculate distances for eligibility, stop assignment, and so on. The residence address should not include apartment numbers. If apartment numbers are desired, they may be maintained in a separate (auxiliary) field.

### *Flexibility in Customizing Student Records*

In addition to the required fields described above, the student file may contain other fields, entirely at the discretion of the individual district. This auxiliary information can be read into the EDULOG student file from fields already maintained in the master database, or may be fields that transportation and/or planning personnel intend to enter and maintain manually. Any combination of these two types of fields is acceptable. The variety, name, size, and format of these fields are subject only to the following constraints and suggestions.

- To use the system's mailing label functions, city, state, and zip code fields should be included. If the mailing address is different from the residence address, a separate field will need to be reserved for the mailing address.
- For analyses using demographic variables, a field must be assigned to hold desired information. For these purposes, fields such as ethnic code, sex, free/reduced lunch program code, handicap code, English as a second language (ESL), and bilingual codes may be appropriate.
- For schools with open enrollment policies, a field may be designated to hold the "home" school code as distinct from the school actually attended.
- Other fields frequently stored in the EDULOG student file are parent(s) name, telephone number, special program code, and emergency name and number. (These fields are listed as suggestions only.)

### *Uploading Capabilities*

Powerful report writing capabilities allow any information in the student record to be output to a fixed length ASCII disk file. This file can then be used as input to another application, which allows for the import of ASCII records. The procedure for uploading this information is performed by the same methods as described for the downloading of periodic student information updates. Record selection, output fields, and output column positions are completely controlled by operator-selected options within the EDULOG report modules.

In addition to the required auxiliary fields of the student records, other internally generated field values may be output. These may vary slightly, depending on the specific modules in use at a particular site, but in general include the following:

<i>Name</i>	<i>Description</i>
Eligibility Code	Eligibility for transportation
Assignment Distance	Distance from student residence to assigned bus
AM Stop/PM Stop	Bus Stop identification
AM Time/PM Time	Scheduled time of bus stop
AM Run/PM Run	Bus run identification
AM/PM Stop description	Location of bus stop
AM/PM Assigned count	Number of students assigned to stop
AM/PM Headcount	Number of students actually at stop
AM Route/PM Route	Bus route identification
Node 1	Identifies geocode location
Node 2	Identifies geocode location
Dist 1	Identifies geocode location
Dist 2	Identifies geocode location



If the district has specific uploading requirements outside of the fields that can be selected through the report writer function, EDULOG can provide a customized program to extract the specified information required by the district. EDULOG has provided districts with customized output files—for example allowing selection of only those students whose bus stop assignments have changed within a specific period.

## OPTIONAL SIF AGENT

The current EDULOG SIF agent is compliant with the SIF 1.5 standard. The EDULOG StudentSubscriber is a subscribing agent for EDULOG and SIF. The student subscriber allows student data to be added or updated in real time to EDULOG using a SIF Zone Integration Server.

Prerequisites to using EDULOG StudentSubscriber:

- District must have ZIS (Zone Integration Server) in place and be passing Student Personal, StudentSchoolEnrollment, SchoolInfo and Student Contact Objects to the ZIS.
- CPSI ADK needs to be installed. EDULOG can supply.
- SQL Server needs to be available for CPSI ADK.
- EDULOG staff will need to be in contact with district ZIS administrator.

When using SIF to populate EDULOG with student data the following fields may currently be used. All objects and elements must be populated at the zone level for the EDULOG Student Subscriber to import the records into EDULOG. The Objects and their respective elements are listed on the left side of the charts below. The corresponding EDULOG fields are listed at the right. User-defined fields will need to be created for any of the user-defined fields that are listed but do not already exist in the EDULOG dataset. All system fields are mandatory for SIF updates but user-defined fields are optional based on the district's needs. Any fields that the district would like to import outside of those listed below will require either a separate running of upstu or customization to the SIF agent. Districts already running EDULOG may or may not have the user-defined fields listed below. User defined fields may be added to EDULOG if required space is available in the studnt.usr file.

### Object 5.8.10 StudentPersonal

Element	EDULOG Field Name
LocalID	District Id
LastName	Last Name
FirstName	First Name
Address	Res Address
City	City (User-defined)
StatePR	State (User-defined)
PostalCode	Zip (User-defined)
GradYear	Graduation Year (User-defined)
PhoneNumber	Phone (User-defined)

### Object 5.8.12 StudentSchoolEnrollment

Element	EDULOG Field Name
School Name	School
* School name and SchoolRefId are used to populate correct school into EDULOG school field.	
GradeLevel	Grade
EnrollStatus	Enrollment Status (User-defined)
EntryDate	Enrollment Date (User-defined)





ExitDate	Exit Date (User-defined)
Homeroom	Homeroom (User-defined)

**Object 5.8.8 StudentContact**

<b>Element</b>	<b>EDULOG Field Name</b>
LastName	Contact Last Name (User-defined)
FirstName	Contact First Name (User-defined)
Address	Contact Address (User-defined)
City	Contact City (User-defined)
StatePr	Contact State (User-defined)
PostalCode	Contact Zip Code (User-defined)
PhoneNumber	Contact PhoneNumber (User-defined)
Relationship	Contact Relationship (User-defined)
EmployerType	Contact Employer Type (User-defined)

**SIF 1.5r1 Specification**

**Object 5.8.10 StudentPersonal**

<b>Element</b>	<b>EDULOG Field Name</b>
OtherID or LocalID	District Id
LastName	Last Name
FirstName	First Name
Address	Res Address
City	City (User-defined)
StatePR	State (User-defined)
PostalCode	Zip (User-defined)
GradYear	Graduation Year (User-defined)
PhoneNumber	Phone (User-defined)

**Object 5.8.12 StudentSchoolEnrollment**

<b>Element</b>	<b>EDULOG Field Name</b>
SchoolInfoRefId	School
* Used by the SchoolTable Builder to build translation file	
GradeLevel	Grade
EnrollStatus	Enrollment Status (User-defined)
EntryDate	Enrollment Date (User-defined)
ExitDate	Exit Date (User-defined)
Homeroom	Homeroom (User-defined)

**Object 5.8.8 StudentContact**

<b>Element</b>	<b>EDULOG Field Name</b>
LastName	Contact Last Name (User-defined)
FirstName	Contact First Name (User-defined)



Address	Contact Address (User-defined)
City	Contact City (User-defined)
StatePr	Contact State (User-defined)
PostalCode	Contact Zip Code (User-defined)
PhoneNumber	Contact PhoneNumber (User-defined)
Relationship	Contact Relationship (User-defined)
EmployerType	Contact Employer Type (User-defined)

## THE EDULOG BOUNDARY PLANNING/REDISTRICTING SYSTEM

This software module allows planners to analyze alternative attendance boundary scenarios using the data maintained by the student database management module. Planners can use the boundary planning module to analyze current or future students in system-generated alternative attendance boundaries. Staff can also simulate user-defined boundary scenarios and determine the effect of the reassignment of students to other and/or new schools.

The system has a report generating capability, which produces student counts by school, grade and any other relevant information within any area specified by the user. Student counts are tallied for the correct side of the street if the area under analysis is bordered by the center line of the street. Both sides of the street can also be assigned to the area being tallied. The tally area can be generated interactively using a mouse, bit-pad (digitizer), or the key pad. The user can use sophisticated polygon operations to interactively create the area. For example, the tally area can be defined as that area that is in two boundaries (polygon intersection) or as that area that is in one area but not in the other area (polygon difference).

The programs can provide custom report formats that tally students by user-specified geographic areas and provide statistical summaries by name, school, grade, sex, social and economic status, race, or any other user-specified student attribute stored in the EDULOG database. The system can produce mailing labels and form letters for students located in a user defined geographic area.

User intervention is supported during all phases of the boundary planning process. System users have final control of the results and can use their own judgement to make general and/or detailed boundary adjustments. Special considerations such as community interest, PTA membership, and other political realities can be included to maintain neighborhood consistency.

The complete graphics-based approach allows for the interactive graphic modification of data, such as boundary modification, *while identifying addresses or students by location from the graphics display screen*. This display also shows a multiple number of students per address location.

The boundary planning module offers the following capabilities:

- Simulates user-defined attendance boundary scenarios and determines the effect of the reassignment of students to other and/or new schools.
- Evaluates the effect of school closings, openings, or assignments.
- Evaluates the effect on school space utilization as a result of any changes indicated above.
- Allows for an indefinite number (limited only by disk space) of temporary retrievable boundary simulations.
- Analyzes any combination of the student data characteristics by census tract, school attendance area, user defined area, and block or nine digit zip code such that:
- Social and economic analysis can be conducted on the student population.
- Changes in the distribution of student populations can be studied.
- Enrollment projections and trends can be developed.

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.

- Produces a directory listing by district and school to be attended by children from given addresses.
- Generates school attendance boundary maps with user selected and defined annotations.
- Catalogues and saves for recall an unlimited number (limited only by disk space) of user-defined boundary areas.
- Loads and displays simultaneously any and all boundaries chosen from the main menu.
- Any number of boundaries simultaneously displayed graphically can be modified from the same screen.
- Boundary modification includes the ability to move any segment or point, delete, or insert any new point on any part of all displayed boundary perimeters.
- Any particular displayed boundary can be chosen to be hidden from the screen while other boundaries remain displayed.
- Graphic identification functions include ability to identify via cursor placement a street segment's name and address range on the right and left side of the street.
- Address identification functions include the ability to retrieve the exact street address number and street name for any cursor placement along the road network.
- When the address and street name is entered, the cursor can automatically locate and highlight the actual location (in the graphics mode).
- Given a stated address, the programs display by name the exact attendance zone or zones that contain the address.
- Student address locations are displayed on the correct side of the street.
- The system is capable of identifying and printing a report that identifies students who attend a school but live outside of the school attendance area. This report can also include a listing all student attributes including their reason for transfer.
- Plots in a hard-copy format any or all boundaries selected from the screen with boundary perimeter points clearly identified.
- Automatically creates and saves a new boundary from the difference of two overlapping boundaries.
- Automatically creates and saves a new boundary only for the intersected portion of two overlapping boundaries.
- Automatically creates and saves a new boundary from the union of adjacent boundaries.
- Able to delete or rename any or all displayed boundaries through a drop-down menu function.
- Capability to generate mailing labels and/or notification cards for students located in a user defined geographic area.

The system includes a versatile report-writer that allows production of hard-copy reports for analysis of data. It provides the user with the ability to edit, sort and display numerical tallies and text information of data.



## EDULOG WEBQUERY AND WEBSCHOOLASSISTANT SOFTWARE FOR INFORMATION DISSEMINATION TO SCHOOLS, PARENTS, DRIVERS, AND THE PUBLIC

With EDULOG's integrated web browser software, any authorized personnel in the school district can now access EDULOG information and answer transportation questions. Instead of constantly dealing with information requests, the web browser software can allow transportation staff to spend more time on improving routing and scheduling efficiency. Since the spring of 1999, we have expanded the web browser offering into a dramatic collection of software that extends the power of EDULOG throughout the district and the community. Bus assignments, schedule changes, new transportation plans, all this can now be viewed using intuitive, easy-to-use software—Firefox, Safari, or Internet Explorer. School districts that make frequent transportation changes or that need to “broadcast” EDULOG system information throughout the community will appreciate our web adjuncts to the EDULOG routing and scheduling system.

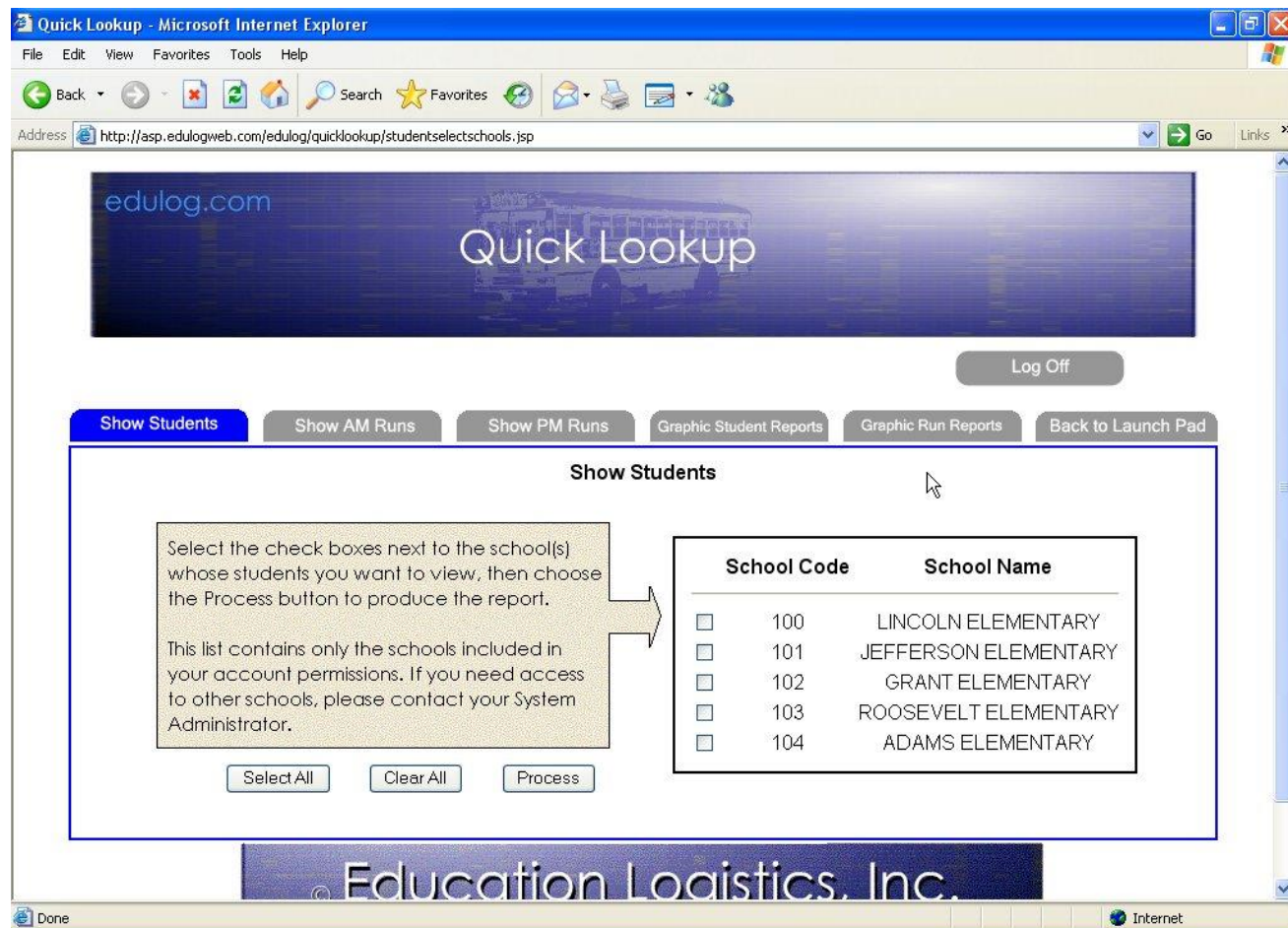
Usable either on a district “intranet” or through the World Wide Web, the EDULOG web browser software is an immense time-saver. When a parent calls a school about busing, a receptionist can use the software to find the nearest stop to a student's address, the pick-up and drop-off times, and the bus run number. If the district desires, this same information can be accessed by parents and community members through a portal on the district's web site. Using the Web-SchoolAssistant software, a principal can create a report listing all of the students at the school who ride the bus with their bus numbers, stop locations, etc.

School Code	School Name	Distance to School	Eligibility Description	Grades
204	BILLINGS ELEMENTARY	1.35 mi	Eligible	KA
203	T. EDISON GRADE SCHOOL	3.17 mi	Eligible	KA
102	GRANT ELEMENTARY	3.2 mi	Within walk distance of school	KA
206	WISERVER SCHOOL	3.26 mi	Within walk distance of school	KA
205	LAKELAND ELEMENTARY	3.31 mi	Eligible	KA
101	JEFFERSON ELEMENTARY	4.8 mi	Within walk distance of school	KA
201	ANACONDA PAROCHIAL	5.01 mi	Eligible	KA

The EDULOG web browser software now consists of four main components: WebQuery—for busing information and map display, WebStudent (not discussed in this response) for viewing student information and transportation assignments, WebReport (not discussed in this response)—for creating student and transportation reports, and our fully-featured WebSchoolAssistant—which offers most of the capabilities of the EDULOG routing and scheduling system in a read-only format. As busing operations become increasingly complex, more and more time is being spent answering questions or creating reports. With this new web software, any authorized person in the district can now access EDULOG information, answer transportation questions, and create reports.

By having the browser software access the same databases that run the EDULOG routing and scheduling software, a link is created between the transportation data and what is viewed with the web package. Therefore, when new bus stops or runs are created, the viewer makes these changes accessible to the district and the community. This not only reduces data entry work, but also ensures accuracy and completeness.

The WebQuery software is extremely useful for answering questions such as: what is the closest bus stop to any given address such as a student's house, when does the bus come in the morning and afternoon, how far is the bus stop from a house, and what is the bus number. In addition, the WebQuery software shows the same raster image map (if one has been created) used with the EDULOG routing and scheduling system. Looking much like a familiar street atlas, this graphic display not only shows the selected address and the closest schools, but also allows the viewer to zoom, pan, and scroll the map. By clicking on the displayed address and then drawing a line to any point (such as a school), the distance along the actual street network is displayed. To produce a paper copy of the map, just click on the print button from any computer connected to the district's network.



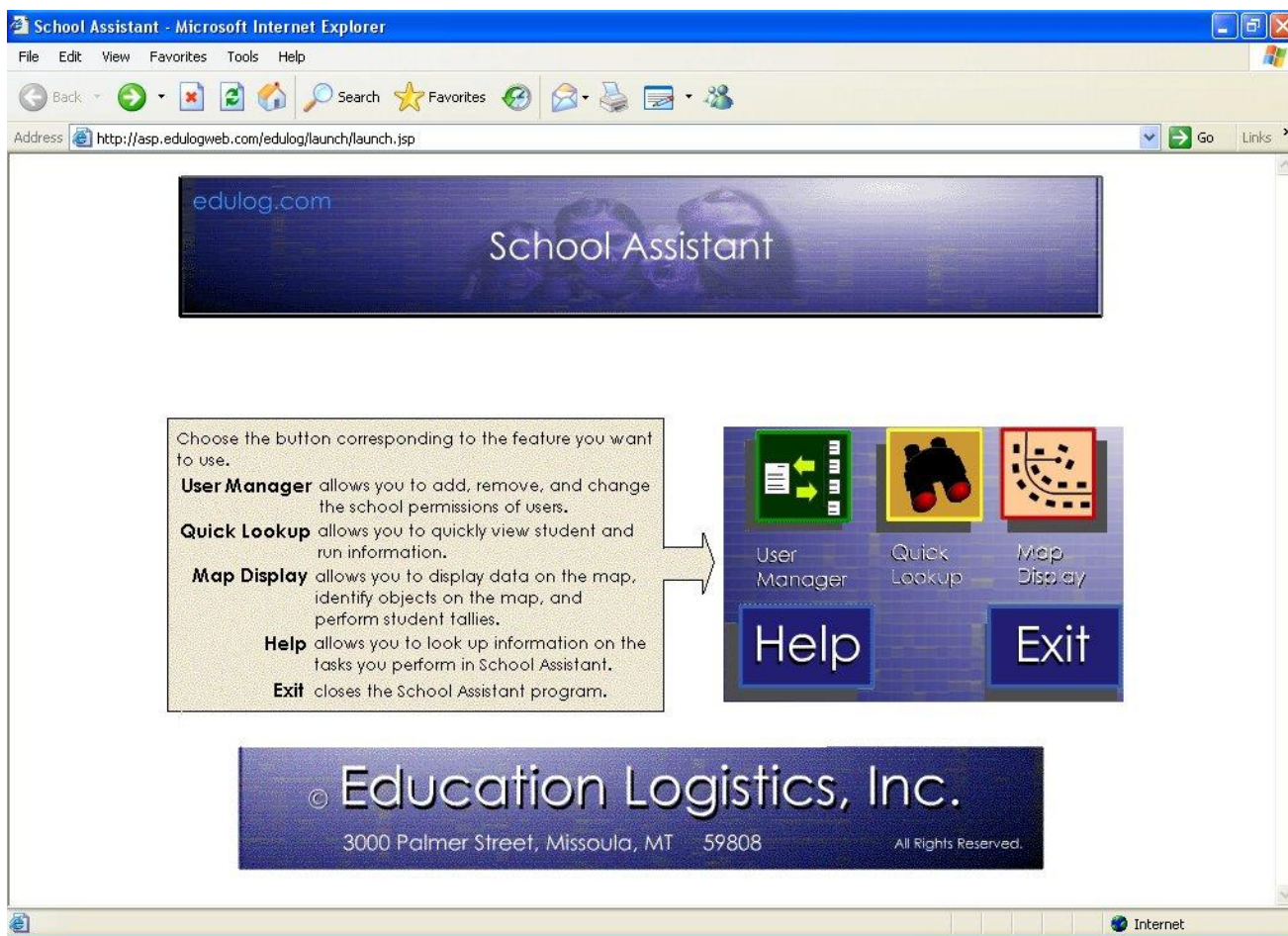
WebSchoolAssistant is the newest addition to the EDULOG family of web browser software programs. With WebSchoolAssistant, almost all of the information contained in the district's EDULOG system can be made available throughout the district in an easy-to-use, read-only format. Examples of how the district could use WebSchoolAssistant include:

- ♦ **Administrators need reports:** the district's business manager calls requesting information to present at the School Board meeting tomorrow. What are needed are lists by school, of the students who are transported and how far away from school they live. WebSchoolAssistant puts that report at your fingertips! Use the extensive reporting capabilities of WebSchoolAssistant to quickly generate the information.





- ♦ *Quickly get information about students within each boundary and avoid overloading buses:* It is brought to your attention that there are a lot of new elementary school children in a certain neighborhood, and you wonder if the existing bus servicing this area has sufficient space. Using WebSchoolAssistant, you simply click the “Student Tally” function for the area in question. If the student information is in the database, in seconds a detailed report will display critical information such as the students’ grades and home addresses as well as the number of students at each grade level.
- ♦ *Know which students should walk to school:* In WebSchoolAssistant, walk boundaries can clearly be viewed on the system map. Just by looking at the WebSchoolAssistant map, you can often tell if a child lives within a walk boundary—or you can use some of the many easy-to-use map tools. The result: you can give parents the information they need in a matter of seconds.
- ♦ *Parents want to know bus stop locations in their area:* It is a week before school starts and the phones are ringing off the hook. To find out details about the transportation possibilities at a student’s home address all you have to do in WebSchoolAssistant is type in the address the parent gives you in a “Locate Address” box. The program will then show you exactly where they live. Better yet, the software has a number of ways of showing you the active stops closest to the address. With just a few mouse clicks, you can give parents the necessary information they need to get their child to school! And anyone in the district can answer these questions if the district wants: EDULOG will help the district set up the appropriate security settings and permissions.



- ♦ *Emergency situation:* How many kids on the bus, who are they, can we get in touch with the parents if necessary? In three minutes or less a principal or school secretary can have that information in your hands by printing the route sheet with a passenger list and emergency contacts.

## EDULOG FIELD TRIP MANAGEMENT SYSTEM

EDULOG's field trip management system includes a web interface for schools to request field trips on-line—and also review the stages of the approval process.

The field trip module stores and reports trips by school, date, destination, requesting group, or trip category. The user can record a variety of items of information relating to each individual trip. Standard information can be included such as: grade levels and the number of students in the activity; originating school; destination; reason and date for the trip; when the trip was requested; and the proposed departure/return time.

Among its many versatile features, the field trip management module can automatically assign drivers to field trips scheduled for any particular day by taking into account such information as driver preferences, driver eligibility based on time left prior to overtime, type of vehicle, driver training required for the trip, and availability of vehicle based on use, repair, and mileage.

Field trip activity status reports can be prepared for a variety of needs to suit school administrators, trip requestors, drivers, and state auditors—and for reimbursement purposes.

To create a field trip, you submit a field trip request. A request is simply a form you fill out with the necessary field trip information, such as the origin, destination, the groups serviced by the trip (schools, typically), the number of passengers, the trip dates, and the times. When you submit the request, your transportation personnel evaluate the trip requirements and approve or deny the request. They can also assign drivers and vehicles, enter billing information, and so on. When they approve the request, the field trip management program automatically creates a field trip record for each requested trip.

The parameters that can be used when requesting a field trip include trip type (for example, overnight or out-of-state), the number of students and adults, the start and end points, the funding source, the group type, the school or schools associated with the trip, the duration of the trip, the names of the requestor and approver, reason for denial of trip request, driver assignment, special needs or certifications, etc. The EDULOG field trip management software is definitely the most powerful and flexible in the industry.

The screenshot displays the 'Request Information' form in the EDULOG system. The form is organized into several sections: 'Request Info' at the top with fields for Request ID (468), Request Date (03/02/2006), Request Status (Submitted), and a Comment field; 'Groups Served' with a table listing 'Winnequah Middle...' for 6th Grade with 12 students and a 100% split; 'Trip Times' with fields for Depart (03/22/2006 at 10:00 AM), Arrive (MM/DD/YYYY at 12:00 AM), Leave (MM/DD/YYYY at 12:00 AM), and Return (03/22/2006 at 04:00 PM), along with a Total Time of 6:00 and an Estimate Cost of 135.30; 'Trip Origin/Destination' with Origin (Winnequah Middle School), Distance (10), Destination (Princeton Club WEST), and Purpose (Sport); 'Trip Passengers' with Adults (2), High School (50), and a Total Passengers count of 52; and a 'Comments/Instructions' section with the text 'We will need a trailer for transporting equipment.' At the bottom, there are buttons for 'New Request', 'Cancel Request', 'Requirements', 'Equal Bill', 'Submit Request', 'Approve Request', 'Next Request', 'Prev Request', 'Delete Request', 'Save Request', 'Close', and 'Deny Request'.

The system will notify authorized users by email when the status of a matching request or field trip changes. For requests, you can receive notifications for any or all of the following status changes:

- Saved to Canceled
- Saved to Submitted
- Submitted to Denied
- Submitted to Approved
- Denied to Submitted

For field trips, you can receive notifications for the following status changes:

- No Resource
- Pending to Canceled
- Active to Canceled
- Active to Scheduled
- Scheduled to Canceled
- Scheduled to Completed
- Completed to Billed





# eEDULOG FieldTrip



## Make Requesting and Approving Field Trips Easy

When you use EDULOG's FieldTrip, you get a system that works with your routing and planning software to help you better manage extracurricular trips.



## Automated Assignments

EDULOG's FieldTrip can automatically assign the right driver and best bus to any trip by taking into account things like driver qualifications, seniority, scheduling, overtime, and more.



## Robust Reporting

Good record keeping is paramount in school transportation, and FieldTrip provides reports that can help you keep track of important information like mileage, billing, passenger rosters, assigned drivers, and even the status of pending trips.



## Web-enabled Means Access Anywhere

Because EDULOG's FieldTrip Software is web based, you can easily give teachers access to request trips, principals access to review them, and your transportation department's final approval based on your daily routing plans.

### Complete Integration

Field Trip works with your EDULOG Routing and Planning software to make scheduling trips painless. Use it as part of a complete EDULOG solution, and find out why districts all over North America rely on us every day!



Call today to learn more about EDULOG FieldTrip and how it can make your job easier.

eEDULOG | 866.340.3896 | [www.edulog.com](http://www.edulog.com)

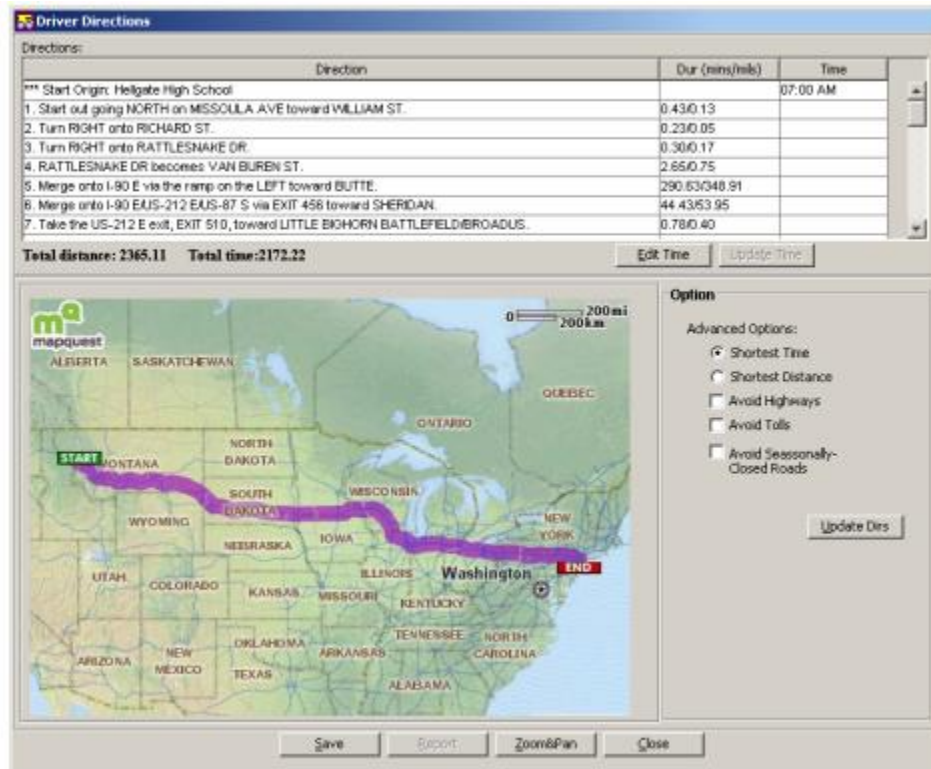


Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.

## SYSTEM SCREENSHOTS





Request Information

Request Info

Request ID: 94
Request Date: 04/27/2012 10:02 PM
Denial Reason:

PO #:
Denied By:

Req. Status: Saved
Denial Date:

Recurring Trip:
Frequency:
Recurrence:

Groups Served

Group Name	Department	Split %
Helgate Elementary		100.00

Add
Edit
Remove
Equal Bill
New Contact

Contact: Rob
Contact Phone: 555-555-5555

Trip Info

Purpose:
Vehicle Type:

Total Miles: 0.00
Total Time: 5.00

UD Label Char:
Approval Code:

UD Label Num:
Status:

Bill to SPED:
Due Date: MM/DD/YYYY

Trip Legs

Origin	Destination	Depart Date	Depart Time	Arrive Date	Arrive Time	Students	Adults	Needs
Helgate High School	Rocky Mountain Elk Fo...	04/30/2012	12:00 PM	04/30/2012	05:00 PM	30		

Over Night:
Bus Wait:
Destination:
Directions:

Objective

Estimate Cost: (PER BUS)
Objective 2:

Estimation Cost: 0.00
Other Cost: 0.00
Total Estimated: 0.00

Comments/Instructions

New Request
Cancel Request
Requirements
Attach
Submit Request
Print
Approve Request

New Request
Prev Request
Delete Request
Save Request
Copy Request
Close
Deny Request

**Submitting Reminder**

**Request Information**

Request ID	Group Name	Destination	Start Date	Status
15	Helgate Elementary	University of Montana	03/02/2012	Saved
16	Big Sky High School	University of Montana	03/05/2012	Saved
17	Big Sky High School	University of Montana	03/05/2012	Saved
43	Lobster	University of Montana	03/24/2012	Saved
44	Lobster	University of Montana	03/24/2012	Saved
45	Helgate Elementary	Montana Natural History Center	03/16/2012	Saved
46	Helgate Elementary	Rocky Mountain Elk Foundation	03/16/2012	Saved
47	Helgate Elementary	Big Dipper Ice Cream	03/27/2012	Saved
49	TestGroup	Lee Metcalf Wildlife Refuge	03/07/2012	Saved
56	Helgate Elementary	Bison Range	04/11/2012	Saved
59	Helgate Elementary	Helgate High School	04/03/2012	Saved

View Close

**Field Trip Information**

**Request Info**  
Request ID: 61 Request Date: 04/09/2012 09:15 AM Approved By: ADMINISTRATOR Approved Date: 04/09/2012

**Trip Info**  
Field Trip ID: 01 PO #: UD Label Num: Total Miles: 365.11 UD Label Char: Total Time: 53.00 Purpose: Bill to SPED: ☐ Use default vehicle type/capacity for auto assign: Vehicle Type: Capacity:

**Groups Serviced**

Group Name	Department	Split %
Helgate High School		100.00

Add Edit Remove Equal Bill Invoice Info  
Contact: Rob Contact Phone: 555-555-5555

**Trip Legs**

Origin	Destination	Depart Date	Depart Time	Arrive Date	Arrive Time	Students	Adults	Needs
Helgate High School	New York Plaza 2	04/02/2012	07:00 AM	05/02/2012	12:00 PM	20	1	0

Over Night: ☒ Bus Wait: ☒ Destination: Directions:

**Trip Runs**

Origin	Destination	Depart Date	Depart Time	Arrive Date	Arrive Time	First Name	Last Name
Helgate High School	New York Plaza 2	04/30/2012	07:00 AM	05/02/2012	12:00 PM		
Helgate High School	New York Plaza 2	04/30/2012	07:00 AM	05/02/2012	12:00 PM		

Driver Vehicle Aide Auto Assign Substitution Actual Trip Data

**Comment/ Instructions**

Check Conflicts Cancel Trip Requirements Trip Log Print Trip Trip Ticket Billing Info  
Next Trip Prev Trip Delete Trip Archive Trip Set Paid View Attach Save Trip Close



Actual Trip Data			
<b>Driver Information</b>			
Field Trip ID: 10	Trip Status: Completed	Dist Driver ID: 0002	
Last Name: Driver		First Name: Donald	
<b>Trip Leg Data</b>			
Trip Leg: Leg 1: School--University of Montana			
Odometer: <input type="checkbox"/> Overnight		Date(s)/Time: Driver Status: Assigned	
Depart: <input type="text"/>	02/01/2012	07 : 00 AM	Dist Vehicle ID: 23
Arrive: <input type="text"/>	MM/DD/YYYY	12 : 00 AM	Leg Distance: 0.00
Leave: <input type="text"/>	MM/DD/YYYY	12 : 00 AM	Leg Time: 2.00
Return: <input type="text"/>	02/01/2012	09 : 00 AM	Leg Wait Time: 0.00
Cal Distance		Leg OT Time: 0.00	
Cal Hours		Reset Times	
<b>Trip Deadhead</b>			
Odometer		Time:	
Depart Deadhead: <input type="text"/>	12 : 00 AM	Deadhead Time: 0.00	
Return Deadhead: <input type="text"/>	12 : 00 AM	Deadhead Distance: <input type="text"/>	
<b>Trip Passengers</b>			
Adults: 4	Student: 0		
Spec Needs: 120	Total: 124		
<b>Trip Data</b>			
Total Distance: 0.00	Comment: <input type="text"/>		
Total Time: 4.00			
Total Wait Time: 0.00			
Total OT Time: 0.00			
Actual Aide Data		Save Close	



List by Description	List by App	List by Query ID	Type	Query	App: All Application
Standard Calendar Report			STD	CRS000101	Calendar
Standard Daily Field Trip			STD	FTS000009	Standard Field Trip Rep...
Standard Daily Payroll			STD	FTS000028	Standard Field Trip Rep...
Standard Driver Report			STD	FTS000005	Standard Field Trip Rep...
Standard Driver Schedule			STD	FTS000031	Standard Field Trip Rep...
Standard Drivers: Trans Dept. Duty Time/Extra Activities			STD	MAS000091	Monthly Accounting Rep...
Standard Field Trip Information			STD	FTS000001	Standard Field Trip Rep...
Standard Field Trip Report			STD	FTS000003	Standard Field Trip Rep...
Standard Garage Check List			STD	FTS000029	Standard Field Trip Rep...
Standard Group Report			STD	FTS000004	Standard Field Trip Rep...
Standard History Field Trip Report			STD	HFS000065	History Field Trip
Standard History Monthly Accounting			STD	HMS000066	History Monthly Accou...
Standard Invoice			STD	IDS000007	Standard Invoice Report
Standard Invoice_Benefits			STD	IDS000111	Standard Invoice Report
Standard Monthly Accounting			STD	MAS000010	Monthly Accounting Rep...

Run query Done



## EDULOG FLEET MAINTENANCE/PARTS INVENTORY SYSTEM (OPTIONAL)

The EDULOG Fleet Maintenance System is an easy-to-use, fully integrated database for managing vehicles, parts inventory, work orders, and fleet personnel. A complete case history is kept for each vehicle that monitors operating costs, repairs, maintenance services, and fuel consumption. Unique advantages of the EDULOG Fleet Maintenance System (FLEETPRO) include:

An up-to-date Microsoft Windows user interface that is familiar, intuitive, and productive—thus reducing operator error, decreasing training time, and presenting information in a clear and concise structure;

- More than 25 user-defined tables let users easily customize the software to meet their needs;
- User-defined records, reports, and lists that let users get needed information quickly and efficiently;
- Automatic links to the most popular and powerful word processing, spreadsheet, and database products. Information in EDULOG FLEETPRO's databases can be seamlessly shared with or automatically update other applications—and vice versa—creating a total “document management” system. Using Microsoft's ODBC (Open Data Base Connectivity) and OLE (Object Linking and Embedding) functions, operators processing a work order can examine warranty or contract information, salary increases can automatically be passed to the EDULOG FLEETPRO personnel management records, or accumulated costs stored in FLEETPRO can be used in spreadsheets for sophisticated financial forecasting models;
- Network flexibility that comes from EDULOG's long history of providing multi-user solutions to school districts—the system will expand to meet the requirements of any number of users and operational sites;
- A leading relational database (Microsoft FoxPro) that is fast and flexible, increasing user productivity and access to information;
- EDULOG's multi-tiered approach to defining vehicles, parts, and work tasks follows a natural progression that lets users quickly get to where they want to go, then allows them to view any level of detail they need. There is no need to learn unfamiliar terminology or sort through lists of the entire inventory or vehicles;
- EDULOG's commitment to open systems and enterprise-wide database structures guarantees that the system is on the technological leading edge and compatible with other advanced systems. Obsolescence is a thing of the past with EDULOG FLEETPRO—even as hardware and software standards change and evolve.

Some of the main operating features supported by the system are:

A parts inventory, integrated with the work order database;

- Complete preventive maintenance scheduling on any vehicle, defined by mileage or date. The system can automatically identify all maintenance jobs that will become due or past due within any specified number of days or miles in the future and/or units of fuel;
- Several reports can be created to monitor the efficiency of the maintenance operation.

EDULOG's fleet maintenance system can accommodate any number of vehicles and keep accurate and up-to-date information on each vehicle in the fleet. Maintenance schedules are tracked by the system for each vehicle in the fleet—as are the cost of parts and labor. The system prompts the user to keep maintenance schedules current and shows when work is past due.

The fleet maintenance system is menu-driven and totally user-oriented. No data processing experience is required to operate the programs. The system not only files and sorts pertinent fleet data but also allows the user to change, add, and delete vehicle information with simple key strokes. Because all codes in the system are user-defined, the final product is customized to the needs of the client, rather than the less desirable situation in which the maintenance department is forced to conform to vendor-defined codes.





Parts inventory is a sub-module of EDULOG's fleet maintenance system. It serves as a major supplement both in determining the availability of parts and in controlling the cost of maintenance. Parts inventory is a comprehensive tool for the effective management of any number of separate part numbers. Inventory is sized to accommodate the needs of your garage and can be expanded or decreased. Parts are identified according to a numerical code and are accessible to the user by description, cost, storage location, size, and part number. Additional identifying characteristics may be specified. Parts in the inventory are valued according to various generally accepted accounting methods.

There are three major components to the fleet maintenance operation: the vehicles, the repair codes, and the work order.

## VEHICLES

Any number of vehicles are accepted into the system, each is identified by: type (manufacturer); year manufactured; fuel type; vehicle number; and size. Other identifying fields are available if required.

## REPAIR CODES

All repair categories and codes are defined by the user. More than 32,000 categories and codes are possible. For example, category 10 could be designated as brakes under which 100 meant to replace brake shoes, 101 to repair master cylinder, 102 to replace brake pads, etc.

## WORK ORDERS

The work order is the principal data entry tool in the system. Each vehicle has a work order file and the system provides for work orders that list: work codes performed; date work performed; mileage on the odometer; whether the job was emergency or scheduled maintenance; parts used; and name of the mechanic (initial code). Parts cost is also calculated by the system. Labor cost is always calculated by the system, based on the name of the mechanic and the work code. Provisions are also made for jobs extending over several days.

From the information provided on the work order, the system provides the user with all of the following features:

Work Order File—maintained for each vehicle over the life of the vehicle. This work order file is the core of the fleet maintenance module. From the terminal keyboard a user makes work order entries as work on a vehicle is completed. Provisions are made for extended shop work, allowing the user to keep track of partial progress on major jobs. The system automatically accumulates all entries when the job is finished.

Standardized Reports—The system is designed to generate several different standard reports relating the status of fleet maintenance. These reports contain a wealth of information for the user in hard copy form. All reports are presented in an easy-to-read format.

Scheduled Maintenance, Emergency Maintenance, and Preventive Maintenance—Generally a fleet maintenance system is designed to track both scheduled shop work and emergency repairs and it should differentiate between the two cases. The EDULOG system provides this distinction, allowing the maintenance department to learn which repairs were scheduled and which were emergency. The EDULOG design also adds a third feature to the system makeup: the capability to schedule preventive maintenance.



## PREVENTIVE MAINTENANCE

This system “manages” preventive maintenance. Schedules are evolved by treating a task as though it were regularly scheduled maintenance, letting the user assign it to an experimental timetable. The EDULOG system helps the district establish permanent timetables by allowing the director or manager to experiment with alternate preventive service schedules, and, over time, to tell if a change in maintenance and inspection work is yielding favorable results. Such changes can then be incorporated into the existing maintenance schedule permanently and the job is no longer guesswork.

Maintenance cost overruns are major contributors to the high cost of operating a fleet, as are consistent inventory overstocks and shortages. The EDULOG fleet maintenance/parts inventory system acts as a tracking device, helping management to identify and eliminate problems such as:

Poorly scheduled and maintained upkeep by mechanics—The system monitors all shop work and tells the user when repairs are past due, the frequency of all repairs (by code and by vehicle), and the incidence of emergency repairs. Poorly maintained vehicles can be pinpointed easily and labor productivity can be significantly increased.

Driver abuse and neglect—The frequency-of-repair feature of the system can show the existence of dollar-draining vehicle abuse and neglect by drivers. Better driver training or tighter operating control can often eliminate this problem.

Excessive fuel consumption—Fuel costs are monitored and recorded by the system. Each time a vehicle is fueled, mileage on the odometer is entered and fuel costs per mile are automatically calculated based on the price of each type of fuel stored in the machine. Waste, inefficiencies, or increasing fuel costs can be spotted before significant expenditures are made.

Non-uniform vehicle replacement policies and retirement schedules—This system monitors the “frequency of repairs” feature, the types of repairs being performed, and the amount of down time experienced by a vehicle. All these factors aid the garage in establishing retirement schedules based on time and miles traveled.

Inventory Inefficiencies—Costs can be controlled with the parts inventory feature as inventory problems like shortages and overstocks are recognized and dealt with. Cost savings are produced through several inventory control characteristics, including: an Economic Order Quantity (EOQ) model built into the system causing new orders to be generated for the inventory when a specified level of goods-on-hand is reached; a feature that inserts the number of a given part on order into the inventory automatically; and a complete and up-to-date vendor file is maintained.

## PERSONNEL MANAGEMENT MODULE

The personnel system was designed to do three things: computerize employee records, track certification and training information, and help establish labor costs for other fleet management modules to use.

As with all FLEETPRO modules, graphics play an important part in the personnel system. Employee photographs may be attached to each record to provide instant recognition of any employee. An entire screen is provided to allow users to define information they need to track. Simply tell us the information you want to track on employees and we will help you track it. Certification and training information for every employee is instantly available with the EDULOG FLEETPRO personnel system. System features include:

Basic personnel information—name, address, phone, etc.

- “Personal Information” screen to protect sensitive personal information such as wage and review information.
- Optional image capability—attaches employee photograph to record.



- Employee certification record tracking—drug testing, license information, etc.
- Employee training records—class description, renewal date, etc.
- Tracks personnel skills—allows multiple skills to be attached to each person.
- Interacts with work order system—displays list of personnel with specified types of skills.
- Tracks all personnel—mechanics, drivers, parts people, administrators.

## AUTOMATIC FUELING INTERFACE MODULE

EDULOG can provide as an addition to its fleet maintenance software an interface module to communicate with a fuel metering system. Keyboard input capability is provided with the EDULOG automatic fueling interface component.

The automated fueling component records the location, tank, vehicle, driver, date, time and fuel dispensed. EDULOG will interface with the fuel metering system to be selected by the client. From prior experience, EDULOG has familiarity with automated fuel dispensing systems from vendors such as Tokheim's Financial Card Systems Inc. (FCSI), Gasboy, and Fuelmaster by Veeder-Root. If requested, EDULOG will be happy to share its knowledge and experience with the district regarding the selection of an automated fueling system.

EDULOG's software interfaces with a tank level sensing device to determine the amount of fuel in storage by location and tank and can signal a need to reorder fuel.

## REPORT-WRITER CAPABILITIES

The primary management tools in the EDULOG fleet maintenance module are the reports, which can be generated from the stored fleet data. The user has several options when generating the fleet reports. Reports may be generated for any vehicle(s). The user sets his/her own parameters (when prompted by the terminal) so any time frame, repair type, number of vehicles, etc. can be analyzed. The automated fueling component provides reports on fuel consumption per tank, by tank, location, vehicle, or other appropriate arrangement useful to the client.

### Query Manager

Accessed through the Query Manager option on the File menu, the FLEETPRO Reports module opens with the launch pad. This launch pad provides access to the various module reports by clicking the appropriate button.

### Reports Button

Accessed from the Reports button on the main launch pad, the FLEETPRO Reports module opens with a list of the available reports. Double-click on any report in the list to access that report. You can also select Custom Reports to create a specific report to meet your needs.

Available standard reports include:

#### INVENTORY REPORTS

Obsolete Parts List  
Suggested Purchase Report  
Value of Parts/Materials Inventory

#### VEHICLE REPORTS

Vehicle Inspection Report  
Vehicle Cost Analysis  
Vehicle Depreciation

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.

Inventory By Location  
Systems/Assemblies/Parts Report  
Inventory Transaction Report

Vehicle History  
Vehicle Summary

#### **WORK ORDER REPORTS**

CM Costs  
CM Labor Usage  
CM Material Usage  
CM Parts Usage  
PM Backlog  
PM Forecast  
PM Tasks  
PM Costs  
PM Labor Usage  
PM Material Usage  
PM Parts Usage  
CM Other  
PM Other  
WO Template  
Maintenance Invoice

#### **PERSONNEL REPORTS**

Training Report  
Employee Personal Information  
Employee Report with Photo  
Driver Report  
Certifications Report  
Mechanic Report

#### **FUEL REPORTS**

Fuel Receipt Report  
Fuel Tank Report  
Fuel Tank Report by Site  
Fuel Tank Report by Type  
Fuel Invoice  
Detail Fuel Report  
Fuel Summary by Department/Account  
Fuel Summary by Date  
Fuel Summary by Vehicle  
Fuel Summary Report



## OPTIONAL EDULOG GPS/AVL SYSTEM

There are several software systems designed for the K-12 transportation industry that can take data from on-vehicle GPS devices and then display the position of school buses on a digital map. But when it comes to achieving a true return on investment from a GPS system—and knowing the difference between what a bus is doing and what it should be doing—integration of the GPS software with a district's routing and scheduling system is of paramount importance. For example, consider the following situations:

- A standalone GPS software system may tell us that a bus is at 103 Main Street at 7:55 a.m. Is this bus early, late, or on time? Should this bus even be at this location at all? Without having the ability to automatically compare real-time GPS data with the planned data contained in the routing and scheduling system, there is no way that any of these questions can be answered.
- This same standalone GPS system may tell us that another bus has not moved from 121 Elm Street for five minutes. Is the bus in trouble? Should it be somewhere else? Is it supposed to be stopped for this long? Again, only through integration of GPS with routing and scheduling data could you know if something out of the ordinary is occurring.
- Or you might notice that another bus is traveling down the Center Avenue and seems to be making stops every few blocks for a minute or more. You think that the bus might be off route, but you can't tell for certain because you can't display the planned travel path on the digital map and compare it with what the bus is doing.

Obviously, simply tracking and recording vehicle locations, travel paths, and times is not enough to obtain any meaningful analysis of actual vs. planned activities, nor does it provide for a way to make improvements and increase efficiency because there is no mechanism for comparing what should happen with what does happen.

The proposed EDULOG GPS/AVL tracking software (*EduTracker*) has the following capabilities:

- The GPS data can be displayed for any group of vehicles, selected by the user as all buses serving one specific school, or buses serving a given geographic area or buses satisfying any user-defined criteria.
- For each vehicle, the software allows the user to select the types of events to be reported. These may consist of such events like bus stops, school stops, railroad crossings, garages, emergency events, excessive speed alerts, idle events, etc. Each has a specific symbol selectable by the user, for color and shape.
- The GPS data can be reported with a complete travel path for any time interval defined by the user. The color, line type and other graphic attributes are selectable by the user. The system can display the real-time path together with the planned path for the vehicle if it exists.
- Emergency events are tracked according to different levels of severity. At the most severe, the emergency event will alert the user by sound or clear visual cue, may require specific action before any other activity can resume, and may notify all on-line users whether they are tracking that vehicle or not. At the least severe, it may simply be logged to a file for later analysis. The level of severity is district-defined. The types of emergency events are also district-defined.
- GPS location reporting is scheduled at a user-defined interval, for example 10 seconds for a yellow bus and five minutes for a field trip bus on a long trip. However, event-based data that are triggered by specific sensor readings or exception computations are transmitted immediately as they occur.
- With the EDULOG unit management software, the system allows the software reassignment of units to buses in an easy way when it is necessary to reassign buses that are taken out of service on any particular day and its route moved to another vehicle.
- With the EDULOG unit management software, the system allows for the software activation of spare buses in an easy way when necessary.





- With the EDULOG unit management software, the system allows for the reporting of the statuses of GPS units on a daily basis and notifies the system manager of any deficiency or malfunction of any GPS unit.
- The EDULOG system allows for the comparison of the actual driving data to the planned data as available in the routing system.
- The EDULOG system allows for the real time display of vehicle performance (early, late, on time). The comparisons are based on the use of the data available in the routing management system. Exception situations (as defined by the user, for example late status) are automatically brought to the user's attention, both in text table form (listing of bus operational data) and graphic mode (color coded icons immediately identifiable regarding the vehicles on-time/early/late statuses).
- The EDULOG system has the ability to display actual versus planned route data. Any bus stop can be clearly viewed as on time, early or late, missed or unscheduled. According to the current status of the vehicle, all future bus stops are provided an estimated time of arrival adjusted according to the latest real-time GPS data received.
- The EDULOG system has the ability to display actual versus planned route data on the map. The user can display both actual real-time and planned travel paths on the same screen, with a user-defined selection of colors and symbols to clearly separate the two.
- The system allows the user to easily evaluate the location of any bus stop as computed by the routing system in relation to the actual location reported by the GPS system. At the user's decision, the planned data can be automatically corrected if the optional run editor software is implemented.
- The system allows the user to easily compare the time at any bus stop to the time computed by the routing system. The user can then decide on any editing possible to realign the planned times to the actual GPS times, and the system should perform these time corrections with minimum user data entry.



# e EDULOGGPS

## Don't Settle for Just When and Where

Any GPS system can tell you that a bus is at 203 Main Street at 7:45 AM. What most systems can't tell you is if the bus is running late, early, or on time. With EDULOG's industry leading EduTracker GPS system, you can instantly compare what that bus is doing to what the bus should be doing.

Start  
Tracking  
Start  
Knowing

### What if...

You could see problems when they start instead of after they've happened?

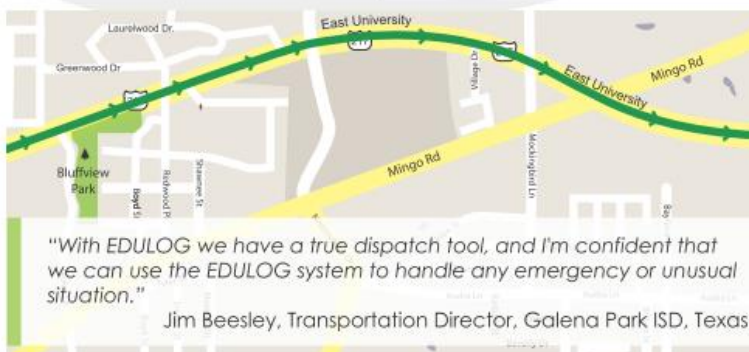


### What if...

You could increase safety and efficiency with one simple system?

### What if...

You could track your school buses instantly?



**Contact EDULOG  
to learn more and  
receive a FREE demo!**

866.340.3896  
[www.edulog.com](http://www.edulog.com)



# eEDULOGGPS



## Knowing the Whole Story Makes Your Job Easier

Locating a bus can tell you part of the story, but direct access to details like engine idle time, stop-arm deployment, and door status completes the picture.



## Compare Real World Data to Your Plan

Pair EDULOG's Routing and Planning software with GPS and comparing your plan to real world data becomes a simple task. Now you can track unscheduled and missed stops as well as early/late route deviations like never before.



## We Play Well With Others

While EDULOG GPS performs best when paired with our Routing and Planning software, it will work well with third party routing and planning software – as well as your current Student Information System.



## Simply the Best, No Exceptions

Districts using complete EDULOG GPS tracking solutions enjoy real success in making their transportation more effective and help them put money back into the classroom.

### When Leaders Unite, You Win

Accurate data relies on having the right GPS hardware on your bus and the right GPS software in your office. That's why EDULOG partners with Zonar Systems, one of the most trusted names in GPS hardware.



Call today to learn more about EDULOG GPS and how it can make your job easier.

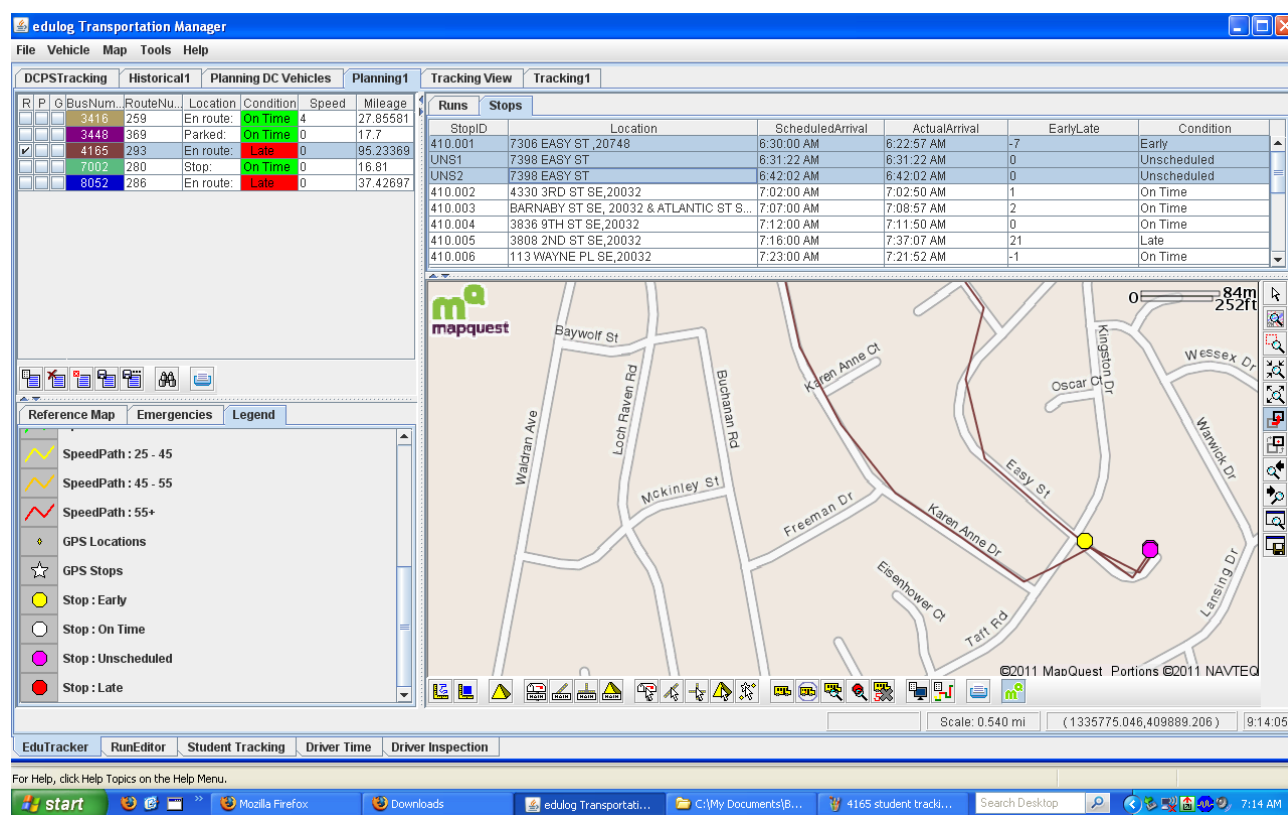
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## GPS AND ROUTING AND SCHEDULING INTEGRATION

“Integration,” in terms of GPS and routing and scheduling systems, has been used by vendors to mean almost anything—or nothing. EDULOG introduced the concept of GPS/Routing and Scheduling integration more than five years ago when we began delivering a solution that combined GPS information and planned data in one piece of software. At that time, only EDULOG was describing and offering such integration; our competitors either dismissed the value of integration or said that it couldn't be done. Since that time, as integration has been successfully implemented by EDULOG, these companies have had to deliberately skew the meaning of the word in order to accommodate what they are actually capable of delivering. As a result, what one company claims is integration is very different in value from another. Thus we believe it is important first define what integration really means.



The above screen display shows the actual times and route path for student pickups with comparative analysis to the planned times contained in the routing and scheduling software system.

### The Basics of Integration with Routing and Scheduling

Integration of a GPS/AVL system with the routing and scheduling system requires information exchange in three areas:

- The geocode (street segments, addresses, travel speeds, boundaries, point locations for students, bus stops, and schools)

- Student Information (assignment of students to buses, the locations of student residences and assigned bus stops)
- Transportation Information (bus identification, travel paths, times along a route).

For each of these three data classes there is the potential for integration by importing data from the district's routing and scheduling system into the EDULOG GPS system in real time. Examples of this integration include:

- Student information from the routing and scheduling database is also available in the GPS system for student ridership management
- Planned bus events such as the run sequence, start/intermediate/end times, assigned stops, and the travel path can be displayed by the GPS system and compared with what the GPS units are reporting.

The following example of comparative analysis is only one of the many situations where the advantages of the EDULOG solution of GPS/routing and scheduling integration are clear, significant, and in marked contrast to the competitors.

### **Comparative Analysis Functions—Planned vs. Actual Data**

The usual definition accepted by school districts for GPS/AVL/Routing and Scheduling comparative analysis is:

Allows for a comparison of live GPS data with planned routing data. Information about a route is taken from the routing system and then compared to live GPS data coming from the buses in the AVL software. The intent of comparative analysis is to be able to compare the actual activities of school buses with their planned schedule in real time.

By taking planned routing data and importing it into the EDULOG GPS software, clients can perform *comparative analysis* with the actual GPS data being collected. School districts can then see much more than just the location of buses—they can see which buses are running early or late and determine when a bus skips a stop or makes an unscheduled stop, etc. This integration with planned data results in a much more valuable solution than what is provided by any type of standalone AVL system. It allows districts to *manage by exception* and focus attention only on those instances where something unplanned or unexpected is occurring.

EDULOG's *EduTracker* GPS software offers the most advanced collection of these types of integrated features derived from comparing GPS data with planned routing data. The system effectively "talks" to the users, letting them know when something unplanned happens. It allows dispatchers to handle early/late buses with extremely accurate information rather than having to simply react as phone calls stream in from parents.

### **GPS/AVL SOFTWARE FUNCTIONS: EDULOG EDUTRACKER**

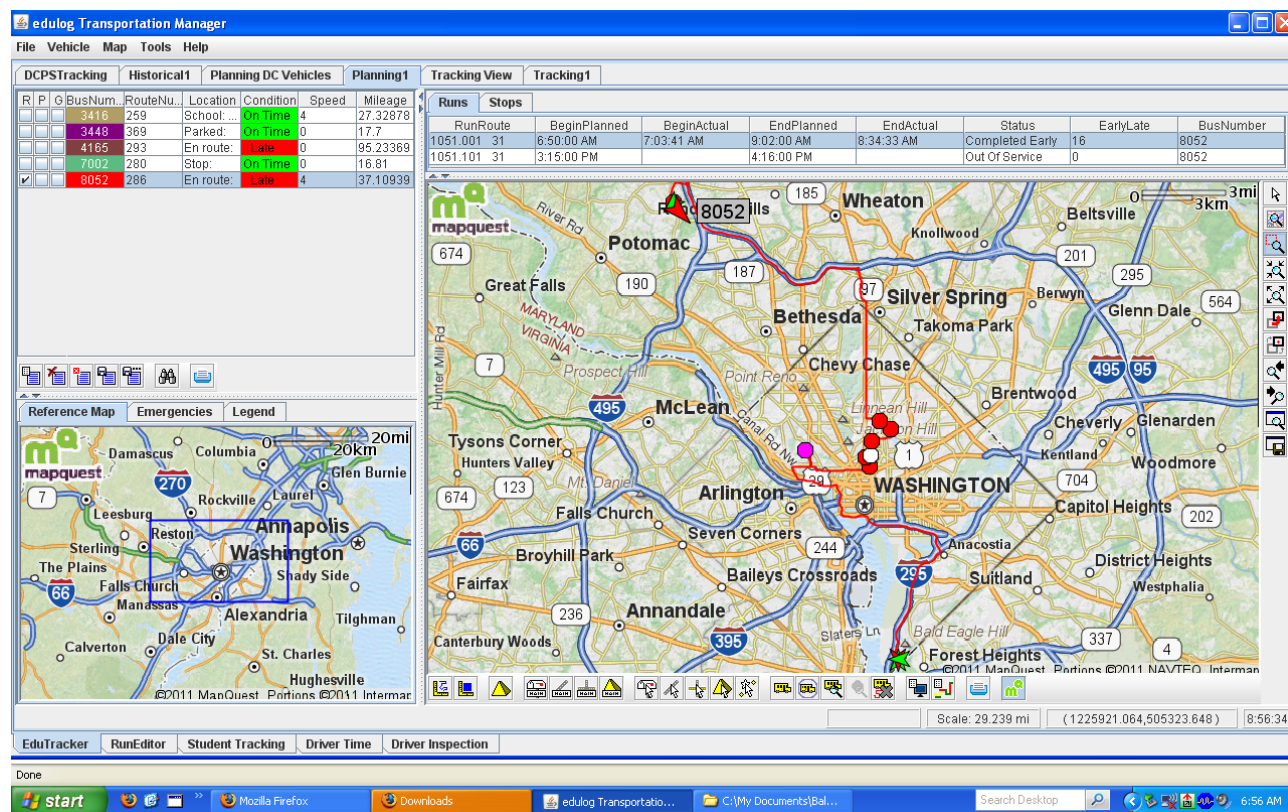
- Display real time bus locations
- Instant emergency notification
- Immediate access to vital student information
- Mouse hover provides instant access to information
- View actual and planned paths
- Dynamic rows and columns show early/late buses
- Icons change shape, size, color

**The real value of a GPS system integrated with a routing and scheduling system isn't immediately shown during the honeymoon stage, but rather after several years of intensive use. The clearest evidence of the value EDULOG offers through full integration is to speak with our clients who have saved millions of dollars in the past year alone—and these savings are directly attributable to benefits solely provided by EDULOG's fully integrated system.**



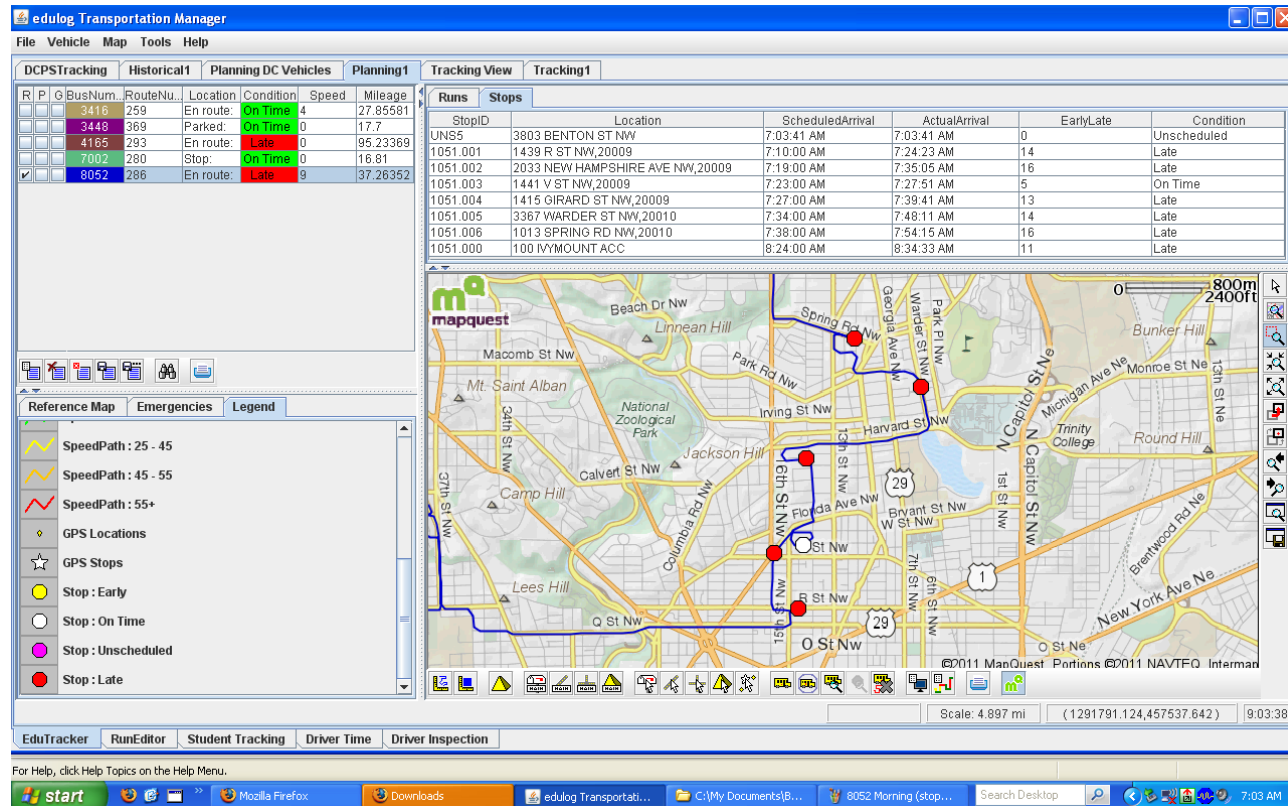


EDULOG provides school districts with a cost-effective and powerful method of tracking bus locations at all times. With this innovative technology, not only can you have the exact location of any bus displayed on the EDULOG system map, but the time and location of each pick-up and drop-off can be recorded for route analysis, emergency notification, and accident reporting. Because of the EDULOG system interface capabilities, uses of the GPS interface are almost endless. For example, if a district has an automated calling system, it would be possible using the EDULOG GPS interface to determine when a bus is late and then call every parent along the route to inform them of the situation. Enhanced productivity, maximized fleet utilization, improved safety and security, and increased community service can all result from the EDULOG GPS interface.



The above screen display shows the actual travel path and stop locations for a completed morning run with actual compared to planned times (obtained from the routing and scheduling system) displayed.

The combination of appropriate GPS equipment and our *EduTracker* software lets you go far beyond just locating a bus. Because EDULOG *EduTracker* is connected both to a feature-rich map and data from routing and scheduling software, you can quickly and easily find out not only where the bus is, but also where it has been and where it is scheduled to be. For example, you can display a single bus run or all of the bus runs serving a particular school, and the system will show on the detailed map where each bus is at the current time, the bus stops that have already been visited, and those awaiting service. *EduTracker* also tells you the scheduled time of the bus or buses at the stop, the estimated time of arrival, and the actual time of arrival. If a bus missed a stop, you will know instantly by looking along the travel path on the map. If a bus has missed a defined deadline, the map display will be highlighted to warn the system operator.



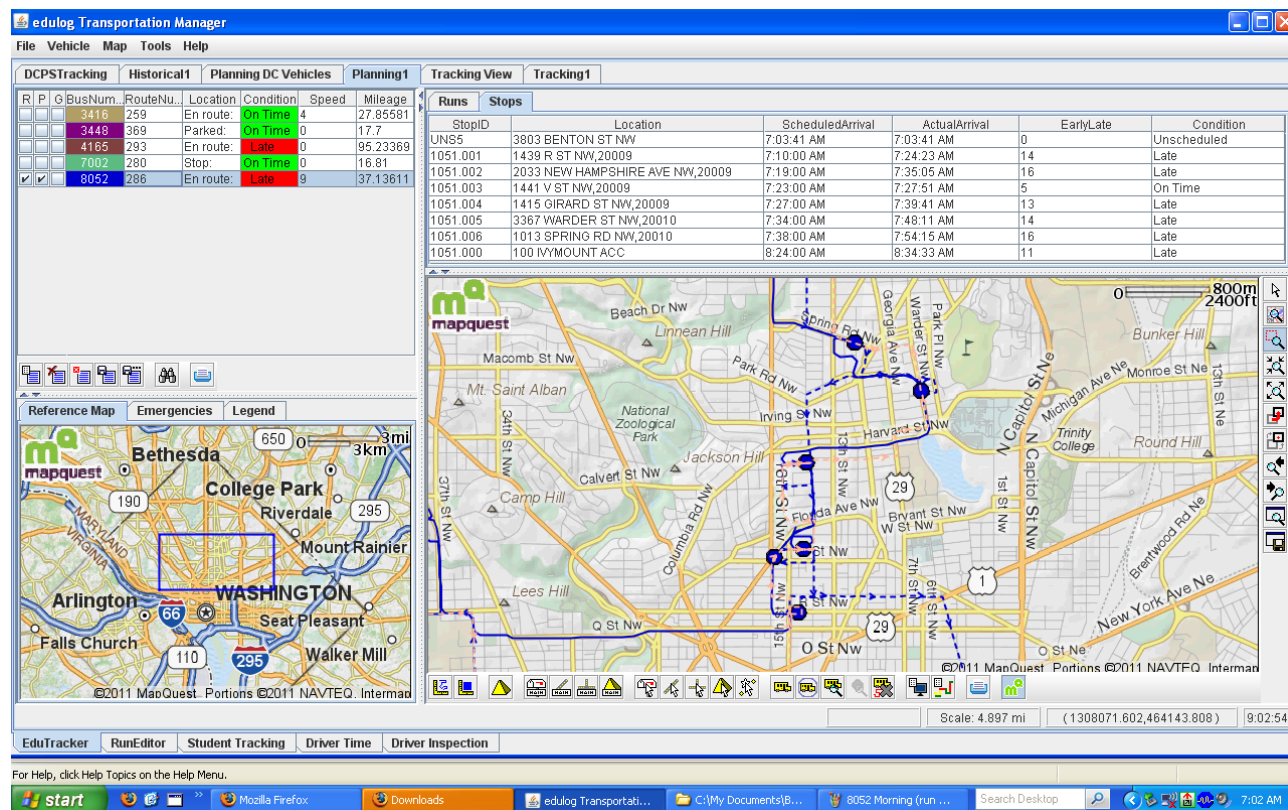
The above screen illustration shows the actual travel path of a bus with stop information, including on-time and late information (as compared to the planned data in the EDULOG routing and scheduling system) and cumulative mileage.

With this access to present, future, and past information for both time and place, EDULOG clients can quickly determine if there is an abnormal busing incident and take appropriate action. The delayed or stationary bus is highlighted on the system display, a dispatcher can radio the bus, report the position to authorities, and use the EDULOG system to get the names, phone numbers, and emergency contacts of all involved students. Having timely and accurate information during a serious incident can immeasurably improve performance, safety, and peace of mind.

But the *EduTracker* system is much more than just an emergency tool—it can be used to actually improve routing and scheduling efficiency. If a bus is consistently late on a run, the *EduTracker* will store this information for review and analysis. Using the included reporting functions, you can then determine the cause of the problem and make adjustments in the district's routing and scheduling data. If it is taking too long to load all the assigned students at that stop, then a routing adjustment may need to be made and some stops assigned to another bus run. If a bus is taking too much time between stops, then a different street may need to be used. Conversely, if a bus is taking less time than expected to complete a run, you can use the routing and scheduling system to assign more stops to that run—thus equalizing the load and maximizing fleet potential with verifiable statistics. Total time, total mileage, and idle time—all this and more is available for preparing state reports, cost calculations, performance reviews, and contract negotiations. With this information, you have the control and facts to make informed and fair decisions.

The EDULOG *EduTracker* system gives you:

- **Ease-of-use:** access is through the web from any Java equipped computer. At home, at work, on the move, the information you need is just a few clicks away.
- **Security:** you'll always know where your buses are, but this information is only for authorized users you allow. Further system security includes limiting views to only certain schools or only certain functions.



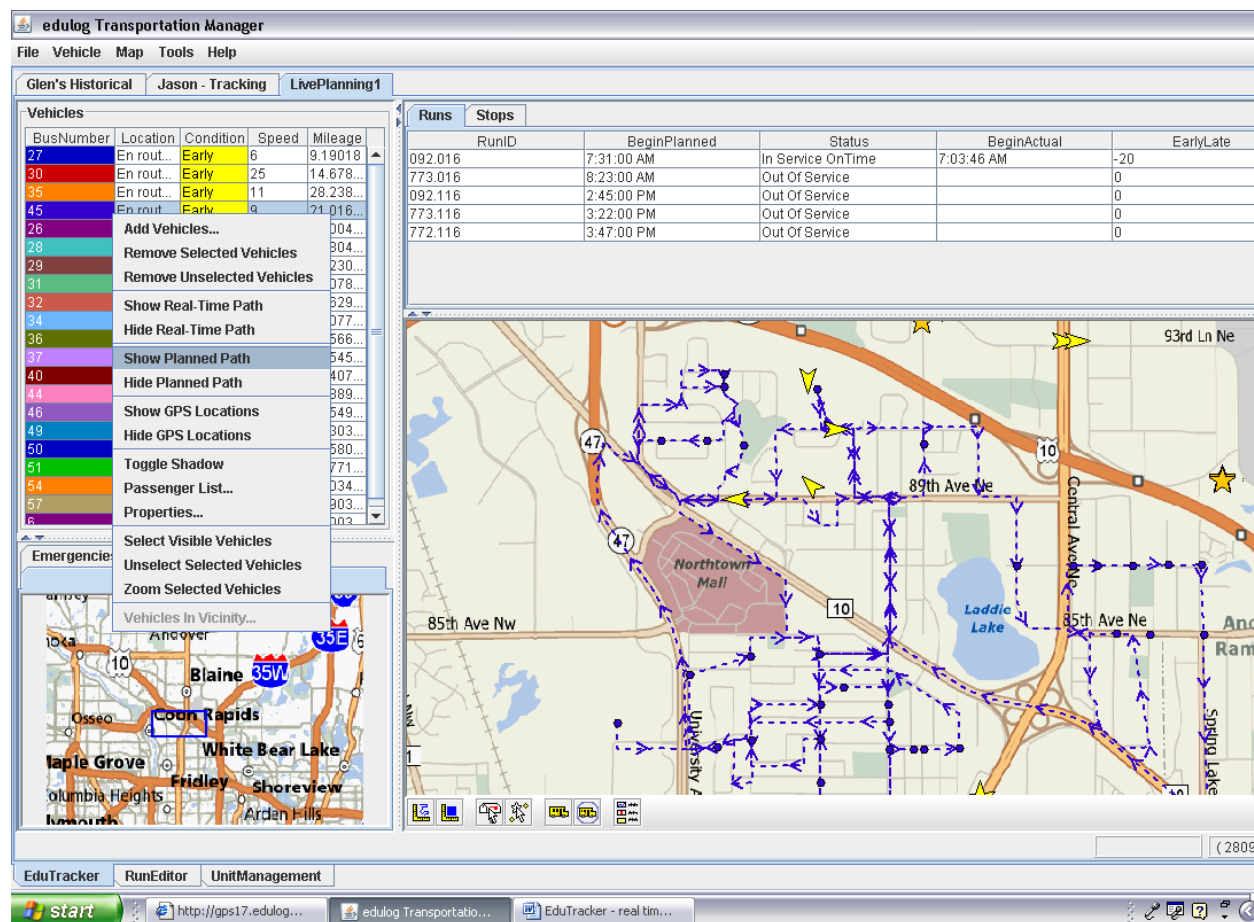
The above screen illustration shows details of a morning bus run with stop information of actual versus planned times.

- **Flexibility:** The map display lets you zoom in for detail, pan for the wider picture, show all or selected buses, and make on-the-fly distance measurements. With EDULOG's *EduTracker*, you see as much or as little as you need, without clutter or distractions.
- **Knowledge:** Now you can track, store, and report on real times and real miles, for an entire fleet during the whole year, or just one bus one day. With this information you can justify expenditures, calculate savings, and track efficiencies.
- **Integration:** because of EDULOG's open system design, information collected by *EduTracker* can be interfaced with alarm systems, student databases, financial software, maintenance schedulers, etc. Data entry duplication is eliminated, information is spread throughout the district, and your technology investment is leveraged for greatest return.



## OTHER CAPABILITIES

The EDULOG *EduTracker* GPS/AVL system can calculate loaded and unloaded travel miles, and validate reports for busing reimbursement from state and federal agencies. When the optional student ridership management software and hardware are added, the EDULOG *EduTracker* GPS/AVL system also has the ability to automatically track and record student ridership information in real time and both display this information and archive it for reporting and reimbursement purposes. This ridership information includes: student name and ID number, time and location upon entering the vehicle, time and location upon exiting the vehicle, and total ride time for any particular day.



The screen capture above shows planned routing data from the EDULOG routing and scheduling system displayed on the EDULOG *EduTracker* system.

The system operator has the ability to control the following attributes of the graphic display module of the EDULOG GPS/AVL system:

- Map Refreshing: The user has the ability to specify the timed intervals of data changing the system map.
- Vehicle Display: The user has the ability to specify which vehicles and the number of vehicles visually displayed within the application and/or on the map.

The EDULOG system displays vehicle location reports in real-time, for all vehicles, including the following:

- Ability to display groups of vehicles on the screen
- Stored standard groupings such as:
  - Buses running ten or more minutes late (or some other user-defined period) if comparative analysis information is available from the routing and scheduling system
  - Buses running early if comparative analysis information is available from the routing and scheduling system
  - Buses in “Emergency” mode (driver pressed the Emergency button)
- User-defined groupings such as:
  - Buses for a particular school
  - Buses in a particular geographic area
- Ability to color-code or otherwise graphically identify a certain bus or group of buses
- Buses running early turn one color, buses running late turn another color, parked buses are another color.
- Vehicle icons generate information boxes on mouse-over with:
  - Vehicle ID number.
  - Speed and travel direction of vehicle
  - Time of last GPS update
- Run number and run description, if vehicle is assigned to a run at the time
- Vehicle route number, if vehicle is assigned to a route at the time
- Calculated time ahead of or behind schedule, if applicable and if comparative analysis information is available from the routing and scheduling software

EDULOG GPS/AVL system reports provide the following data:

- Vehicle number
- Driver name and number
- Bus Route (if applicable)
- Bus Run (if applicable)
- Time and Date
- Vehicle position
- Vehicle position on street grid
- Vehicle speed and direction

The EDULOG GPS/AVL system also provides ready access to standard and user-defined reports such as:

- GPS history for a particular vehicle over a user-defined time period
- All bus departures or arrivals from a particular school for a particular date range
- Mileage statistics for buses
- Mileage statistics for routes or runs

## ALERTS

In the EDULOG system, alerts are classified as events that send a message to the system operator. Emergency events are tracked according to different levels of severity. At the most severe, the emergency event will alert the system operator at the base station by sound or clear visual cue, may require specific action before any other activity can resume, and may be notified to all on-line users whether they are tracking that vehicle or not. At the least severe, it may simply be logged to a file for later analysis. The level of severity is district-defined.

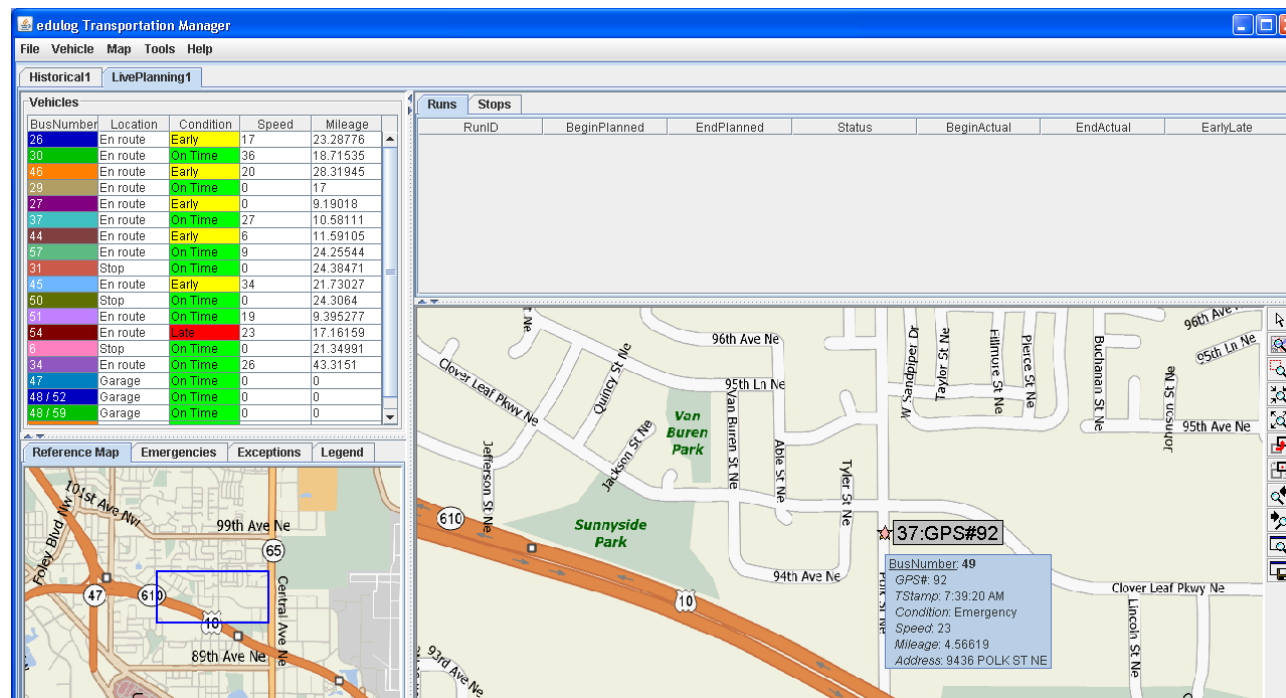




The types of emergency events are also district-defined. All alerts include the time, date, and exact location of the bus with bus number.

When a driver or vehicle attendant pushes the emergency button on the vehicle, a signal is transmitted through the GPS device to the EDULOG base station server. All workstations currently monitoring the system will have a pop-up box displaying the emergency event, the vehicle number, and the vehicle location. These emergency events are also stored in the system for later recall and analysis.

Below is a screen display showing an emergency condition.



Knowing where all the vehicles are, and what is happening out on the road, can also increase situational awareness and support effective decision-making when an accident or emergency occurs. These unplanned incidents can be handled better and quicker when a transportation department has an accurate picture of what is happening and are able to make decisions based on real-time information. This results in fewer delays, better use of resources, and better service to students and the community.

The EDULOG system displays vehicle location reports in real-time, for all vehicles, including the following alerts:

- Buses running ten or more minutes late (or some other user-defined period)
- Buses running early
- Buses in "Emergency" mode (driver pressed the Emergency button)
- Buses exceeding user-defined speeds
- Buses idling for a more than a user-defined period

The EDULOG GPS/AVL system also provides ready access to standard and user-defined reports such as:

- Missed stops (stops on routes that were not visited by the bus assigned to the route or run over a period of time or on a single day)
- Late or early stops (stops visited on the route, but within parameters for deviation from scheduled time)
- Late or early arrival at school stop based upon scheduled time

## GPS/AVL REPORTS

The EDULOG system can produce vehicle location reports in real-time, for all vehicles, including the following:

- Stored standard groupings such as:
  - Buses running ten or more minutes late (or some other user-defined period)
  - Buses running early
  - Buses in “Emergency” mode (driver pressed the emergency button, if installed)
- User-defined groupings such as:
  - Buses for a particular school
  - Buses in a particular geographic area
- Run number and run description, if vehicle is assigned to a run at the time
- Vehicle route number, if vehicle is assigned to a route at the time
- Calculated time ahead of or behind schedule, if applicable

EDULOG GPS/AVL system reports provide the following data:

- Vehicle number
- Driver name and number
- Bus Route (if applicable)
- Bus Run (if applicable)
- Time and Date
- Vehicle position

The EDULOG GPS/AVL system also provides ready access to standard and user-defined reports such as:

- GPS history for a particular vehicle over a user-defined time period
- Missed stops (stops on routes that were not visited by the bus assigned to the route or run over a period of time or on a single day)
- Late or early stops (stops visited on the route, but within parameters for deviation from scheduled time)
- Late or early arrival at school stop based upon scheduled time
- All bus departures or arrivals from a particular school for a particular date range
- Mileage statistics for buses
- Mileage statistics for routes or runs

On the following pages are several sample reports available from the EDULOG GPS/AVL system.



## Stop Arrival Report (All Early or Late Stops)

Period from: 1/15/2010 to 1/22/2010

Date: 01/15/2010 Bus#: 10104

Stop ID	Description	Scheduled	Actual	Planned	Difference
180.001	18TH AVE & 22ND ST S- 2 ASSTS	05:35:00 am	04:56:04 am	Early	-39:00
180.002	*1011 10TH AVE S (BYRD)	05:41:00 am	05:26:24 am	Early	-15:00
180.003	*4228 SP 12TH AVE N (ERVIN AM ONLY)	05:52:00 am	05:40:05 am	Early	-12:00
180.007	*CRESTMONT ST & WAVERLY ST (WILLIAMS)	06:19:00 am	06:05:27 am	Early	-14:00
180.008	*2738 ROOSEVELT BLVD (WELCH)	06:21:00 am	06:10:06 am	Early	-11:00
180.009	*142ND AVE ENT TO WHSPRNG PNS MHP (BERRY) (MB)	06:26:00 am	06:18:50 am	Early	-7:00
180.010	*142ND AVE & 200" E OF BELCHER RD (CRABILL)	06:27:00 am	06:19:38 am	Early	-7:00
180.011	*141ST AVE N & CORAL WAY (OLIVER)	06:32:00 am	06:24:08 am	Early	-8:00
406.006	16TH ST N & 35 TH AVE N (MSC)EFF 12/02	08:49:00 am	09:00:53 am	Late	12:00
180.012	*1230 DRUID RD (JOHNSON)	01:43:00 pm	01:34:51 pm	Early	-8:00
180.007	*CRESTMONT ST & WAVERLY ST (WILLIAMS)	02:10:00 pm	01:57:06 pm	Early	-13:00
180.008	*2738 ROOSEVELT BLVD (WELCH)	02:25:00 pm	01:54:15 pm	Early	-31:00
180.013	*5801 22ND AVE N (ERVIN PM)	02:42:00 pm	02:29:17 pm	Early	-13:00
180.002	*1011 10TH AVE S (BYRD)	02:55:00 pm	02:46:41 pm	Early	-8:00
180.001	18TH AVE & 22ND ST S- 2 ASSTS	03:00:00 pm	02:54:21 pm	Early	-6:00
406.000	SCHOOL: JOHN HOPKINS MS	04:15:00 pm	04:26:30 pm	Late	12:00

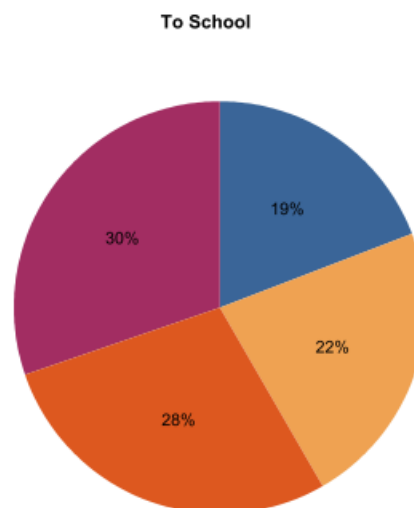


## School Arrival / Departure Summary Report

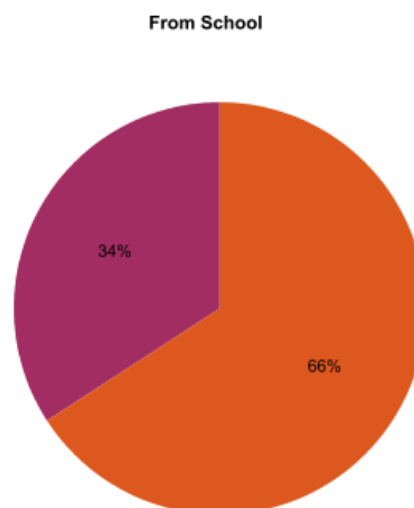
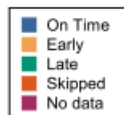
Period from: 1/11/2007 to 1/11/2007

School(s):045,092,272,771,772,773,774,775,776,777

<u>Status</u>	<u>Number</u>	<u>Percentage</u>
<b>On-Time</b>	<b>17</b>	<b>19%</b>
<b>Early</b>	<b>20</b>	<b>22%</b>
1 to 5	0	
6 to 10	5	
11 to 15	1	
16 to 29	13	
30 to 59	1	
60 or greater	0	
<b>Late</b>	<b>0</b>	<b>0%</b>
1 to 5	0	
6 to 10	0	
11 to 15	0	
16 to 29	0	
30 to 59	0	
60 or greater	0	
<b>Skipped</b>	<b>25</b>	<b>28%</b>
<b>No data</b>	<b>27</b>	<b>30%</b>
<b>Total</b>	<b>89</b>	<b>100%</b>



<u>Status</u>	<u>Number</u>	<u>Percentage</u>
<b>On-Time</b>	<b>0</b>	<b>0%</b>
<b>Early</b>	<b>0</b>	<b>0%</b>
1 to 5	0	
6 to 10	0	
11 to 15	0	
16 to 29	0	
30 to 59	0	
60 or greater	0	
<b>Late</b>	<b>0</b>	<b>0%</b>
1 to 5	0	
6 to 10	0	
11 to 15	0	
16 to 29	0	
30 to 59	0	
60 or greater	0	
<b>Skipped</b>	<b>60</b>	<b>66%</b>
<b>No data</b>	<b>31</b>	<b>34%</b>
<b>Total</b>	<b>91</b>	<b>100%</b>



## Bus Travel Distance Report

Period from: 1/8/2010 to 1/22/2010

Bus#	Date	Distance Traveled (in Miles)	Planned Mileage (in Miles)	Difference (in Miles)
10104	01/08/2010	169.71	164.89	-4.82
10104	01/09/2010	0.00	0.00	0.00
10104	01/10/2010	10.30	0.00	-10.30
10104	01/11/2010	167.87	164.89	-2.98
10104	01/12/2010	167.46	164.89	-2.57
10104	01/13/2010	168.02	164.89	-3.13
10104	01/14/2010	167.78	164.89	-2.89
10104	01/15/2010	162.81	164.89	2.08
10104	01/16/2010	0.00	0.00	0.00
10104	01/17/2010	0.00	0.00	0.00
10104	01/18/2010	0.30	164.89	164.59
10104	01/19/2010	5.82	164.89	159.07
10104	01/20/2010	58.28	164.89	106.61
10104	01/21/2010	9.75	164.89	155.14
10104	01/22/2010	0.00	164.89	164.89
20332	01/08/2010	95.51	92.84	-2.67
20332	01/09/2010	0.00	0.00	0.00
20332	01/10/2010	0.00	0.00	0.00
20332	01/11/2010	95.76	92.84	-2.92
20332	01/12/2010	92.28	92.84	0.56
20332	01/13/2010	96.01	92.84	-3.17
20332	01/14/2010	5.09	92.84	87.75
20332	01/15/2010	94.14	92.84	-1.30
20332	01/16/2010	0.00	0.00	0.00
20332	01/17/2010	0.00	0.00	0.00
20332	01/18/2010	0.00	92.84	92.84
20332	01/19/2010	93.99	92.84	-1.15
20332	01/20/2010	98.34	92.84	-5.50
20332	01/21/2010	89.86	92.84	2.98
20332	01/22/2010	7.68	92.84	85.17
20405	01/08/2010	119.71	128.81	9.11
20405	01/09/2010	0.00	0.00	0.00
20405	01/10/2010	0.00	0.00	0.00
20405	01/11/2010	67.51	128.81	61.30

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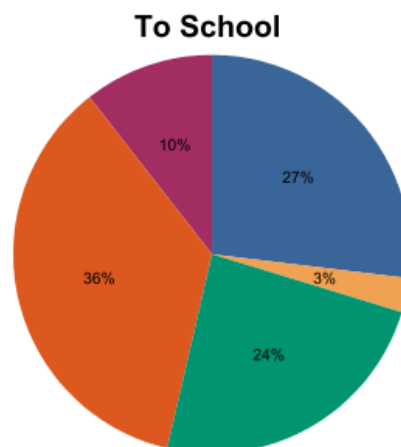


## Driver Performance Stop On-Time Statistics Summary

Period from: 1/15/2010 to 1/22/2010

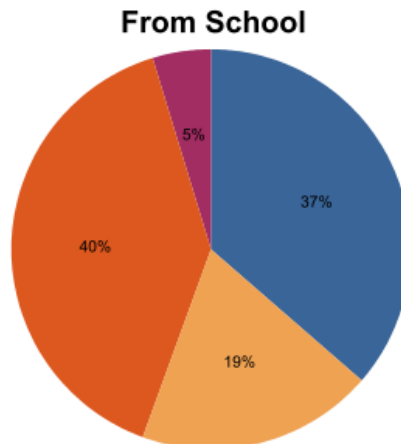
Driver Name : Dumas Jeff      Driver ID : 1988  
School Code : 341      Direction: To School

<u>Status</u>	<u>Number</u>	<u>Percentage</u>
On Time	18	27%
Early	2	3%
Late	16	24%
Skipped	24	36%
Unscheduled	7	10%
<b>Total</b>	<b>67</b>	<b>100%</b>



Driver Name : Dumas Jeff      Driver ID : 1988  
School Code : 341      Direction: From School

<u>Status</u>	<u>Number</u>	<u>Percentage</u>
On Time	23	37%
Early	12	19%
Late	0	0%
Skipped	25	40%
Unscheduled	3	5%
<b>Total</b>	<b>63</b>	<b>100%</b>

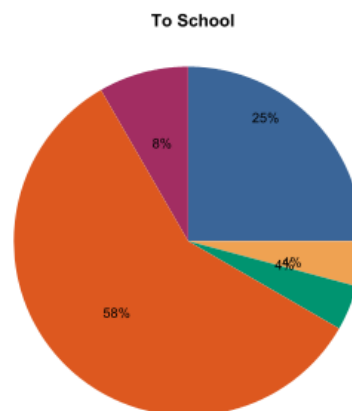
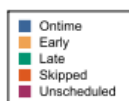


## Stop Efficiency Summary Report (by School)

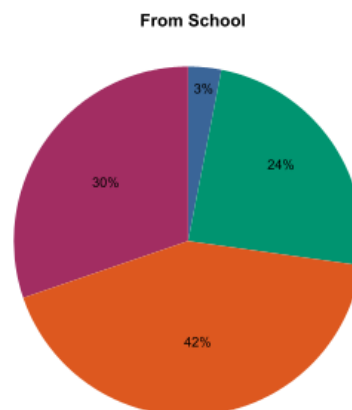
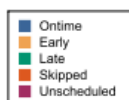
Period from: 4/17/2012 to 4/17/2012

School code : 388

<u>Status</u>	<u>Number</u>	<u>Percentage</u>
On-Time	6	25%
Early	1	4%
Late	1	4%
Skipped	14	58%
Unscheduled	2	8%
<b>Total</b>	<b>24</b>	<b>100%</b>



<u>Status</u>	<u>Number</u>	<u>Percentage</u>
On-Time	1	3%
Early	0	0%
Late	8	24%
Skipped	14	42%
Unscheduled	10	30%
<b>Total</b>	<b>33</b>	<b>100%</b>



## Actual/Scheduled Comparison Report (Expanded Stop Record)

Period from: 4/17/2012 to 4/17/2012

Date: 04/17/2012

Bus Number: 1404

Stop ID	Description	Scheduled	Actual	Planned	Difference
318.081	PENNY RD & HUNTERS BLUFF DR	06:26:00 am	06:18:49 am	Early	-7:00
318.085	DEERVIEW DR & PENNY RD-PM ONLY	06:26:00 am		Skipped	
318.004	8400 PENNY RD	06:28:00 am		Skipped	
318.062	5705 HEATHERSTONE DR	06:28:00 am		Skipped	
318.121	BEDFORDSHIRE DR & HEATHERSTONE DR	06:29:00 am	06:23:54 am	On time	-5:00
318.098	DOCKERY LN & HEATHERSTONE DR	06:31:00 am		Skipped	
318.171	HUNTFORD LN & PENNY RD	06:36:00 am	06:25:43 am	Early	-10:00
318.066	GLASSMAN LN & PENNY RD	06:36:00 am		Skipped	
318.373	PENNY RD & HUNTINGWOOD DR-PM ONLY	06:37:00 am	06:26:31 am	Early	-10:00
	5596 HUNTINGWOOD DR		06:26:37 am	Unscheduled	
	5596 HUNTINGWOOD DR		06:26:45 am	Unscheduled	
318.057	PENNY RD & PENNYSHIRE LN	06:37:00 am	06:27:40 am	Early	-9:00
318.330	HUNTERS MEADOW LN & PENNY RD	06:37:00 am		Skipped	
318.142	HOLLY SPRINGS RD & SOUTHBRIAR DR	06:40:00 am		Skipped	
318.135	FIELDING DR & INLAND CT	06:44:00 am		Skipped	
318.134	BELMONT FOREST WAY & FIELDING DR	06:48:00 am	06:33:07 am	Early	-15:00
318.079	4116 CAMPBELL RD	06:51:00 am		Skipped	
318.155	CAMPBELL RD & KOOMEN LN	06:52:00 am		Skipped	
318.133	CAMPBELL RD & COUNTRY FOREST DR	06:53:00 am	06:38:10 am	Early	-15:00
	3300 CAMPBELL RD		06:38:56 am	Unscheduled	
318.013	CAMPBELL RD & FORDLAND DR	06:53:00 am		Skipped	
318.084	CAMPBELL RD & SIGNATURE LN	06:54:00 am		Skipped	
318.000	SCHOOL: ATHENS DR	07:00:00 am		Skipped	
596.028	GLADE VALLEY LN & KIT CREEK RD	07:35:00 am		Skipped	
596.085	WEAVER FOREST WAY & JADEWOOD DR	07:39:00 am	07:32:26 am	Early	-7:00

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## School Arrival / Departure Report

Period from: 4/17/2012 to 4/17/2012

Date: 04/17/2012		School code: 302		School name: RIVER BEND ELEMENTARY						
Bus Number	Run ID	Route ID	Event Type	Scheduled	Arrival Time	Depart Time	Condition	Early/Late	School Window	Bef/After
1316	302.006	M1316	Skipped	8:45:00 AM						
1316	302.106	M1316	Skipped	3:50:00 PM						

Date: 04/17/2012		School code: 348		School name: BROUGHTON						
Bus Number	Run ID	Route ID	Event Type	Scheduled	Arrival Time	Depart Time	Condition	Early/Late	School Window	Bef/After
218	348.008	B218	Skipped	7:50:00 AM						
218	348.108	B218	Skipped	3:05:00 PM						

Date: 04/17/2012		School code: 388		School name: DANIELS						
Bus Number	Run ID	Route ID	Event Type	Scheduled	Arrival Time	Depart Time	Condition	Early/Late	School Window	Bef/After
218	388.015	B218	Bus Arrived	6:50:00 AM	6:58:35 AM	6:58:37 AM	Late	9:00	7:00 AM-7:15 AM	-1:25
218	388.115	B218	Bus Departed	2:30:00 PM	2:06:30 PM	2:26:52 PM	On Time	-3:08	2:30 PM-2:45 PM	-3:08

Date: 04/17/2012		School code: 398		School name: DURANT EL						
Bus Number	Run ID	Route ID	Event Type	Scheduled	Arrival Time	Depart Time	Condition	Early/Late	School Window	Bef/After
1316	398.003	M1316	Bus Arrived	7:45:00 AM	7:37:16 AM	8:07:56 AM	Early	-8:00	7:30 AM-7:45 AM	
1316	398.103	M1316	Bus Departed	2:50:00 PM	2:46:25 PM	2:58:58 PM	Late	8:58	2:35 PM-3:00 PM	

Date: 04/17/2012		School code: 399		School name: DURANT MD						
Bus Number	Run ID	Route ID	Event Type	Scheduled	Arrival Time	Depart Time	Condition	Early/Late	School Window	Bef/After
1316	398.003	M1316	Skipped	7:43:00 AM						
1316	398.103	M1316	Skipped	2:53:00 PM						

Date: 04/17/2012		School code: 500		School name: MILLBROOK SR						
Bus Number	Run ID	Route ID	Event Type	Scheduled	Arrival Time	Depart Time	Condition	Early/Late	School Window	Bef/After

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## Drive Time Deviation Report – Driver by Run

Period from: 1/15/2010 to 1/22/2010

Driver name : Dumas Jeff

Driver ID : 1988

Log date	Vehicle ID	Route Number	Run ID	From Time	To Time	Total Time	Mileage	Planned Time	Planned Mileage
01/15/2010	20943	525	618.024	05:24:28 AM	06:45:53 AM	01:21:25	30.7	01:46:00	29.9
01/15/2010	20943	525	136.501	06:55:18 AM	08:17:14 AM	01:21:56	15.9	00:24:00	0.0
01/15/2010	20943	525	341.006	08:33:25 AM	09:22:34 AM	00:49:09	12.1	00:49:00	10.0
01/15/2010	20943	525	618.124	12:52:08 PM	03:39:02 PM	02:46:54	48.8	02:34:00	53.6
01/15/2010	20943	525	341.106	03:49:23 PM	11:42:06 PM	07:52:43	18.5	00:59:00	10.0
01/19/2010	20943	525	618.024	05:25:25 AM	06:45:32 AM	01:20:07	30.8	01:46:00	29.9
01/19/2010	20943	525	136.501	06:55:24 AM	07:39:57 AM	00:44:33	5.1	00:24:00	0.0
01/19/2010	20943	525	341.006	08:20:31 AM	09:23:31 AM	01:03:00	12.4	00:49:00	10.0
01/19/2010	20943	525	618.124	11:41:44 AM	02:50:34 PM	03:08:50	29.4	02:34:00	53.6
01/19/2010	20943	525	341.106	02:57:03 PM	11:42:06 PM	08:45:03	21.2	00:59:00	10.0
01/20/2010	20943	525	618.024	05:28:45 AM	06:51:28 AM	01:22:43	30.8	01:46:00	29.9
01/20/2010	20943	525	136.501	07:03:47 AM	08:39:38 AM	01:35:51	20.7	00:24:00	0.0
01/20/2010	20943	525	341.006	08:40:38 AM	09:24:17 AM	00:43:39	11.8	00:49:00	10.0
01/20/2010	20943	525	618.124	11:18:39 AM	02:27:15 PM	03:08:36	48.0	02:34:00	53.6
01/20/2010	20943	525	341.106	03:04:36 PM	11:32:34 PM	08:27:58	18.6	00:59:00	10.0
01/21/2010	20943	525	618.024	05:28:52 AM	06:51:20 AM	01:22:28	30.7	01:46:00	29.9
01/21/2010	20943	525	136.501	07:14:16 AM	07:37:43 AM	00:23:27	0.0	00:24:00	0.0
01/21/2010	20943	525	341.006	08:23:31 AM	09:23:48 AM	01:00:17	12.3	00:49:00	10.0
01/21/2010	20943	525	618.124	11:25:06 AM	03:06:37 PM	03:41:31	49.7	02:34:00	53.6
01/21/2010	20943	525	341.106	03:08:47 PM	11:45:51 PM	08:37:04	20.1	00:59:00	10.0

Totals : 59:37:14 467.6 26:08:00 413.8

Number of runs : 5 AM Route : 1 Noon Route : 0 PM Route : 1



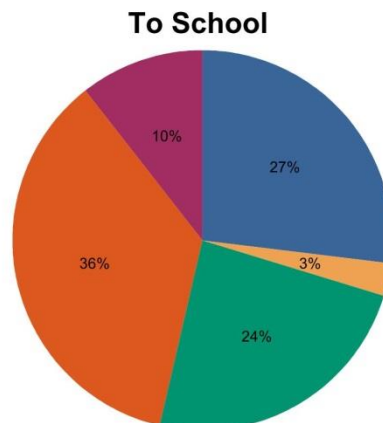


## Driver Performance Stop On-Time Statistics Summary

Period from: 1/15/2010 to 1/22/2010

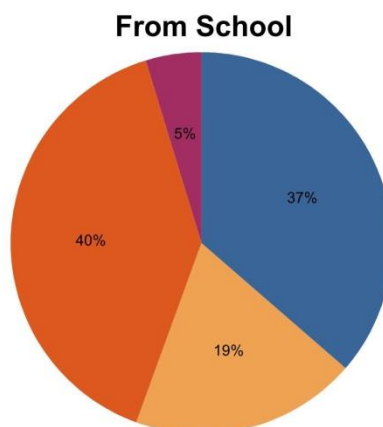
Driver Name : Dumas Jeff      Driver ID : 1988  
School Code : 341      Direction: To School

<u>Status</u>	<u>Number</u>	<u>Percentage</u>
On Time	18	27%
Early	2	3%
Late	16	24%
Skipped	24	36%
Unscheduled	7	10%
<b>Total</b>	<b>67</b>	<b>100%</b>



Driver Name : Dumas Jeff      Driver ID : 1988  
School Code : 341      Direction: From School

<u>Status</u>	<u>Number</u>	<u>Percentage</u>
On Time	23	37%
Early	12	19%
Late	0	0%
Skipped	25	40%
Unscheduled	3	5%
<b>Total</b>	<b>63</b>	<b>100%</b>



**Driver Performance  
Driver Actual/Planned Comparison Report**

(Single Stop Record)

Period from: 7/20/2011 to 7/20/2011

Driver Name	Driver Washington	Date : 07/20/2011			
Driver ID :	888999				
Stop ID	Description	Scheduled	Actual	Planned	Difference
	117 PERIMETER RD E	05:42:29 AM	05:45:36 AM	Early	0:03:07
	148 CHESAPEAKE ST SW	05:51:33 AM	05:58:46 AM	Early	0:07:13
	175 MOHICAN DR	06:02:30 AM	06:05:40 AM	Early	0:03:10
	10 TECUMSEH DR	06:13:09 AM	06:25:01 AM	Early	0:11:52
	9 CREE DR		06:31:02 AM	Unscheduled	
	0 WILSON BRIDGE DR	06:39:39 AM	06:44:20 AM	Early	0:04:41
2013.001	5182 EASTERN AVE NE	06:57:00 AM		Skipped	
	0 WILSON BRIDGE DR	07:01:16 AM	07:04:26 AM	Early	0:03:10



## EXAMPLES OF THE EDULOG GPS/AVL SYSTEM IN USE

### Stop Arrival Report (All Early or Late Stops)

Date: 09/21/2010

Stop ID	Description	Scheduled	Actual	Planned	Difference
361.149	1806 JOYCE ST	06:33:00 am	06:26:22 am	Early	-7:00
517.217	1808 WHITE ST	06:38:00 am	06:29:24 am	Early	-9:00
331.T01	DUDLEY SHUTTLE	03:15:00 pm	02:52:32 pm	Early	-22:00
331.114	1606 PHILLIPS AV	03:44:00 pm	03:56:04 pm	Late	12:00
478.014	403 SAVANNAH ST: ENTRANCE OF APTS	06:45:00 am	06:30:25 am	Early	-15:00
325.562	CHELTENHAM BLVD & RHEIMS DR	04:30:00 pm	04:44:15 pm	Late	14:00

The LPSB serves thousands of stops per day. Without reporting that allows you to manage by exception, it would be impossible to monitor the efficiency of your fleet. The report above lists only stops that were made early or late by more than seven minutes.



Once you've correctly used GPS to update your routing system, reports like the one above can be created seamlessly. A common report is similar to the one above. In this case, you can ask the system to report on stops that are early or late by more than seven minutes and have occurred on more than three days. **What does that tell you?** Likely, your driver is not doing anything wrong. What is needed is a correction in the routing system.

### Reduced Route Deviation

Unplanned route deviations are a significant cost to the district because they unnecessarily waste fuel, increase the total driving miles and the associated maintenance costs of buses, and are an unproductive use of driver payroll. Reducing the frequency of route deviations will immediately reduce the district's costs in these areas. Upon analyzing the data collected from one client, **the district operated with an 8% deviation from its planned bus routes** (it drove more miles than were needed). Using EDULOG's GPS solution will allow the transportation department to identify and eliminate most route deviations by having the ability to compare real world GPS data with the planned route for that bus.

A few examples are below:

## Drive Time Deviation Report – Vehicle Summary

### Vehicle ID: 1033

Total Time: 35:03:36	Planned : 33:12:00	Mileage : 742.0	Planned : 643.7
Number of runs: 5	AM Route : 1	Noon Route : 0	PM Route : 1

### Vehicle ID: 1269

Total Time: 36:10:22	Planned : 35:36:00	Mileage : 819.5	Planned : 768.7
Number of runs: 4	AM Route : 1	Noon Route : 0	PM Route : 1

### Vehicle ID: 410

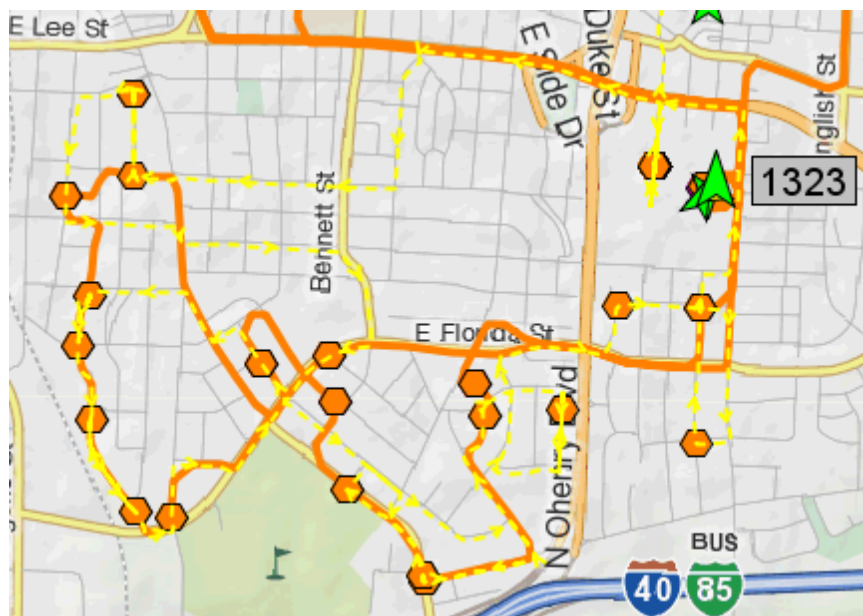
Total Time: 29:51:45	Planned : 27:10:00	Mileage : 565.6	Planned : 549.8
Number of runs: 5	AM Route : 1	Noon Route : 0	PM Route : 1

**Above is a sample report from *EduTracker* that compares the time a bus was in service to the time the routing and scheduling database indicates that the vehicle needs to be in service. The report also compares the mileage of GPS and the planning system.**

Take note that in each case, the bus was in service for longer and drove more miles than the routing and scheduling system suggests is needed. Integration with what the bus is actually doing (GPS) compared to what is planned for the bus to do (EDULOG routing) is critical.



Graphical display of route deviation:



The thicker (full) line is the GPS travel path. The planned path is the lighter yellow dashed line. With EDULOG, both GPS and planned routing data are available readily in one system with the click of a button. Note the driver does not serve the route in the same sequence or travel path as planned in the routing system. You'll also see that this driver uses a very different path than the one the routing office believes is being done.

Using the data collected, a fair assessment of savings that can be created by reducing route deviation can be calculated as follows:

<b>Average Daily Mileage Per Bus</b>	<b>86</b>
<b>Assumed Deviation</b>	<b>8.00%</b>
<b>Extra Miles Driven Per Bus Per Day</b>	<b>6.88</b>
<b>Extra Gallons of Fuel Used Per Bus Per Day</b> (7 miles per gallon)	<b>0.98</b>
<b>Extra Fuel Cost Per Bus Per Day</b> (\$3.00 per gallon)	<b>\$2.95</b>
<b>180 school days</b>	<b>\$530.74</b>
<b>Total Buses in Fleet</b>	<b>285</b>
<b>Total Annual Savings</b>	<b>\$151,262</b>

Note: This report only considers the cost of fuel. It does not take into account wear and tear on a school bus, maintenance expenses, driver payroll, and other costly factors caused by driving unnecessary miles.



## Reduce Unscheduled Stops

It is well known that bus drivers do not always make the same stops as planned by the transportation department—it is not uncommon for drivers to ignore some planned stops and make a number of unscheduled stops. This isn't necessarily the result of drivers intentionally doing something they know to be wrong, but the difference between what is planned to happen versus what actually happens in the real world can be a meaningful area for cost savings. Skipped and unscheduled bus stops can occur for a variety of reasons. For example:

- a) Drivers may not report to the transportation staff when a student stops riding the bus (they may not be motivated to do so because it would reduce their total route time). They don't make the stop, but rather drive past it, and the information never gets to the transportation department so that it can be factored into the planned schedule for that route. Transportation planners will continue to route the bus with the assumption that the stop is needed—thus producing a loss in routing efficiency.
- b) Drivers may be picking up some students at bus stops that the transportation department is unaware of, therefore making unscheduled stops (such as stopping directly in front of a student's home as a convenience). The driver may not believe he/she is doing anything wrong if this unscheduled stop is along the route the driver is supposed to be following. However, each time the bus comes to a stop and then must accelerate back to driving speed, there is an associated cost in increased fuel use. Unscheduled stops made willfully by drivers for other reasons are equally as expensive.

A few examples are below:

### Driver Performance Driver Actual/Planned Comparison Report (Single Stop Record)

Driver Name : Watson Myrna

Date : 09/01/2010

Driver ID : 456789

Stop ID	Description	Scheduled	Actual	Planned	Difference
366.235	705 E FLORIDA ST	06:35:00 am	06:45:00 am	Late	10:00
	1645 BRITTON ST		06:46:50 am	Unscheduled	
430.104	1211 VANCE ST	06:38:00 am	06:38:14 am	On time	0:00
337.166	BURTNER ST & VANCE ST	06:40:00 am	06:38:14 am	On time	-2:00
430.103	1511 VANCE ST	06:40:00 am		Skipped	

Above is a sample of Myrna's stops on September 1. You can see that the driver was late to one stop, on time to others, skipped one stop, and made an unscheduled stop at another location. The EDULOG system reports on GPS and routing and scheduling data simultaneously. While other vendors suggest they can integrate with routing and scheduling, no system can, or ever will be able to, report with

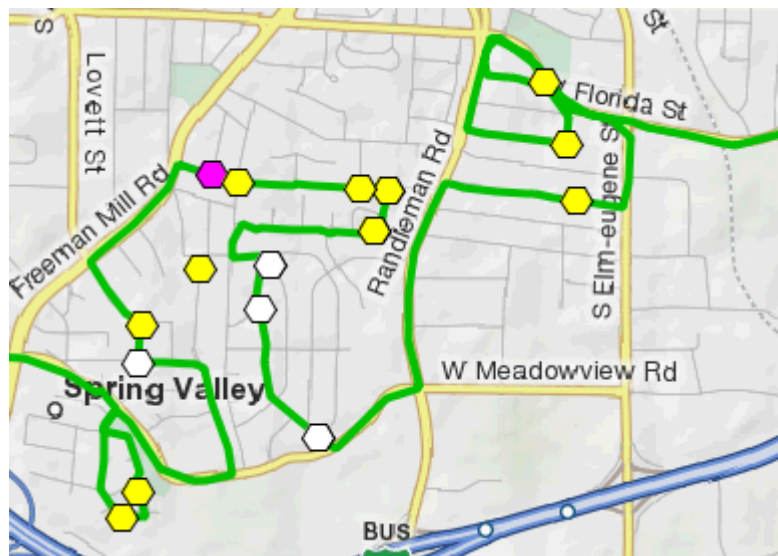
Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



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crystal clear details like the above unless both the GPS and routing and scheduling system come from the same vendor.

Graphical representation:



Yellow = stops serviced early. Magenta = unscheduled stops. White = stops served on time.

## Missed and Unscheduled Stops

Bus Number : 1033

Date : 9/2/2010

Stop ID	Location	Route number	Run ID	Scheduled tim
361.149	1806 JOYCE ST	1033	331.701	03:39:00 PM
366.346	TENTH ST & TUCKER ST	1033	331.701	03:41:00 PM
UNS147	199 S CEDAR ST	1033	331.701	04:19:16 PM
448.286	405 SYKES AV	1033	448.712	04:27:00 PM
UNS167	3388 BURLINGTON RD	1033	448.712	04:43:37 PM
UNS200	1600 BALL ST	1033	448.712	05:18:57 PM
UNS2	1260 WILLOW RD	1033	331.601	06:14:49 AM

The report above only lists stops that are missed and unscheduled. This is important for the routing staff as they evaluate real world conditions and compare with the planned events. You can see that with route 1033, there are four unscheduled stops, and also three stops that are in the routing software that are not being served each day.

Reporting is one of the most crucial components to a successful GPS system. It is imperative that reports give you detailed information while only showing you exceptions. With the very large number of bus stops served by the LPSB each day, it is crucial that you have the ability to evaluate stops on an exception basis, and not each one individually.

*Without deep integration, evaluation of stop details such as above would need to be reported in GPS, then reported in routing, and then compared side-by-side, taking up much more time than needed.*



## Stop Efficiency Detail Report (by Routes)

Route(s): 1033, 1269, 1323, 1370, 1381, 410

Route ID	To/From	Status	Number	Percentage
1269	From School	<b>On-Time</b>	291	22%
		<b>Early</b>	378	29%
		<b>Late</b>	91	7%
		<b>Skipped</b>	393	30%
		<b>Unscheduled</b>	148	11%
		<b>Total</b>	1301	100%
1323	To School	<b>On-Time</b>	1308	69%
		<b>Early</b>	58	3%
		<b>Late</b>	101	5%
		<b>Skipped</b>	146	8%
		<b>Unscheduled</b>	272	14%
		<b>Total</b>	1885	100%

Above, you'll notice that bus 1269 makes 58% of its stops either early, late, or on time (stops that are in the routing system and that are being served). However, what is certainly telling is that 42% of the stops served by this route are stops that the routing users are not aware of, or are stops that are in the routing system that are not being served. You'll note that actual performance of route 1323 compares nicely with what the bus is planned to do.



A sample report:

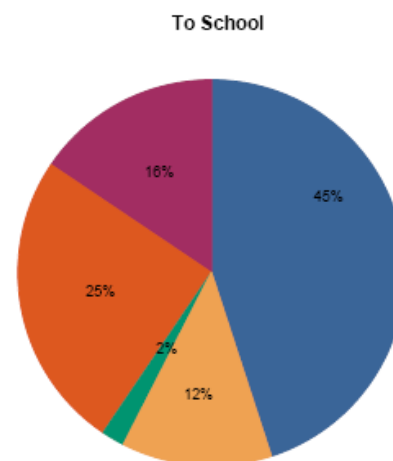
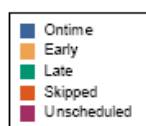
**How did your district do overall on September 17?**

### Stop Efficiency Summary Report (by Routes)

Period from: 9/17/2010 to 9/17/2010

Route(s): 1033,1269,1323,1370,1381,410

<u>Status</u>	<u>Number</u>	<u>Percentage</u>
On-Time	174	45%
Early	48	12%
Late	8	2%
Skipped	97	25%
Unscheduled	60	16%
Total	387	100%



Keep in mind that what this client district considers to be early, late, or on time was put at a five minute interval. The most common setting by our clients (which is user defined) is to always be flagged if a bus is early (morning), but can be as late as ten minutes.





By implementing an EDULOG GPS solution, the district will be able to quickly identify and remove most unscheduled bus stops. Doing so will improve the quality of the planned data used for bus routing and scheduling and will effectively reduce payroll, idle time, total mileage, and fuel consumption. It has been estimated by other school districts that removing a single unscheduled daily bus stop will result in an annual savings of \$60 to \$70 per year. With an average unscheduled stop rate of 12.5%, the Lafayette Parish School Board would realize the following savings:

<b>Average Stops Per Day Per Bus</b>	<b>61</b>
<b>Rate Unscheduled</b>	<b>12.50%</b>
<b>Average Unscheduled Stops Per Day Per Bus</b>	<b>7.625</b>
<b>Excess Annual Cost Per Bus</b> (\$60 per year per stop)	<b>\$457.50</b>
<b>Total Buses in Fleet</b>	<b>285</b>
 <b>Total Annual Savings</b>	 <b>\$130,388</b>

Note: This report only considers the cost of fuel saved by reducing unscheduled stops. It does not take into account wear and tear on a school bus, maintenance expenses, driver payroll, and other costly factors caused by unscheduled stops. It also does not speculate about the potential savings available from increasing routing efficiencies, as described above, which would be a benefit caused by having more accurate stop data for planning purposes.

### **Reduce Engine Idle Time**

Fuel is one of the greatest ongoing costs associated with pupil transportation. Thus, any reduction to the amount of fuel consumed by the fleet will directly result in immediate savings. The results shown above from reducing route deviation and removing unscheduled bus stops specifically focus on reducing fuel expenses. However, simply reducing the amount of time that buses are stationary with their engines idling can provide a substantial return in savings.

There will always be a certain amount of idle time in any school bus operation. Transportation departments can attempt to minimize wasted fuel by defining an idle time policy (for example, buses should never idle for more than ten minutes at a time). However, without a system that allows transportation staff to actually track idle time, it is virtually impossible to enforce the policy. An EDULOG GPS solution would allow the Lafayette Parish School Board to monitor bus idle time—both historically (through reports)—and also in real time. This would allow the district to enforce an idle time policy: drivers would be aware that idle time is being monitored and therefore would be less likely to violate the policy. And in extreme cases, dispatch can be immediately notified of gross violations in real time (e.g. a bus idling for 45 minutes), allowing them to contact the driver and tell him/her to turn off the engine.



A sample report:

## Idle Time Cost Analysis

Date: 09/16/2010

Bus ID 1323

Event	Actual	Location	Duration	Cost
Idle event	12:44:55 pm	1210 WILLOW RD	18:57	\$ .95

Bus ID 1370

Event	Actual	Location	Duration	Cost
Idle event	08:41:21 am	1207 BURNETTS CHAPEL RD	4:39	\$ .23
Idle event	10:10:37 am	1413 E BRAGG ST	3:21	\$ .17
Idle event	11:07:46 am	1413 E BRAGG ST	24:25	\$1.22
Idle event	02:48:50 pm	2288 ONTARIO ST	4:40	\$ .23

Total Bus : 2

Total Idle Time Cost : \$2.80

**The report above displays any time a bus has idled for more than four minutes. When you see a duration of 4:39 (for instance), the bus was actually idling for 8 minutes and 39 seconds. Using reports such as the one above will allow the district to reduce idling overages.**

It is critical to note the advantages of EDULOG's idle time report. Certainly any GPS vendor can report on idle time usage and the cost savings associated. You'll note that EDULOG's figures below are very conservative (whereas other vendors may suggest much more is available in idle time reduction). The fact is, all GPS vendors will report idle time the same way and therefore cost savings will be enjoyed. **However, it is critical to know where idle time occurs.** Are my idle times problems at the bus garage? Schools? Bus stops? Integration with the routing software is critical to understand the effects and locations of excess idle time. As reported by our GPS clients, the most common place they've seen excessive idle time is not at the bus garage, not at schools, and not at stops. Where the idle time is often the longest is before the first stop on the planned run. Why? Documentation from several clients has shown that when a GPS system and/or payroll system is put in place, drivers will come into work earlier and leave the bus garage or scheduled departure location early. Our clients have found that the bus drivers will go to (or close to) the very first stop on the run and park for 15 minutes or more. In order to correct these underlying issues, knowing where idle time occurs as it relates to the transportation plan is imperative if you are to achieve the best results.



A sample report:

## To/From Garage Times Report

Period from: 9/1/2010 to 10/1/2010

Date	Bus Number	Departure Time From Garage	Return Time To Garage
09/16/2010	1269	06:18:38AM	08:30:15AM
09/16/2010	1323	06:31:32AM	07:06:06AM
09/16/2010	1323	07:23:06AM	09:13:23AM
09/16/2010	1323	11:16:01AM	12:08:30PM
09/16/2010	1323	02:11:43PM	02:56:52PM
09/16/2010	1323	03:18:41PM	05:05:00PM
09/16/2010	1370	06:12:41AM	09:13:35AM
09/16/2010	1370	09:18:15AM	10:20:48AM
09/16/2010	1370	10:44:00AM	12:04:17PM
09/16/2010	1370	02:27:27PM	04:38:07PM
09/16/2010	1381	06:27:12AM	08:41:08AM

**Monitor idle time coupled with the departure and return time to garage.**



The cost of unnecessary idle time is significant. The national average is ½ gallon of fuel used per one hour of idle time (Source: US EPA). The ability of the transportation department to enforce an idle time policy using an EDULOG GPS solution will result in immediate cost savings. Based on the results acquired through the pilot, we have found that there is an average of 11 minutes of idle time that can be reduced each day for each bus.

<b>Minutes Reduced Idle Time Per Day Per Bus</b>	<b>11</b>
<b>Excess Gallons Of Fuel Per Day Per Bus</b>	<b>0.09</b>
(1/2 gallon per 1 hour idling)	
<b>Excess Fuel Cost Per Day Per Bus</b>	<b>\$0.28</b>
(\$3.00 per gallon)	
<b>180 School Days</b>	<b>\$49.50</b>
<b>Total Buses in Fleet</b>	<b>285</b>
 <b>Total Annual Savings</b>	 <b>\$14,108</b>

Note: These figures do not include the occasional gross violations (bus idling for 45 minutes or more) that occur with some regularity.

### Customer Service

Although budgets constantly decrease, the demand for customer service continues to increase. The Lafayette Parish School Board has many entities that will be included in a GPS system implementation. Certainly you'll be able to provide better customer service to parents. Schools will now have instant access to information pertaining to the location of their buses and know what time they arrived or will arrive at school. Parents will enjoy the ability to get an estimated time of arrival each and every morning with real time school bus statistics.



A sample report:

## School Arrival / Departure Report

Date: 09/27/2010 School code: 423 School name: JEFFERSON ELEM

Bus Number	Run ID	Route ID	Event Type	Scheduled	Actual	Condition	Early/Late	School Window	Bef/After
410	562.650	410	Bus Arrived	7:34:00 am	7:36:18 am	On Time	2:00	7:25 AM-7:40 AM	

Date: 09/27/2010 School code: 448 School name: LINCOLN ACADEMY

Bus Number	Run ID	Route ID	Event Type	Scheduled	Actual	Condition	Early/Late	School Window	Bef/After
1269	448.654	1269	Bus Arrived	8:30:00 am	8:16:59 am	Early	-13:00	8:40 AM-8:50 AM	-23:01
1033	448.612	1033	Bus Arrived	8:30:00 am	8:35:01 am	On Time	5:00	8:40 AM-8:50 AM	-4:59
1381	508.601	1381	Bus Arrived	8:45:00 am	8:35:27 am	Early	-10:00	8:40 AM-8:50 AM	-4:33
1033	448.712	1033	Bus Departed	4:20:00 pm	4:27:11 pm	On Time	7:11	4:05 PM-4:15 PM	12:11
1370	448.703	1370	Bus Departed	4:22:00 pm	4:37:56 pm	Late	15:56	4:05 PM-4:15 PM	22:56

Date: 09/27/2010 School code: 478 School name: MURPHEY ELEM

Bus Number	Run ID	Route ID	Event Type	Scheduled	Actual	Condition	Early/Late	School Window	Bef/After
1370	478.720	1370	Bus Departed	2:45:00 pm	2:52:44 pm	On Time	7:44	2:50 PM-3:00 PM	

**You'll note that the above report can be readily available for any building principal or secretary. This of course will drastically reduce the calls to transportation while increasing the level of service you give to all concerned.**

It is important to note the data available in this report. Unlike other systems, EDULOG incorporates within one report multiple pieces of data obtained from multiple systems (field trip scheduling, GPS, routing and scheduling, student information system, etc.). For instance, it is nice to know when a bus arrives at school. It's even better to understand whether it was running early or late. However, knowing the run that serves the school (beyond simply knowing the driver or bus), when it arrived as it relates to bell time windows (that are both district policy and readily available in the EDULOG routing system), and the time before and/or after that window, is much more important and provides increased value. It goes without saying that a simple report of bus arrival times to schools must be integrated beyond the standard level of integration available anywhere else.





A sample report:

### School Arrival / Departure Report (All Early or Late Buses)

Date:	09/01/2010	School code: 319		School name: ANDREWS HIGH					
Bus Number	Run ID	Route ID	Event Type	Scheduled	Actual	Condition	Early/Late	School Window	Bef/After
410	562.650	410	Bus Arrived	8:30:00 am	8:12:20 am	Early	-18:00	8:15 AM-8:30 AM	-2:40
Date:	09/01/2010	School code: 325		School name: AYCOCK MIDDLE					
Bus Number	Run ID	Route ID	Event Type	Scheduled	Actual	Condition	Early/Late	School Window	Bef/After
410	325.750	410	Bus Departed	3:45:00 pm	4:04:17 pm	Late	19:17	3:45 PM-3:55 PM	9:17
Date:	09/01/2010	School code: 331		School name: BLUFORD ELEM					
Bus Number	Run ID	Route ID	Event Type	Scheduled	Actual	Condition	Early/Late	School Window	Bef/After
1033	331.601	1033	Bus Arrived	7:30:00 am	7:19:21 am	Early	-11:00	7:20 AM-7:40 AM	0:39

**Manage by Exception! Don't bother with buses that are on schedule, show only when buses are late/early outside of the pre-determined bell time window.**



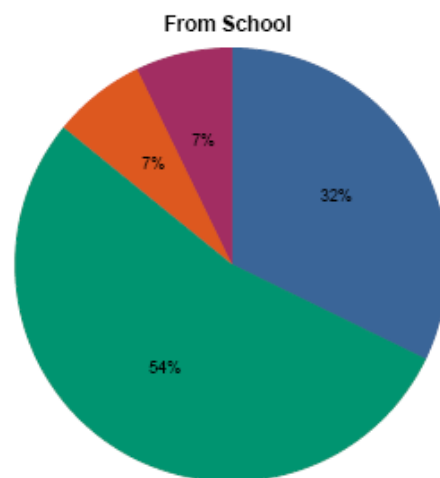
A sample report:

## Driver Performance School On Time Statistics

Period from: 9/1/2010 to 10/1/2010

Driver Name : Watson Myrna      Driver ID : 456789  
School Code : 355      Direction: From School

Status	Number	Percentage
On Time	9	32%
Early	0	0%
1 to 5	0	
6 to 10	0	
11 to 15	0	
16 to 29	0	
30 to 59	0	
61 or greater	0	
Late	15	54%
1 to 5	0	
6 to 10	3	
11 to 15	4	
16 to 19	2	
30 to 59	0	
61 or greater	6	
Skipped	2	7%
No data	2	7%
Total	28	100%



**During the month of September, Myrna was late to school more than half of the time. Only 32% of the time was she on time to school. Is this a routing deficiency or a driver training issue? Skipped and no data likely represents events where Myrna was asked to serve a different school that day.**

### A familiar parent phone call:

Little Johnny's mom has just called in and has a complaint that the bus never came to the stop today. The request is that you come back and pick him up. How often does the parent know the bus number, driver name, or stop location? EDULOG knows this is a common problem. What we've done to correct this is to integrate the student roster of students assigned to stops, runs, routes, and schools within the GPS system. There is no need to research the information in the routing software. Use the EDULOG GPS tools to instantly locate the child's stop and have accurate information on when the stop was made.

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.

What is the district policy in these cases? Of course, the first initial reaction is that you call the driver and ask if he/she made the stop and if so, when? But how often does the driver know at exactly what time a stop was made? And how often will drivers simply say they made the stop at the time and place the route sheet tells them? Either way, the driver knows you don't have a way to prove or disprove what is being said. And in many cases, the parent knows you don't have data to dispute what they say. It's become your word versus the parent's word versus the driver's word. Who is right? Of course, GPS is right, but what good would GPS be if you didn't have the data readily available to locate the student, stop address, bus number, and school instantly and with one click?

A sample screen capture:

The screenshot shows the 'Transportation Manager' software interface. On the left, there is a table of bus runs with columns: BusNumber, Location, Condition, Speed, and Mileage. The main window displays a 'Runs' tab with a table of stops. A 'Passenger List' window is open, showing a table of passengers for a specific stop.

BusNumber	Location	Condition	Speed	Mileage
9744	En route	On Time	27	10.77564
9746	En route	On Time	28	16.78993
9848	En route	On Time	36	18.14792
9950	En route	On Time	12	10.3325
266	En route	On Time	14	23.06837
35	Stop	On Time	0	9.009322
9955	En route	On Time	39	11.49161
101	En route	On Time	46	23.57986
1012	En route	Early	36	19.15973
1013	Garage	On Time	0	0
102	En route	On Time	46	13.68303
104	En route	On Time	26	13.22685
106	Stop	On Time	0	0.0926041
1082	Stop	On Time	0	12.04475

StopID	Location	ScheduledArrival	ActualArrival	CurrentETA	EarlyLate	Condition
OMS.041	JOSLYN RD & MARINA POINTE BLVD	6:50:00 AM	6:52:54 AM	6:52:54 AM	3	On Time
OMS.027	CENTRAL DR & CHAMBERLAIN ST	6:55:00 AM	6:56:34 AM	6:56:34 AM	2	On Time
OMS.040	INDIANWOOD RD & FERNHURST DR	7:00:00 AM	6:59:16 AM	6:59:16 AM	-1	On Time

Passenger List		
For Stop OMS.040001 OMS.003 4		
LastName	FirstName	StopRunID
DIXON	TAYLOR	OMS.040001 OMS.003 4

**Bus 9950 serves the stop at the corner of Indianwood RD & Fernhurst DR at 6:59 on the way to school OMS. Taylor Dixon was the child assigned to this stop. The driver, although early, was early by only 44 seconds.**



### **Reducing Driver Payroll**

The other major ongoing cost for a transportation department aside from fuel is payroll, and the largest group of employees is bus drivers. Naturally, driver payroll costs are an inherent part of every operation, and unfairly scrutinizing or penalizing good drivers does not benefit the district or its drivers. However, protecting the transportation department from payroll abuse can substantially reduce excess payroll costs associated with a minority of drivers attempting to exploit the existing system. Additionally, it has been widely observed by numerous school districts that drivers may “pad their hours” (perhaps even inadvertently or unknowingly) by a small amount each day. Every excess minute counts, and quickly adds up when considering all drivers and multiplying the effect over the course of an entire year.

Existing time and attendance tracking systems make it extremely difficult to reduce this type of payroll slippage—because any comparison of a driver’s logged hours with his/her planned hours must be done manually. As a result, there is no way to recover the estimated extra five to ten minutes that may be lost each day. An EDULOG GPS solution would allow the transportation department to fully integrate the driver time and attendance tracking system with the planned hours drivers are scheduled for. As a result of this integration, exception-based reports can be produced to document driver log-ins/log-outs that exceeded an acceptable time window (e.g. show the drivers that logged-in more than 15 minutes early, or logged-out 30 minutes late). Additionally, comparisons can be made to highlight non-productive time (a driver that took more than 20 minutes on a pre-tip vehicle inspection), as well as slack time (a driver completed the pre-trip inspection but did not start the bus run until 27 minutes later). With access to this valuable information, management can have drivers modify their behavior and dramatically increase the productivity and efficiency of the operation.



A sample report:

Date	Last Name	First Name	Drv ID	Veh ID	Login	Begin Run	Edulog Plan Begin	Edulog Plan versus Bus in Motion	Edulog Plan versus Driver Login	Login versus Bus in Motion
9/1/2010	Capers	Ester	345678	1269	2:19:06 PM	2:24:37 PM	1:28:00 PM	0:56:37	0:51:06	0:05:31
9/2/2010	Capers	Ester	345678	1269	2:19:32 PM	2:29:57 PM	1:28:00 PM	1:01:57	0:51:32	0:10:25
9/7/2010	Capers	Ester	345678	1269	2:18:40 PM	2:20:34 PM	1:28:00 PM	0:52:34	0:50:40	0:01:54
9/8/2010	Capers	Ester	345678	1269	2:18:03 PM	2:33:42 PM	1:28:00 PM	1:05:42	0:50:03	0:15:39
9/9/2010	Capers	Ester	345678	1269	2:22:50 PM	2:24:18 PM	1:28:00 PM	0:56:18	0:54:50	0:01:28
9/10/2010	Capers	Ester	345678	1269	2:18:16 PM	2:21:52 PM	1:28:00 PM	0:53:52	0:50:16	0:03:36
9/13/2010	Capers	Ester	345678	1269	2:13:04 PM	2:18:48 PM	1:28:00 PM	0:50:48	0:45:04	0:05:44
9/14/2010	Capers	Ester	345678	1269	2:10:02 PM	2:17:26 PM	1:28:00 PM	0:49:26	0:42:02	0:07:24
9/1/2010	Carmichael	Terri	123456	410	2:10:24 PM	2:10:43 PM	2:10:00 PM	0:00:43	0:00:24	0:00:19
9/2/2010	Carmichael	Terri	123456	410	2:12:30 PM	2:12:31 PM	2:10:00 PM	0:02:31	0:02:30	0:00:01
9/7/2010	Carmichael	Terri	123456	410	2:15:15 PM	2:15:30 PM	2:10:00 PM	0:05:30	0:05:15	0:00:15
9/8/2010	Carmichael	Terri	123456	410	2:07:10 PM	2:09:45 PM	2:10:00 PM	n/a	n/a	0:02:35
9/9/2010	Carmichael	Terri	123456	410	2:06:52 PM	2:08:12 PM	2:10:00 PM	n/a	n/a	0:01:20
9/10/2010	Carmichael	Terri	123456	410	2:11:13 PM	2:11:24 PM	2:10:00 PM	0:01:24	0:01:13	0:00:11
9/13/2010	Carmichael	Terri	123456	410	2:13:57 PM	2:14:08 PM	2:10:00 PM	0:04:08	0:03:57	0:00:11
9/14/2010	Carmichael	Terri	123456	410	2:03:55 PM	2:19:25 PM	2:10:00 PM	0:09:25	n/a	0:15:30
9/1/2010	Miller	Lynn	234567	1033	2:10:39 PM	2:20:10 PM	2:12:00 PM	0:08:10	n/a	0:09:31
9/2/2010	Miller	Lynn	234567	1033	2:12:45 PM	2:20:10 PM	2:12:00 PM	0:08:10	0:00:45	0:07:25
9/3/2010	Miller	Lynn	234567	1033	2:15:26 PM	2:22:25 PM	2:12:00 PM	0:10:25	0:03:26	0:06:59
9/7/2010	Miller	Lynn	234567	1033	2:18:00 PM	2:22:03 PM	2:12:00 PM	0:10:03	0:06:00	0:04:03
								8:27	6:59	1:40
								0:28	0:26:11	0:05

The above report is a sample of the three drivers that were asked to log-in and log-out for payroll purposes by an EDULOG client district. The above report samples afternoon login times. The report gives you comparisons of when the driver physically logged into the system, compared to when the bus went in motion (GPS), to that of the planned beginning of the run.

**EDULOG Plan vs. Bus in Motion evaluation.** Take note that there are two very different situations, and that both must receive equal attention.

One driver will show you that their bus can leave the garage up to 15 minutes later than what the planning system would have you believe. This is very common. In most cases, this results from the fact that the run/route has been the same for quite a bit of time. However, as the school year progresses, it is common knowledge that fewer and fewer students ride the bus. As we all know, the maximum amount of students you have assigned to stops is always at the beginning of the year: if something is free (such as busing), sign up for it. This is very common logic for parents as they enroll their child at the beginning of the year. They likely will



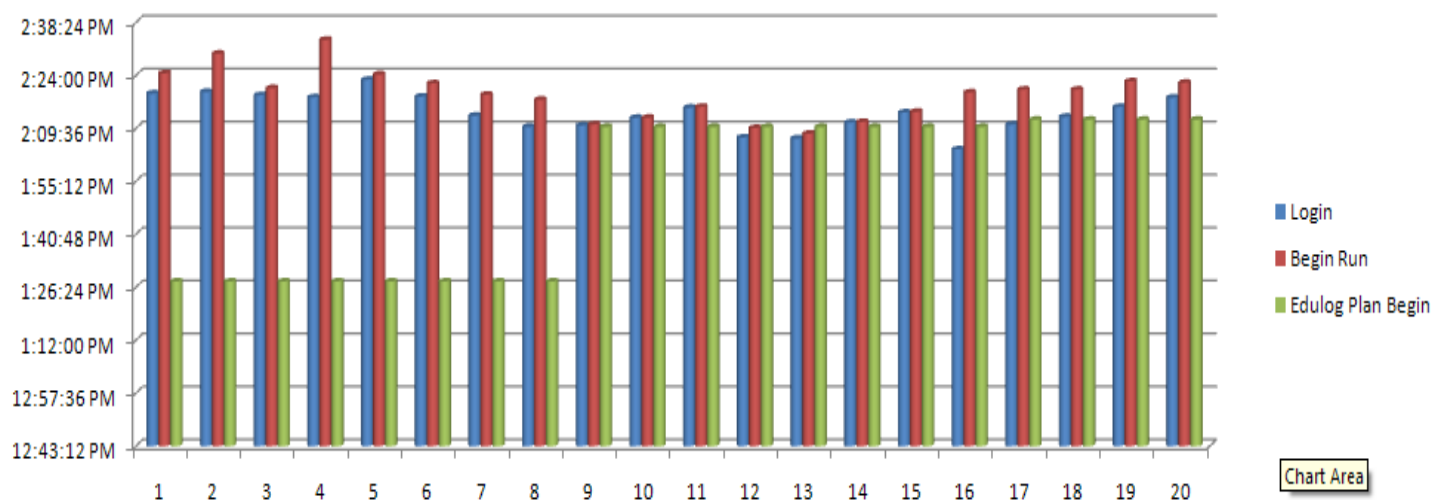


sign up for a bus stop even though they know that they'll get their child to school another way. It's better to be safe and have the stop than to not have it.

One of the major underlying issues with this problem is that it's close to impossible to get driver feedback from each and every route. Many times, drivers are not aware that the fact the route sheets are not accurate compared to what they serve is costing the district money and decreasing the level of service. A driver often knows the best way to proceed with the route. However, they are not as effective at relaying that information to the routing system. Use the GPS and time and attendance system to assist you on this matter.

The other, more serious, issue is when a driver will "pad" his/her hours. In one of the examples above, there is a driver that is logged into the system almost a full hour before the bus actually goes into motion. This is a much more serious situation, but one that can be corrected very easily.

A visual example:



**The bar chart above is similar to the first chart that was analyzed. However, in this case, it is simply a graphical display of the data captured and discussed previously.**

You will notice that drivers have tendencies that are very apparent when you compare the log-in versus log-out time. It's very common for drivers to log-in much earlier than they need to—versus stay logged in longer than they need to. You'll also notice a distinct difference between morning log-in time and afternoon time. The same variance can be seen during afternoon log-out times compared with morning.

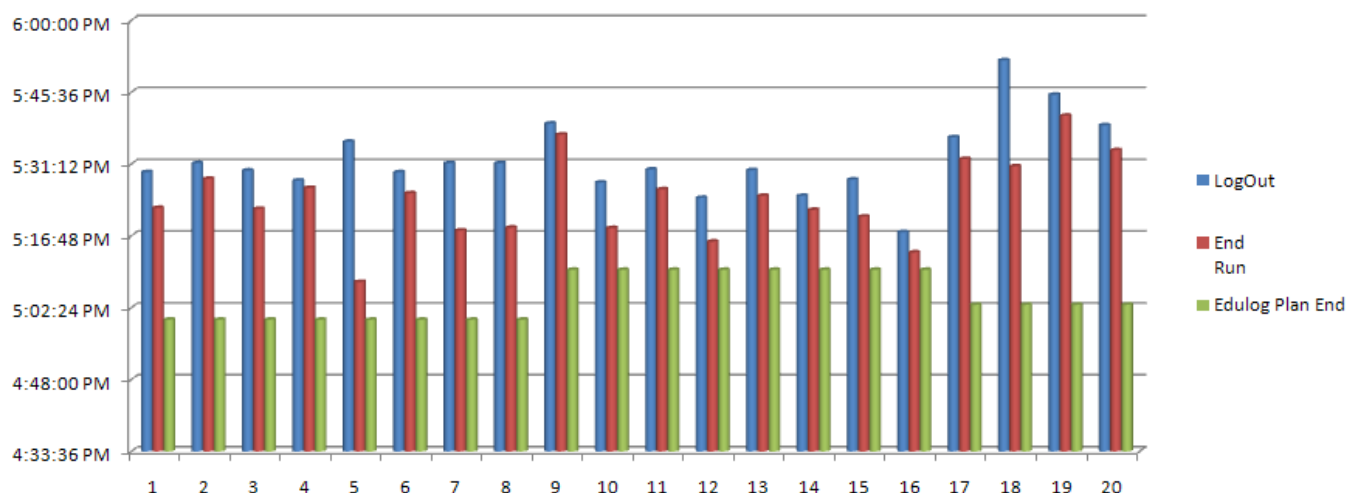
A sample afternoon log-out report:

Date	Last Name	First Name	Drv ID	Veh ID	LogOut	End Run	Edulog Plan End		Edulog Plan versus GPS End Time	Edulog Plan versus Driver Logout	Logout versus GPS End Time
9/1/2010	Capers	Ester	345678	1269	5:29:34 PM	5:22:25 PM	5:00:00 PM		0:22:25	0:29:34	0:07:09
9/2/2010	Capers	Ester	345678	1269	5:31:23 PM	5:28:15 PM	5:00:00 PM		0:28:15	0:31:23	0:03:08
9/7/2010	Capers	Ester	345678	1269	5:29:55 PM	5:22:13 PM	5:00:00 PM		0:22:13	0:29:55	0:07:42
9/8/2010	Capers	Ester	345678	1269	5:27:53 PM	5:26:25 PM	5:00:00 PM		0:26:25	0:27:53	0:01:28
9/9/2010	Capers	Ester	345678	1269	5:35:41 PM	5:07:34 PM	5:00:00 PM		0:07:34	0:35:41	0:28:07
9/10/2010	Capers	Ester	345678	1269	5:29:33 PM	5:25:21 PM	5:00:00 PM		0:25:21	0:29:33	0:04:12
9/13/2010	Capers	Ester	345678	1269	5:31:23 PM	5:17:53 PM	5:00:00 PM		0:17:53	0:31:23	0:13:30
9/14/2010	Capers	Ester	345678	1269	5:31:23 PM	5:18:27 PM	5:00:00 PM		0:18:27	0:31:23	0:12:56
9/1/2010	Carmichael	Terri	123456	410	5:39:19 PM	5:37:06 PM	5:10:00 PM		0:27:06	0:29:19	0:02:13
9/2/2010	Carmichael	Terri	123456	410	5:27:30 PM	5:18:22 PM	5:10:00 PM		0:08:22	0:17:30	0:09:08
9/7/2010	Carmichael	Terri	123456	410	5:30:06 PM	5:26:09 PM	5:10:00 PM		0:16:09	0:20:06	0:03:57
9/8/2010	Carmichael	Terri	123456	410	5:24:25 PM	5:15:39 PM	5:10:00 PM		0:05:39	0:14:25	0:08:46
9/9/2010	Carmichael	Terri	123456	410	5:29:59 PM	5:24:50 PM	5:10:00 PM		0:14:50	0:19:59	0:05:09
9/10/2010	Carmichael	Terri	123456	410	5:24:50 PM	5:22:01 PM	5:10:00 PM		0:12:01	0:14:50	0:02:49
9/13/2010	Carmichael	Terri	123456	410	5:28:05 PM	5:20:40 PM	5:10:00 PM		0:10:40	0:18:05	0:07:25
9/14/2010	Carmichael	Terri	123456	410	5:17:33 PM	5:13:29 PM	5:10:00 PM		0:03:29	0:07:33	0:04:04
9/1/2010	Miller	Lynn	234567	1033	5:36:34 PM	5:32:13 PM	5:03:00 PM		0:29:13	0:33:34	0:04:21
9/2/2010	Miller	Lynn	234567	1033	5:51:59 PM	5:30:45 PM	5:03:00 PM		0:27:45	0:48:59	0:21:14
9/3/2010	Miller	Lynn	234567	1033	5:45:06 PM	5:40:53 PM	5:03:00 PM		0:37:53	0:42:06	0:04:13
9/7/2010	Miller	Lynn	234567	1033	5:38:58 PM	5:33:59 PM	5:03:00 PM		0:30:59	0:35:58	0:04:59
								Sum	6:32	9:09	2:36
								Average	0:19	0:27:27	0:07

Notice that drivers are on the clock for fewer minutes as they end the day. You can clearly see that they are much quicker to log-out and go home for the day than to arrive early and log-in.



A sample graph:



**What does this mean and how do I save money?** As discussed above, there are two very different ways this district was losing money through payroll. One way shows that a correction in the routing data needs to be done. The other shows that driver discipline policies need to be reviewed. However, none of this could have been found or realized without the use of an intelligent time and attendance tracking system. **Comparing when a driver clocks in, versus when the bus went in motion (or left the bus garage), all compared to what was planned, is critical in the goal of reducing operational costs.** The average in both cases shows that 28 minutes of unproductive time is being spent each afternoon before log-in and 19 minutes after log-out.

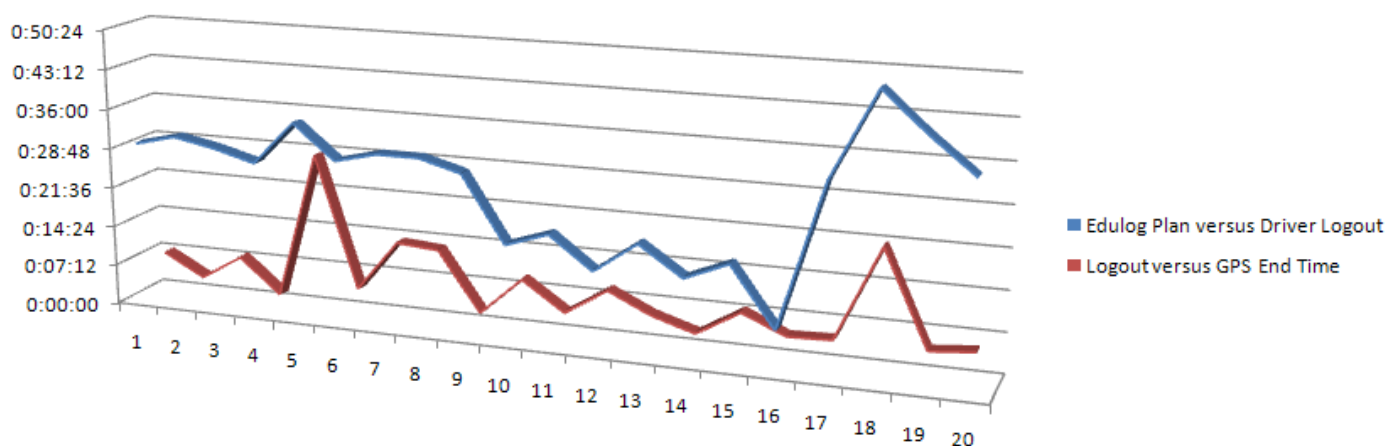
It is not new information to the Lafayette Parish School Board that there are inherent and very large savings that can be obtained through the use of a driver time and attendance tracking system. However, one must also look at the importance of maintaining a good driver base. Cutting staff pay to the bare minimum is not always the solution. Based on the data collected above, it shows the potential for 47 minutes of time savings each day for each driver. The below savings chart was put together with the assumption that half of that time could be saved (23½ minutes—afternoon only). It was the goal in this report to show savings that are absolutely real—and a very conservative take on savings was applied.

Minutes of Wasted Time Reduced Per Driver Per Day	23.5
Average Hourly Driver Pay Rate	\$13.50
Excess Cost Per Driver Per Day	\$5.29
180 School Days	\$951.75
Total Drivers	285
<b>Total Annual Savings</b>	<b>\$271,249</b>

Note: Many school districts have reported a substantial savings of 10% or more in driver payroll as a result of simply announcing to its drivers the introduction of GPS. Basic awareness that tracking will occur can lead to improved driver performance.

Further analysis can be done using the multiple comparisons available with EDULOG's GPS and time and attendance tracking solution.

A sample line chart:



**When you compare the time that a driver processes his/her log-out compared with the planning system, you will see, that on average, a driver is wasting 19 minutes. However, when you compare the log-out versus the GPS end run time, the driver logs-out of the system 7 minutes after the bus has been turned off for the day.**

The report above was produced for informational purposes only. Although there are many ways it proves that savings are available, perhaps what is most important is to understand the data as it relates to driver performance and route efficiency. For instance, the EDULOG routing system indicates that the routes take much longer than the driver actually needs to complete the route. There are many reasons for this, however, the most important and fundamental piece to this is how we got there. Clearly the driver does not make as many stops as the routing coordinator believes need to be made. If you compare the planned route time to the actual route time, you'll see that a driver needs 10% less time to complete the route, on average. You can derive this information from the fact that 10% of the stops in the system are not being served. This clearly shows that you can reduce driver payroll, mileage, wear-and tear on buses, and more by simply comparing this information. You can also take note that on average, the driver logs-out of the system seven minutes after they finished their route. Is this enough time to complete a successful post-trip inspection?

A sample report:

Date	Last Name	First Name	Drv ID	Veh ID	Run Distance (GPS)	Run Distance (Routing)	Increased GPS Mileage	Logged Time (Driver Login)	Run Time (GPS)	Increased Payroll
9/1/2010	Capers	Ester	345678	1269	33.4	31.0	2.4	3:18:55	2:58:17	0:20
9/2/2010	Capers	Ester	345678	1269	35.7	31.0	4.7	3:28:46	02:57:48	0:30
9/7/2010	Capers	Ester	345678	1269	34.4	31.0	3.4	3:23:14	03:01:39	0:21
9/10/2010	Capers	Ester	345678	1269	34.2	31.0	3.2	3:24:11	03:03:29	0:20
9/13/2010	Capers	Ester	345678	1269	34.0	31.0	3.0	3:24:48	02:59:05	0:25
9/14/2010	Capers	Ester	345678	1269	35.3	31.0	4.3	3:22:54	03:01:01	0:21
9/1/2010	Carmichael	Terri	123456	410	41.1	37.0	4.1	03:28:55	03:26:23	0:02
9/2/2010	Carmichael	Terri	123456	410	31.9	37.0	-5.1	03:15:00	03:05:51	0:09
9/7/2010	Carmichael	Terri	123456	410	41.1	37.0	4.1	03:14:51	03:10:39	0:04
9/8/2010	Carmichael	Terri	123456	410	40.2	37.0	3.2	03:17:15	03:05:54	0:11
9/9/2010	Carmichael	Terri	123456	410	41.1	37.0	4.1	03:23:07	03:16:38	0:06
9/10/2010	Carmichael	Terri	123456	410	43.1	37.0	6.1	03:13:37	03:10:37	0:03
9/13/2010	Carmichael	Terri	123456	410	40.5	37.0	3.5	03:14:08	03:06:32	0:07
9/14/2010	Carmichael	Terri	123456	410	38.3	37.0	1.3	03:13:38	02:54:04	0:19
9/1/2010	Miller	Lynn	234567	1033	27.2	20.0	7.2	03:25:55	03:12:03	0:13
9/2/2010	Miller	Lynn	234567	1033	23.3	20.0	3.3	09:47:14	03:10:35	6:36
9/3/2010	Miller	Lynn	234567	1033	19.4	20.0	-0.6	03:29:40	03:18:28	0:11
9/7/2010	Miller	Lynn	234567	1033	28.3	20.0	8.3	03:20:58	03:11:56	0:09
							3.4			0:35

**The report above looks at the difference between GPS and planned mileage. It also compares the difference between actual driver log-in times and recorded GPS drive time. You could also display the planned route time (which was done in a previous example).**

There are many areas where payroll savings can be achieved. Above, we've highlighted only a few of those areas. Two particular areas of interest that were not evaluated from a financial perspective, but are of importance: using a new payroll method and what effects that would have on the district; and the standard practice of rounding up/down for payroll purposes.

School districts use many different methods to pay drivers. You will see school systems using planned route time, manual driver sheets, fixed payroll, salary, and more. Most of the logic behind the chosen method always stems from the fact that there wasn't a system available designed specifically for school bus drivers. There is no question that paying school bus drivers is cumbersome. It is also a question of time. Many that choose to pay drivers a salary do so because it's difficult otherwise to account for drivers. Others that do manual time sheets do so because it's hard to have a machine that would clock drivers: many school systems have buses leaving and departing from multiple locations, which is why driver time management had always been difficult and time-consuming.

EDULOG has brought a solution to the K-12 industry that has moved the punch-in/out machine to the point where drivers first begins their work duties. We've managed to account for driver log-in times, compare them with planned routing and GPS start points, integrate with individual payroll accounting software sys-

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tems, and much more. All of this can only be accomplished through intelligent software design. With EDULOG's long history of software development, we know that each school district will require its own unique way to satisfy driver payroll. We've managed to accomplish any task—large or small—with ease and guaranteed success.

EDULOG introduced driver time and attendance tracking system seven years ago and was the first in the industry to move the time clock machine to the school bus. With more than 30 years of history in the transportation industry, it was well known to us that payroll was a very large cost to school systems and one that is difficult to manage. With our long history, one underlying goal has always been the core motive of EDULOG: how can we save school districts money? Well, it's safe to say we've found a way. Simply ask anyone of our fast growing list of time and attendance tracking clients.

### Conclusions

EDULOG's GPS solutions offer a wide range of benefits that go far beyond the cost savings available to the district. For example, it is difficult to assign a value to the safety and security of children. However, when purely focusing on financial benefits, no other GPS solution can offer the Lafayette Parish School Board the continuing annual cost savings available from EDULOG—because no other system exists that combines both actual GPS data and planned routing and scheduling data into a single system. As this report illustrates, the Lafayette Parish School Board could immediately begin to realize cost savings starting in month one with an EDULOG GPS solution.

<b>Reduced Route Deviation</b>	<b>\$151,262</b>
<b>Reduced Unscheduled Stops</b>	<b>\$130,388</b>
<b>Reduced Engine Idle Time</b>	<b>\$14,108</b>
<b>Reduced Driver Payroll (login/logout)</b>	<b>\$271,249</b>
<b>Total Annual Savings Immediately Available</b>	<b>\$567,007</b>

The financial savings available to the district as illustrated by this report can be quite amazing. *Often the return on investment (ROI) can be so significant that clients discover it's not a question of whether they can afford to have an EDULOG GPS solution, but whether they can afford to be without one.*

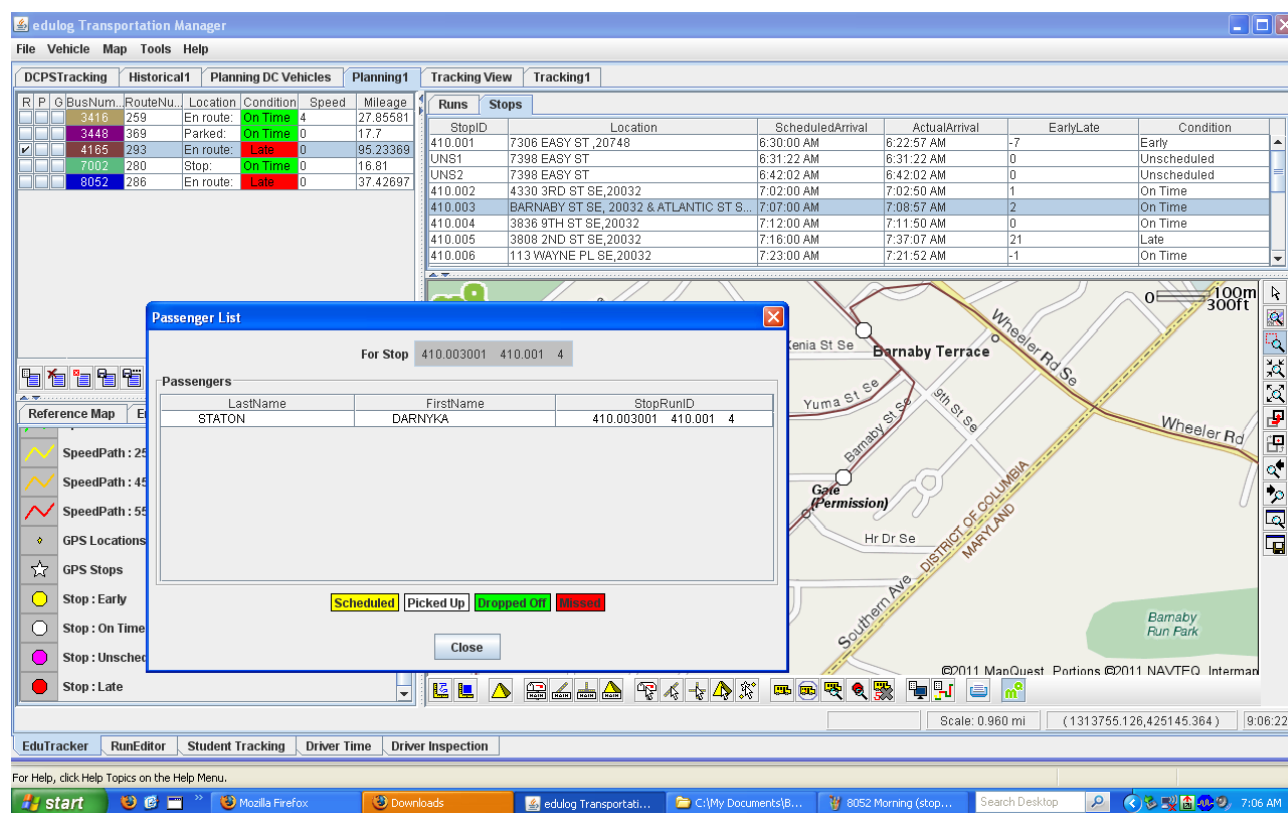


## OPTIONAL EDULOG STUDENT RIDERSHIP MANAGEMENT SYSTEM

The EDULOG student ridership management system can track every individual student's name, time, and location of when the students arrive and depart on and off school buses.

***As EDULOG can demonstrate, our system can manage student ridership management far beyond what any other vendor can offer. For instance, it's very easy to demonstrate which student got on the bus: you simply swipe a card. EDULOG can go much further in its demonstration by providing data that showed children that did not ride the bus as scheduled, loaded and unloaded at the wrong stop and/or wrong bus, rode the bus as a non-eligible rider, and much more.***

No topic related to school bus GPS/AVL has received more attention in recent years than student ridership management. The motivations for automatic student ridership management range from: increasing student safety and security; improving the efficiency of special needs routing; meeting state/federal reporting requirements; and securing Medicaid reimbursement.



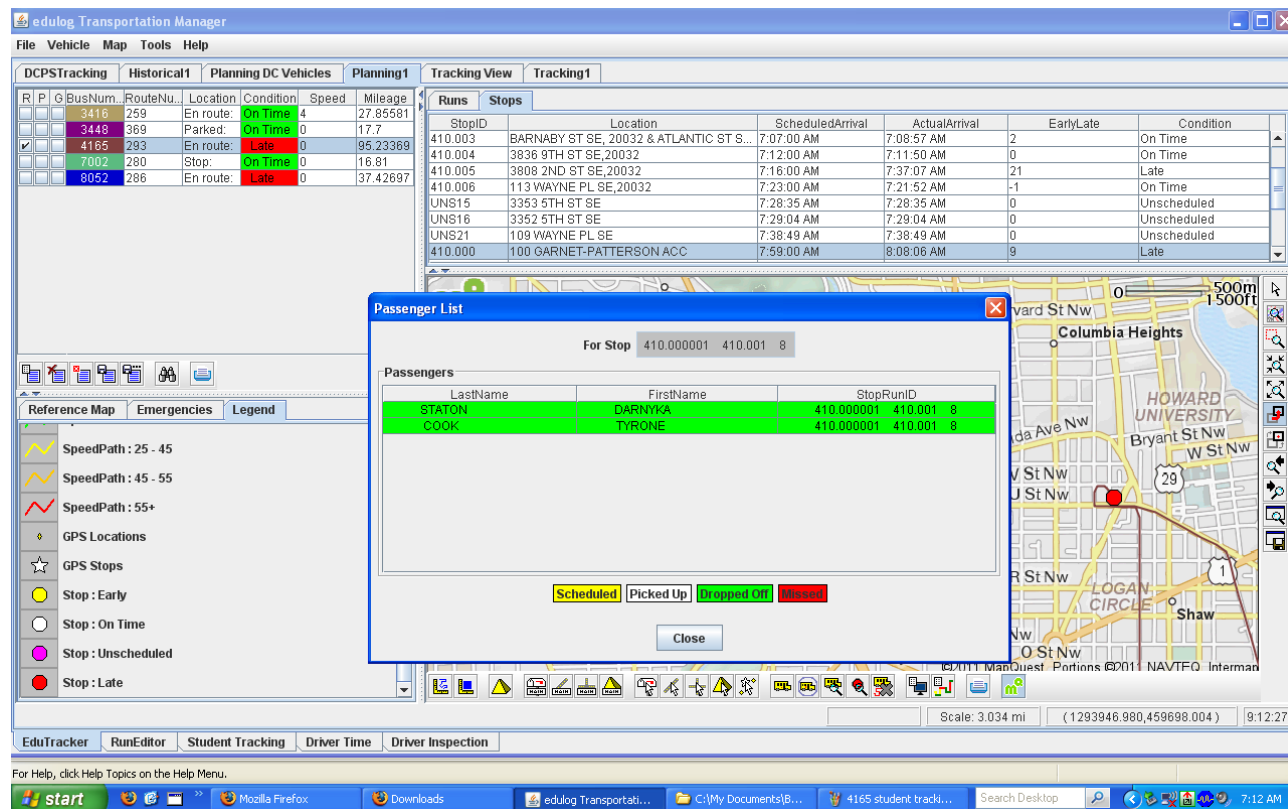
The above screen illustration shows the actual travel path of the bus and the identification of a student who has been confirmed as boarding the bus. Also note that actual versus planned information (the planned information is taken from the routing and scheduling software) is displayed regarding on-time performance.

In keeping with the "one size does not fit all" philosophy, EDULOG's approach to student ridership management has been to design its GPS solutions to offer clients the ability to select from the complete range of student

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tacking options. For many clients, a combination of student ridership management technologies will provide the best fit.

But being a true solution provider means going far beyond simply selling a variety of hardware options. There needs to be accountability and responsibility for the operational success of the overall system—which is directly affected by the selected technology. Therefore, EDULOG works with each individual client to understand and define the unique requirements and expectations for the student ridership management system. Only then can meaningful, objective recommendations be made, and subsequent operational experiences be evaluated with the client.



The above screen illustration shows that two students were dropped off at their school, and that according to the planned information taken from the routing and scheduling system, the bus was nine minutes late.



# eEDULOG Student Tracking

## Student Tracking Made Easy

Student tracking technology should tell you more than just who rode what bus. EDULOG's Student Tracking works with your planned data to offer you real insights into your tracking data, letting you see when students miss stops, get off at the wrong stops, or even board the wrong bus. Plus, accurate tracking integrates with your routing software to give you the tools you need to spot future trends that make your planning better.

Start  
Tracking  
Start  
Knowing

### What if...

You could be sure  
students were  
boarding the right  
bus every day?



### What if...

Tracking were the  
key to finding  
future school bus  
savings?

### What if...

You could spot  
differences  
between your  
transportation  
planning and  
reality instantly?



Do you know where **your students** are?

**Contact EDULOG  
to learn more and  
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# eEDULOG Student Tracking



## Student Tracking Made Easy

EDULOG Student Tracking works with your planned data to offer you real insights into your busing; you'll know when students miss stops, get off on the wrong stops, or even board the wrong buses.



## Know the Details

Use real data to make more accurate planning decisions about the size of the bus you need to send out, whether stops can be consolidated, and even spot ridership trends.



## Safety is In the Cards

EDULOG uses RFID technology that sends student IDs from the bus back to your dispatch, so you always know when and where a child boarded or exited the bus.



## Special Needs Tracking Made Simple

Special needs transportation requires extra attention to be sure students are getting the services they need. EDULOG's detailed reporting also helps simplify Medicaid reimbursement.

## Helping You Make Sense of it All

Rather than making you look through every event, we highlight just the ones that need your attention so you can proactively deal with issues rather than discovering them later.

Looking for Ways to Enhance How Student Tracking Helps Your District? EDULOG's Parent Portal web software integrates with student tracking to help keep parents informed about their child's status automatically!



Call today to learn more about EDULOG Student Tracking and how it can make your job easier.

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## STUDENT RIDERSHIP MANAGEMENT SOFTWARE

As with GPS/AVL, the value of a student ridership management system can be exponentially increased when it is integrated with planned routing data. Rather than simply tracking which students board and exit the bus, clients can compare this information to a list of students assigned to a given bus stop. Not only can dispatch know when a child has exited at an unassigned stop, the driver will know when someone boards the bus who isn't supposed to.

As a true dispatch tool, *EduTracker* allows operators to better manage phone calls from parents and determine with detailed accuracy where their child is located, if/when they were picked up or dropped off, and exactly what time this occurred. Ultimately this allows operators to "manage by exception," rather than being flooded with data that represents business as usual. This unique design makes a wide range of features possible. For example, comparative reports can be generated to show:

- The list of students that rode the wrong bus that day.
- The list of students that got off at the wrong stop that day.

The screenshot displays the EduTracker software interface. On the left, the 'Student Search Options' panel includes search criteria by Name, List (A-Z), School, and Field, with a 'Select a student' list showing names like BRYAN, BRANDON, PEDRO, GUADALUPE, CHRIS, FERNANDA, INDALICIA, and EVERARDO. The main area is divided into 'Student Tag Info' and 'Ridership History'. The 'Student Tag Info' table shows details for Tag ID 000006020A899B, District ID 000000591123, Tag Type, Effective Date 11/19/2010, and End Date 08/20/2011. The 'Ridership History' table, filtered for dates 06/27/2011 to 07/30/2011, provides a detailed log of student trips. It includes columns for Last Name, First Name, Date, Planned Vehicle, Planned Time, Planned RunID, Planned StopID, Actual Vehicle, Actual Time, Actual RunID, Actual StopID, and Exception. The table shows multiple entries for student TORRES-T. BRANDON, with various exceptions such as 'Missed', 'Wrong Stop', 'Unscheduled', and 'Planned'.

Last Name	First Name	Date	Planned Vehicle	Planned Time	Planned RunID	Planned StopID	Actual Vehicle	Actual Time	Actual RunID	Actual StopID	Exception
TORRES-T.	BRANDON	06/27/2011	263321	07:09:00 AM	107.006	107.007	263321	07:09:40 AM	107.006	107.007	Planned
TORRES-T.	BRANDON	06/27/2011	263321	07:46:00 AM	107.006	107.007	263321	07:47:21 AM	107.006	107.004	Unscheduled
TORRES-T.	BRANDON	06/27/2011	263321	07:46:00 AM	107.006	107.007	263321	08:03:50 AM	107.006	107.004	Missed
TORRES-T.	BRANDON	06/27/2011	263321	11:49:00 AM	107.106	107.007	263321	11:33:20 AM	107.106	UNS160	Wrong Stop
TORRES-T.	BRANDON	06/27/2011	263321	07:09:00 AM	107.006	107.007	263321	12:04:06 PM	107.106	UNS181	Unscheduled
TORRES-T.	BRANDON	06/27/2011	263321	07:09:00 AM	107.006	107.007	263321	12:04:06 PM	107.106	UNS181	Unscheduled
TORRES-T.	BRANDON	06/27/2011	263321	07:09:00 AM	107.006	107.007	263321	07:03:16 AM	107.006	UNS26	Wrong Stop
TORRES-T.	BRANDON	06/28/2011	263321	07:46:00 AM	107.006	107.007	263321	07:46:26 AM	107.006	107.004	Unscheduled
TORRES-T.	BRANDON	06/28/2011	263321	07:46:00 AM	107.006	107.007	263321	11:32:10 AM	107.006	UNS181	Unscheduled
TORRES-T.	BRANDON	06/28/2011	263321	07:46:00 AM	107.006	107.007	263321	12:02:01 PM	107.106	UNS213	Wrong Stop
TORRES-T.	BRANDON	06/29/2011	263321	07:09:00 AM	107.006	107.007	263321	07:03:37 AM	107.006	UNS22	Wrong Stop
TORRES-T.	BRANDON	06/29/2011	263321	07:09:00 AM	107.006	107.007	263321	07:44:46 AM	107.006	UNS91	Unscheduled
TORRES-T.	BRANDON	06/29/2011	263321	07:45:00 AM	107.006	107.007	263321	06:58:48 AM	107.006	UNS91	Missed
TORRES-T.	BRANDON	06/29/2011	263321	11:49:00 AM	107.106	107.007	263321	11:38:19 AM	107.106	UNS178	Wrong Stop
TORRES-T.	BRANDON	06/29/2011	263321	11:30:00 AM	107.106	107.007	263321	12:07:35 PM	107.106	UNS196	Unscheduled
TORRES-T.	BRANDON	06/30/2011	263321	07:09:00 AM	107.006	107.007	263321	07:05:23 AM	107.006	107.007	Planned
TORRES-T.	BRANDON	06/30/2011	263321	07:45:00 AM	107.006	107.007	263321	07:45:51 AM	107.006	107.000	Planned
TORRES-T.	BRANDON	06/30/2011	263321	11:30:00 AM	107.106	107.000	263321	11:28:57 AM	107.106	107.000	Planned
TORRES-T.	BRANDON	06/30/2011	263321	11:49:00 AM	107.106	107.007	263321	11:51:34 AM	107.106	UNS572	Wrong Stop
TORRES-T.	BRANDON	07/01/2011	263321	07:05:23 AM	107.006	107.007	263321	07:05:23 AM	107.006	107.007	Unscheduled
TORRES-T.	BRANDON	07/01/2011	263321	07:45:51 AM	107.006	107.000	263321	07:45:51 AM	107.006	107.000	Unscheduled

The above screen illustration from the system at an EDULOG client shows the actual records of one student during a selected time periods. Note that the system tracks when and where and the student entered and exited a bus, the actual bus number, and the comparison between actual and planned times.

By leveraging the ability of real time student ridership management data, comparative analysis can be automatically performed by the *EduTracker* software dynamically. As school buses drive their planned routes the software can monitor exceptions and immediately notify operators of events that require their attention (through pop-ups, color and/or flashing text, icons, etc.)

The proposed system includes student ridership management functions whereby each student entering or departing a bus will be recorded and the status is displayed spatially in real-time using the tracking system as the communication protocol.

Dispatchers also have the ability to utilize the system to drill down, looking at a specific school bus (or individual bus stop) to observe the real time status of which assigned students are: a) waiting for the bus, b) have been picked up and are onboard, c) have been dropped off, and d) were missed at a bus stop.

The ability to perform two-way communication between the GPS/AVL/routing software and the GPS unit on the school bus in real time allows the EDULOG network to be extended to include the buses themselves. This important feature offers flexible options for future expansion such that comparative analysis of actual vs. planned student data can be performed onboard the bus itself at each stop and then communicated to the driver.

Beyond daily operations, further routing efficiencies can occur because the system gives you a better understanding of exactly how many students are actually riding the bus compared to the total number eligible for transportation.

## SCHOOL SYSTEM MANAGEMENT

In order for student ridership management to work, clients need much more than student ridership management hardware and software—they need a cohesive management system. Many clients underestimate the resources needed to successfully maintain and operate a student ridership management system—especially when individual credentials are assigned to students. Questions such as: Who will assign cards to students? Where will this occur? What happens when a card is lost? How will all of this integrate with the existing student database?

Fortunately, EDULOG has developed software tools within *EduTracker* to help clients manage these challenges. Card assignments are as simple as scanning an ID and then the system instantly connects this card number to both the transportation assignment for that student and the student record within the client's student information system.

## STUDENT RIDERSHIP MANAGEMENT REPORTS

On the following pages are several examples of reports available from the EDULOG student ridership management software system.

## Unscheduled Student Pick-Up and Drop-Off Report – By Date

Period From 6/27/2011-6/30/2011

Last Name	First Name	ID	Date	Actual Vehicle	Actual Time	Actual Run ID	Actual Stop ID	Actual Stop Location	Exception
TORRES-TOLENTIN	BRANDON	654	6/28/2011	263321	11:32:10 AM	107.006	UNS181	Stop	Unscheduled
TORRES-TOLENTIN	BRANDON	654	6/27/2011	263321	07:47:21 AM	107.006	107.004	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/28/2011	263327	07:46:55 AM	44.004	44	School	Unscheduled
MENJIVAR	GUSTAVO	1094	6/29/2011	263327	07:46:53 AM	44.004	44	School	Unscheduled
TORRES-TOLENTIN	BRANDON	654	6/28/2011	263321	07:46:26 AM	107.006	107.004	Stop	Unscheduled
TORRES-TOLENTIN	BRANDON	654	6/29/2011	263321	07:44:46 AM	107.006	UNS91	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/29/2011	263327	07:02:04 AM	44.004	44.06	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/28/2011	263327	07:01:46 AM	44.004	44.06	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/30/2011	263327	07:01:01 AM	44.004	44.06	Stop	Unscheduled
LARA	ARTURO	1073	6/29/2011	263319	02:51:47 PM	44.108	44.075	Stop	Unscheduled
LARA	ARTURO	1073	6/28/2011	263319	02:47:37 PM	44.108	44.075	Stop	Unscheduled
LARA	ARTURO	1073	6/27/2011	263319	02:36:58 PM	44.108	44.075	Stop	Unscheduled
GAONA	GRACIELA	1049	6/27/2011	263319	02:24:38 PM	44.108	44.002	Stop	Unscheduled
GAONA	GRACIELA	1049	6/29/2011	263319	02:23:51 PM	44.108	44.002	Stop	Unscheduled
MARTINEZ	CECILIA	1086	6/27/2011	263319	02:19:14 PM	44.108	44.194	Stop	Unscheduled
MARTINEZ	CECILIA	1086	6/29/2011	263319	02:18:20 PM	44.108	44.194	Stop	Unscheduled
MARTINEZ	CECILIA	1086	6/28/2011	263319	02:15:08 PM	44.108	44.194	Stop	Unscheduled
MORA	DANIELA	1098	6/27/2011	263327	02:05:52 PM	44.104	44.06	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/29/2011	263327	02:00:58 PM	44.104	44.06	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/28/2011	263327	02:00:29 PM	44.104	44.06	Stop	Unscheduled
MORA	DANIELA	1098	6/28/2011	263327	02:00:23 PM	44.104	44.06	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/29/2011	263327	01:34:29 PM		UNS108	Stop	Unscheduled
MENJIVAR	GUSTAVO	1094	6/28/2011	263327	01:33:38 PM		UNS112	Stop	Unscheduled
TORRES-TOLENTIN	BRANDON	654	6/29/2011	263321	12:07:35 PM	107.106	UNS196	Stop	Unscheduled
TORRES-TOLENTIN	BRANDON	654	6/27/2011	263321	12:04:06 PM	107.106	UNS181	Stop	Unscheduled



**Student Ridership Report – By Date**  
Period From 6/27/2011 to 6/30/2011  
For Arturo Lara

Date	Planned Vehicle	Planned Time	Planned Stop ID	Planned Location Type	Actual Vehicle	Actual Time	Actual Stop ID	Actual Stop Location	Exception
6/27/2011	263319	06:54:00 AM	44.08	Stop	263319	06:53:11 AM	44.075	Stop	Planned
6/27/2011	263319	07:45:00 AM	44	School	263319	07:54:48 AM	44	School	Planned
6/27/2011	263319	02:29:00 PM	44.08	Stop	263319	01:35:00 PM	UNS116	Stop	Wrong Stop
6/27/2011					263319	02:36:58 PM	44.075	Stop	Unscheduled
6/27/2011	263319	01:30:00 PM	44	School		03:20:34 PM			Missed
6/28/2011	263319	06:54:00 AM	44.08	Stop	263319	06:52:08 AM	44.075	Stop	Planned
6/28/2011	263319	07:45:00 AM	44	School	263319	07:53:31 AM	44	School	Planned
6/28/2011	263319	02:29:00 PM	44.08	Stop	263319	01:34:01 PM	UNS119	Stop	Wrong Stop
6/28/2011					263319	02:47:37 PM	44.075	Stop	Unscheduled
6/28/2011	263319	01:30:00 PM	44	School		03:15:56 PM			Missed
6/29/2011	263319	06:54:00 AM	44.08	Stop	263319	06:57:45 AM	44.075	Stop	Planned
6/29/2011	263319	07:45:00 AM	44	School	263319	07:51:59 AM	44	School	Planned
6/29/2011	263319	02:29:00 PM	44.08	Stop	263319	01:34:42 PM	UNS115	Stop	Wrong Stop
6/29/2011					263319	02:51:47 PM	44.075	Stop	Unscheduled
6/29/2011	263319	01:30:00 PM	44	School		03:15:18 PM			Missed
6/30/2011	263319	06:54:00 AM	44.08	Stop	263319	07:02:35 AM	44.075	Stop	Planned



**Missed Student Report– By Date**  
Period From 6/27/2011-6/30/2011

Last Name	First Name	Student ID	Date	Planned Vehicle	Planned Time	Planned RunID	Planned StopID	Planned Location Type	Actual Time	Exception
TORRES-TOLENTIN	BRANDON	654	6/27/2011	263321	11:30:00 AM	107.106	107	School	12:19:39 PM	Missed
TORRES-TOLENTIN	BRANDON	654	6/28/2011	263321	11:30:00 AM	107.106	107	School	01:18:33 PM	Missed
TORRES-TOLENTIN	BRANDON	654	6/29/2011	263321	11:30:00 AM	107.106	107	School	12:26:53 PM	Missed
GAONA	GRACIELA	1049	6/28/2011	263319	07:45:00 AM	44.008	44	School	07:53:38 AM	Missed
MUNSINGER	CASSANDRA	1099	6/27/2011	263328	07:45:00 AM	44.001	44	School	07:42:01 AM	Missed
MUNSINGER	CASSANDRA	1099	6/28/2011	263328	07:45:00 AM	44.001	44	School	07:37:25 AM	Missed
MUNSINGER	CASSANDRA	1099	6/29/2011	263328	07:45:00 AM	44.001	44	School	07:37:28 AM	Missed
TORRES-TOLENTIN	BRANDON	654	6/27/2011	263321	07:45:00 AM	107.006	107	School	09:03:50 AM	Missed
TORRES-TOLENTIN	BRANDON	654	6/28/2011	263321	07:45:00 AM	107.006	107	School	11:35:51 AM	Missed
TORRES-TOLENTIN	BRANDON	654	6/29/2011	263321	07:45:00 AM	107.006	107	School	08:59:49 AM	Missed
MUNSINGER	CASSANDRA	1099	6/27/2011	263328	06:41:00 AM	44.001	44.065	Stop	06:47:20 AM	Missed
MENJIVAR	GUSTAVO	1094	6/27/2011	263316	04:11:00 PM	46.101	46.004	Stop	07:42:03 AM	Missed
MENJIVAR	GUSTAVO	1094	6/27/2011	263316	04:00:00 PM	46.101	46	School	07:42:03 AM	Missed
MUNSINGER	CASSANDRA	1099	6/27/2011	263328	02:30:00 PM	44.101	44.065	Stop	02:30:37 PM	Missed
MUNSINGER	CASSANDRA	1099	6/28/2011	263328	02:30:00 PM	44.101	44.065	Stop	02:30:27 PM	Missed
MUNSINGER	CASSANDRA	1099	6/29/2011	263328	02:30:00 PM	44.101	44.065	Stop	02:15:48 PM	Missed
GAONA	GRACIELA	1049	6/28/2011	263319	02:12:00 PM	44.108	44.002	Stop	02:22:00 PM	Missed
MORA	DANIELA	1098	6/29/2011	263327	01:56:00 PM	44.104	44.06	Stop	02:01:11 PM	Missed
MORA	DANIELA	1098	6/27/2011	263327	01:30:00 PM	44.104	44	School	02:38:49 PM	Missed
MORA	DANIELA	1098	6/28/2011	263327	01:30:00 PM	44.104	44	School	03:36:22 PM	Missed
MORA	DANIELA	1098	6/29/2011	263327	01:30:00 PM	44.104	44	School	03:31:36 PM	Missed
MARTINEZ	CECILIA	1086	6/27/2011	263319	01:30:00 PM	44.108	44	School	03:20:34 PM	Missed
MARTINEZ	CECILIA	1086	6/28/2011	263319	01:30:00 PM	44.108	44	School	03:15:56 PM	Missed
MARTINEZ	CECILIA	1086	6/29/2011	263319	01:30:00 PM	44.108	44	School	03:15:18 PM	Missed
GAONA	GRACIELA	1049	6/27/2011	263319	01:30:00 PM	44.108	44	School	03:20:34 PM	Missed
GAONA	GRACIELA	1049	6/28/2011	263319	01:30:00 PM	44.108	44	School	03:15:56 PM	Missed
GAONA	GRACIELA	1049	6/29/2011	263319	01:30:00 PM	44.108	44	School	03:15:18 PM	Missed
MUNSINGER	CASSANDRA	1099	6/27/2011	263328	01:30:00 PM	44.101	44	School	06:28:10 PM	Missed
MUNSINGER	CASSANDRA	1099	6/28/2011	263328	01:30:00 PM	44.101	44	School	02:39:38 PM	Missed
MUNSINGER	CASSANDRA	1099	6/29/2011	263328	01:30:00 PM	44.101	44	School	02:25:26 PM	Missed
LARA	ARTURO	1073	6/27/2011	263319	01:30:00 PM	44.108	44	School	03:20:34 PM	Missed



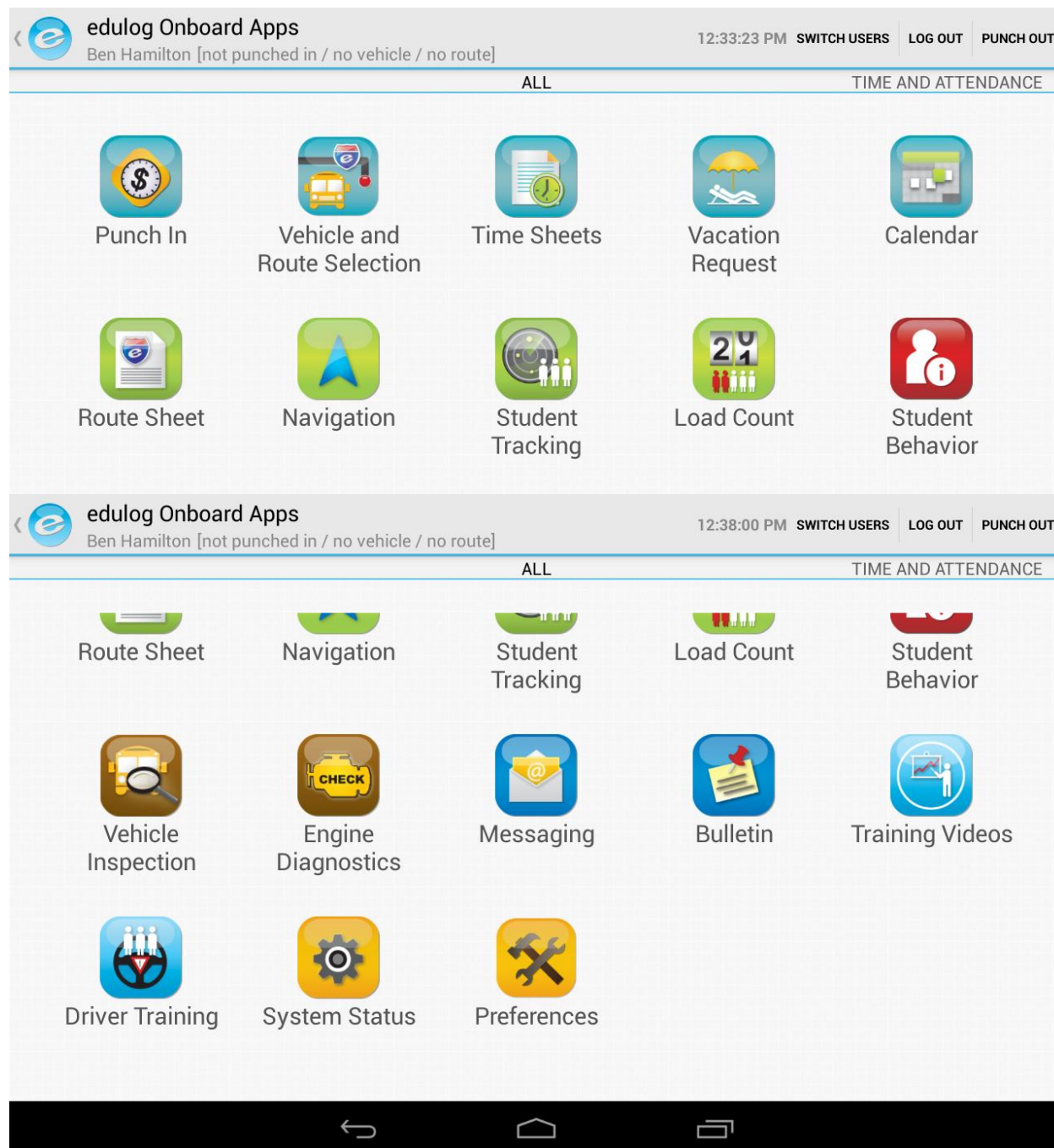


**Basic Student Activity Report – By Date**  
Period From 6/27/2011 To 6/30/2011

Last Name	First Name	Date	Planned Vehicle	Planned Time	Planned StopID	Planned Location Type	Actual Vehicle	Actual Time	Actual Stop ID	Actual Stop Location	Exception
MORA	DANIELA	6/27/2011	263327	06:58:00 AM	44.06	Stop	263327	07:01:57 AM	44.06	Stop	Planned
MORA	DANIELA	6/27/2011	263327	07:45:00 AM	44	School	263327	07:45:40 AM	44	School	Planned
MORA	DANIELA	6/27/2011	263327	01:56:00 PM	44.06	Stop	263327	01:31:17 PM	UNS110	Stop	Wrong Stop
MORA	DANIELA	6/27/2011					263327	02:05:52 PM	44.06	Stop	Unscheduled
MORA	DANIELA	6/27/2011	263327	01:30:00 PM	44	School		02:38:49 PM			Missed
MORA	DANIELA	6/28/2011	263327	06:58:00 AM	44.06	Stop	263327	07:01:40 AM	44.06	Stop	Planned
MORA	DANIELA	6/28/2011	263327	07:45:00 AM	44	School	263327	07:46:41 AM	44	School	Planned
MORA	DANIELA	6/28/2011	263327	01:56:00 PM	44.06	Stop	263327	01:33:31 PM	UNS112	Stop	Wrong Stop
MORA	DANIELA	6/28/2011	263327	01:30:00 PM	44	School		03:36:22 PM			Missed
MORA	DANIELA	6/28/2011					263327	02:00:23 PM	44.06	Stop	Unscheduled
MORA	DANIELA	6/29/2011	263327	06:58:00 AM	44.06	Stop	263327	07:01:59 AM	44.06	Stop	Planned
MORA	DANIELA	6/29/2011	263327	07:45:00 AM	44	School	263327	07:46:37 AM	44	School	Planned
MORA	DANIELA	6/29/2011	263327	01:56:00 PM	44.06	Stop		02:01:11 PM			Missed
MORA	DANIELA	6/29/2011	263327	01:30:00 PM	44	School		03:31:36 PM			Missed
MORA	DANIELA	6/30/2011	263327	06:58:00 AM	44.06	Stop	263327	07:00:52 AM	44.06	Stop	Planned
MARTINEZ	CECILIA	6/27/2011	263319	07:15:00 AM	44.194	Stop	263319	07:15:32 AM	44.194	Stop	Planned
MARTINEZ	CECILIA	6/27/2011	263319	07:45:00 AM	44	School	263319	07:54:32 AM	44	School	Planned
MARTINEZ	CECILIA	6/27/2011	263319	02:05:00 PM	44.194	Stop	263319	01:35:21 PM	UNS116	Stop	Wrong Stop
MARTINEZ	CECILIA	6/27/2011					263319	02:19:14 PM	44.194	Stop	Unscheduled
MARTINEZ	CECILIA	6/27/2011	263319	01:30:00 PM	44	School		03:20:34 PM			Missed
MARTINEZ	CECILIA	6/28/2011	263319	07:15:00 AM	44.194	Stop	263319	07:13:32 AM	44.194	Stop	Planned
MARTINEZ	CECILIA	6/28/2011	263319	07:45:00 AM	44	School	263319	07:53:16 AM	44	School	Planned
MARTINEZ	CECILIA	6/28/2011	263319	02:05:00 PM	44.194	Stop	263319	01:34:07 PM	UNS119	Stop	Wrong Stop
MARTINEZ	CECILIA	6/28/2011					263319	02:15:08 PM	44.194	Stop	Unscheduled
MARTINEZ	CECILIA	6/28/2011	263319	01:30:00 PM	44	School		03:15:56 PM			Missed



## OPTIONAL EDULOG GPS/AVL EXPANSION CAPABILITIES WITH ANDROID TABLETS



## EDULOG ANDROID TABLET/MDT APPS

The EDULOG tablet system brings the power and flexibility of the world's most advanced school transportation management system to drivers and aides on the buses. With the tablet, staff on the buses can (if the requisite software is in place):

- Find their way to all scheduled destinations
- View a list of all passengers for that day including photos, full student information, and any special notes
- View the complete route manifest with driver directions and map display for any given day
- Punch-in and punch-out for timekeeping purposes
- Record activities
- Hear audio driving instructions
- Display maps and driver directions
- Request schedule changes and time-off
- Receive notifications from dispatch

In addition, the EDULOG tablet system can be used to:

- Generate real time electronic inspection reports from drivers and submit data to the dispatch center
- Provide engine diagnostics including fuel consumption, driver performance of functions, and other needed data
- Monitor bus idling according to district-defined limits

All of this is integrated with the proven EDULOG *EduTracker* GPS/AVL system that calculates loaded and unloaded travel miles and validates reports for busing reimbursement from state and federal agencies. When the optional student ridership management system is added, the EDULOG *EduTracker* system also has the ability to automatically track and record student ridership information in real time and both display this information and archive it for reporting and reimbursement purposes. This ridership information includes: student name and ID number, time and location upon entering the vehicle, time and location upon exiting the vehicle, and total ride time for any particular day.



## OPTIONAL EDULOG DRIVER TIME AND ATTENDANCE TRACKING SYSTEM

What EDULOG offers is a system (*eDTA*—electronic Driver Time and Attendance) that is a true intelligent worker management system. It should be noted, however, that the EDULOG *eDTA* system is not intended to be a replacement for a payroll or financial account system.

This is what is fundamentally different, and profoundly revolutionary, about EDULOG's approach to time and attendance tracking:

- The EDULOG system is the only one on the market that can actually compare transportation department staff actual activities (driving a regular bus, driving a field trip, making inspections, etc.) with planned activities and schedules, because only the EDULOG system has an interface with a district's current computerized transportation management system. With a simple log-in, log-out system, you'll know that a driver reported to work at 7:05 a.m., but you won't know, as you would with the EDULOG system, that the driver clocked in at 7:05, took three minutes longer than scheduled to perform the pre-trip inspection, started the bus five minutes late, and arrived at school two minutes late. Only the EDULOG system provides this level of detail and ability to analyze, improve, and/or correct employee performance.
- The EDULOG system is mobile—the recording device goes with the vehicle. Not only is the device right at the worksite, it also allows for tracking, recording, and reporting when the employee is working but is not at a fixed LPSB transportation site—as would be the case on a long extracurricular trip.
- The EDULOG system can be tied to GPS/AVL. Most transportation professionals recognize that the future of school bus management requires GPS/AVL to be integrated fully into all operational aspects, and EDULOG has designed its time and attendance tracking system from the start to take advantage of the time/location/activity data that GPS/AVL provides (such as moving vs. idling, engine on/off, loaded vs. unloaded travel, etc.)

With more than 30 years of experience in the school transportation industry, EDULOG is very familiar with all aspects of how a transportation department operates and its management roles and challenges. And during the last decade, we heard from more and more districts that traditional timekeeping systems could not meet the requirements of a school transportation department. As we listened to districts' experiences, we realized that there are two fundamental flaws in the standard, fixed-point timekeeping process:

- The time clock or other device is in a fixed location, but the people the device is supposed to track are moving all around the district—or many miles away in the case of field or athletic trips. Therefore, the district either had to pay the time it took for drivers, attendants and mechanics to move to and from the time clock and the start and end locations of that day's work, or the district had to rely on paper reports from drivers—and then enter this information manually into the timekeeping software.
- A traditional timekeeping system can record start and end times to the degree of accuracy of the clock, but after that, it cannot record what the person is doing—especially when that person is driving a school bus. For example if a bus driver is supposed to be at work at 7:00 a.m., and that same driver would like to have a cup of coffee before starting the bus run, most likely he or she would clock in at 7:00, then turn on the coffee pot and wait for the brew to be completed. But with the EDULOG system, the driver might think twice about starting the coffee after, as opposed to before, clocking in, because the system will know that at 7:15 the pre-trip inspection needs to be completed and the driver has to record when he/she performed this task.



The screenshot displays the EDULOG Transportation Manager software interface. The main window is divided into several sections. On the left, there is a 'Drivers' list with columns for Last Name, First Name, Employee ID, and Status. The list includes drivers such as Beth Stackhouse, Carla Bryant, Chris Anderson, Clayton Hobbs, David Antrim, David Unverzagt, Debbie Adams, Debbie Bessler, Douglas Taylor, Gary Orr, Jared Nethers, Jay Smith, Jeffrey Little, Jimmy Hammock, Jimmy Smith, John Mesarch, Kate Bowman, Kathleen Stethem, Ken Colson, Larry Glasgow, Loretta Alexander, Michele Minshall, and Pamela Rowman. Below the list are buttons for 'Certification', 'Training', 'Calendar', 'Substitute driver', 'Login monitor', and 'Logout monitor'. On the right, there is a 'Personnel Info' form with fields for Last Name, First Name, Middle Initial, Employee ID, Job Description, Department, Work Group, Job Class, Status, Home Phone, and Email. In the center, a 'Driver Time Sheet Entries' dialog box is open, showing a table of time sheet entries for Driver Clayton (ID E3244). The table has columns for Event and Time. The entries include Login (06:33:00 AM), Inspection begin (06:35:23 AM), Inspection end (06:46:25 AM), Start route (06:54:25 AM), Child check begin (07:32:44 AM), Break begin (09:34:03 AM), Break end (09:39:12 AM), End route (10:26:12 AM), and Logout (10:42:12 AM). The 'Child check begin' entry is highlighted. Below the table is a 'Refresh Rate' dropdown set to 'Refresh Now' and a 'Close' button. The bottom of the window shows a tabbed interface with 'EduTracker', 'RunEditor', 'UnitManagement', and 'Driver Management' tabs.

The next piece of the solution was to integrate what actually is happening with what is supposed to happen. To do this, EDULOG decided it was crucial to have the time and attendance information be compared against planned activities—start and end of pre- and post-trip inspections, start and end times of loaded runs and also unloaded driving time; breaks, actual times on field trips and athletic events. In addition, we recognized the importance of having more information available than what can be captured by a traditional timekeeping system: is the driver with the usually assigned bus, or is this a substitution? Does the driver's actual time on a run correspond to the expected time (taken from a routing and scheduling system databases)? Is the driver behind schedule and needs help?

Also, there is immediacy with the EDULOG approach that is missing from traditional timekeeping systems—in which the data is usually examined only at the end of each pay period. With the EDULOG system, you can know immediately when an activity has started and ended, and if a person is following the schedule or not—allowing corrective action to be taken in a timely manner, instead of perhaps weeks after the action.

The proposed EDULOG eDTA system will assist with the automation of the payroll process. The following are descriptions of the Driver Time and Attendance reports.

**Billing Type Summary Report** – Lists the billing type totals for each district over the date range you enter. The report includes the number of logins for each billing type, the total and adjusted hours for each billing type, and the total number of hours for the district. If you wish, you can filter records by District, Job Class, Group, and/or Billing Type. The report is broken down by district.



**District Summary of Employee Hours per Billing Type** – Lists the total hours for each billing type for the drivers you select over the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type if you wish. The report is grouped by district, then by billing type, then sorted by driver name.

**Driver Activity Report with Accumulated Hours in Week** – Lists the drivers from the list you select who have more than or less than a certain number of logged hours for the week(s) during the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type. The report is sorted by date, then by driver name and includes the beginning and ending dates for each week.

**Driver Inspection Reports** – List the inspection times for the drivers/vehicles you select over the date range you enter. It lists each run on a separate line, with totals for each run at the end of the line and grand totals at the end of the report. You can filter records by District, Job Class, Group, and/or Billing Type. The two report options allow you to sort the report first by date or by driver. In both versions, you also have the option of sorting by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts.

**Driver Performance: Driver Non-Productive Time Report** – Lists information on the non-productive time for each run made by the selected drivers/vehicles over the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish. The report includes each run on a separate line, with totals at the end of the line and grand totals at the end of the report. It is sorted by driver, then by date.

**Driver Time Sheet Report** – Lists payroll information for the drivers you select over the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish. The report is grouped by driver, then by date and includes the drivers' total logged time for each billing event.

**Driver's License Expiration Report** – Lists which of the selected drivers' licenses will expire by a certain date or within 90, 60, or 30 days. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish.



# eEDULOGeDTA

## Driver Time and Attendance Tracking System

Why settle for just a time clock? EDULOG offers a complete staff management solution that's been built from the ground up to not only track time, but also to help you track driver location, performance, and even assist with daily fleet maintenance checks. EDULOG Driver Time and Attendance software is built to work for you, helping improve driver performance and save money by showing you a complete picture.

Start  
Tracking  
Start  
Knowing

### What if...

Your time clock  
software integrated  
seamlessly with  
your payroll  
system?



### What if...

Your time clock  
worked to actively  
help you save  
money?

### What if...

You could track  
locations and  
information not just  
by bus, but by  
driver?



**Contact EDULOG  
to learn more and  
receive a FREE demo!**

866.340.3896  
[www.edulog.com](http://www.edulog.com)



Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.

# eEDULOGeDTA



## Rolling With the Punches

eDTA is a web-based interface that lets drivers clock in at the bus, check their schedules, and receive real-time updates on their routes.



## It's About Time

Track and report different pay rates for different jobs with eDTA, so when your driver has to put on a different hat, you're able to painlessly assign the correct code for the job.



## Location, Location, Location

When you integrate eDTA with a school bus GPS solution, you can easily improve performance by viewing driving patterns over time to quickly see which drivers are meeting their goals and which drivers need extra attention.



## Safety First (and Second)

Not only does eDTA give you options for inspection and sleeping child check, it's built from the ground up to work with fleet inspection and maintenance systems like Zonar's eVIR.

### Tablet Technology Makes Managing Easier

Increase driver accuracy, communication, and efficiency by putting EDULOG's suite of transportation apps into their hands.



Call today to learn how EDULOG eDTA makes your job easier.

**eEDULOG** | 866.340.3896 | [www.edulog.com](http://www.edulog.com)



Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.



**Employee Billing Type Reports** – Lists the logged billing type hours for each day for the drivers you select over the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish. The report is grouped by driver, then sorted by date and includes the drivers' total logged time for each day. The Employee Billing Type Summary Report lists the number of billing types and the actual and adjusted hours for each driver over the date range.

**Employee Timecard Report** – Lists the timecard entries for the drivers you select over the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish. The report is grouped by driver, then sorted by date and includes the vehicle IDs, billing types (events) and log times.

**Login/Logout Deviation Summary Report** – Lists the login and logout deviation results for the drivers/vehicles you select over the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish. The report calculates the total deviation for each day and lists totals for the period for each driver. The report is sorted by driver name, then by date. To determine login deviations, the system calculates the time before the run (Beg Run time minus the Login Time), extra time (Time Before Run minus Pre-trip Time), the amount of time that the driver is late or early (Planned Beginning minus the Beg Run), and the deviation (Extra Time minus the Late/Early time). To determine logout deviations, the system calculates the time after the run (Logout time minus End Run), extra time (Time After Run minus Post-trip Time), the amount of time that the driver is late or early (Planned End minus the End Run), and the deviation (Extra Time minus the Late/Early time).

**Missed Logout Report** – Lists any missing logouts (logins without matching logouts) for the drivers you select over the date range you enter. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish.

**Planning In Out Report** – Lists actual versus planned log times for the drivers you select over the date range you enter. The report includes dates, bus numbers, routes, and the log in and log out times for the AM, Noon, and PM. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish.

**Planning In Out Deviation Report** – Lists the difference between the actual versus planned log times for the drivers you select over the date range you enter. The report includes dates, bus numbers, routes, the total logged hours, the total planned hours, and the deviation (over or under) the planned hours. You can filter records by District, Job Class, Group, and/or Billing Type. You have the option of sorting the report by driver name or ID, inserting page breaks between drivers, and including employees without logins or logouts if you wish.

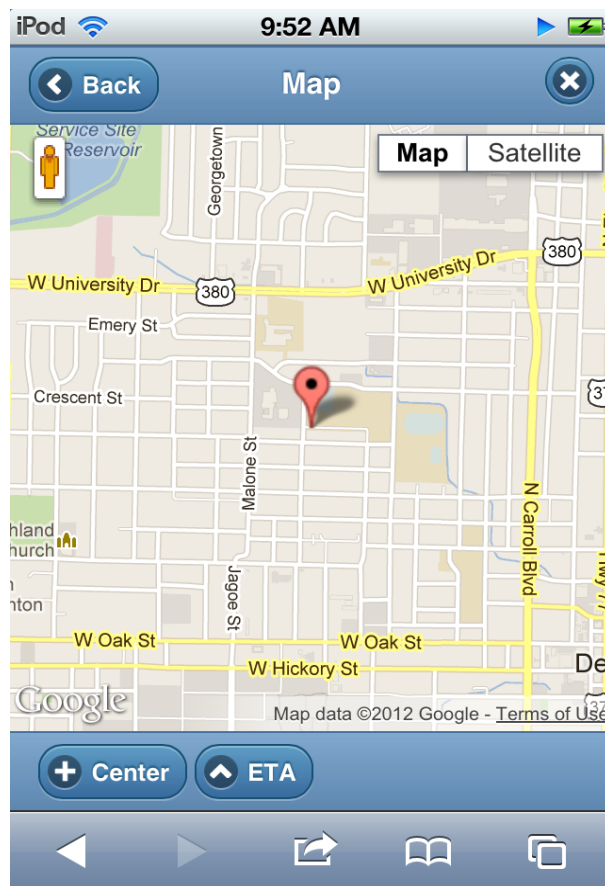
### Interfaces with Payroll Systems

We have working interfaces with the K12 Enterprise system (formerly Sartox) and ISIS, are entering the testing phase with the SunGard IFAS systems, and are developing the interface with Tyler Technology's Munis.



## OPTIONAL EDULOG PARENT PORTAL SYSTEM FOR TRACKING BUSES WITH GPS

A screenshot of a web browser displaying the 'Add Student' form. The browser address bar shows '172.16.129.32:8080/edulog/par/show'. The form has a blue header with 'Add Student' and a 'Back' button. Below the header, the 'Add Student Information:' section includes fields for 'First Name' (Chelsey), 'Last Name' (Adams), 'Student ID' (123), 'Birth Date' (2000-04-01), 'Select a School' (GRANT ELEMENTARY (102)), 'SchoolCode' (102), and 'Grade' (a dropdown menu). An 'Add Student' button is at the bottom of the form. The 'edulog' logo is visible at the bottom of the page.

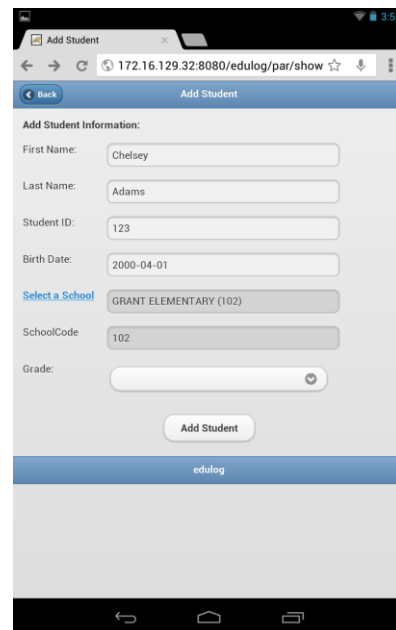
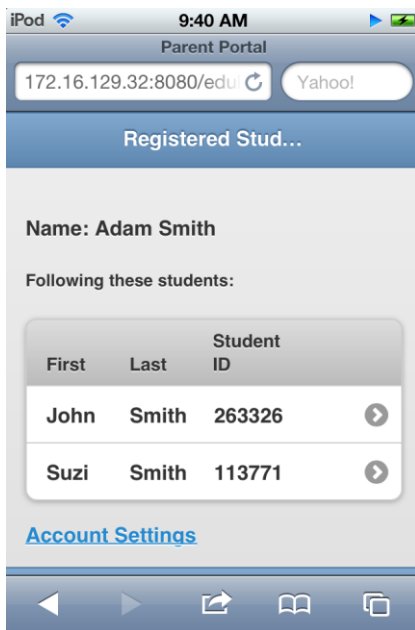
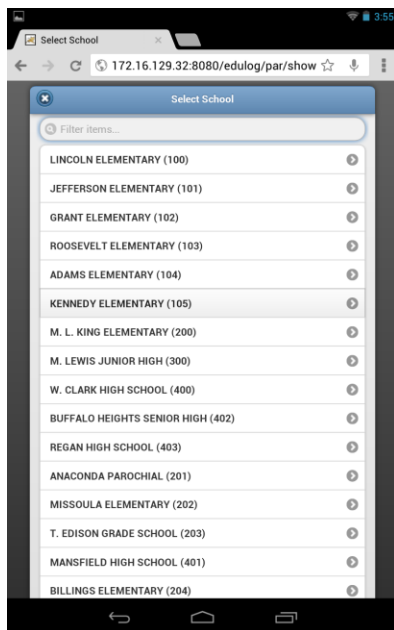


One of EDULOG's newest offering in its suite of GPS mobile application products is *Parent Portal*. This program allows parents or guardians to track the real-time locations of the vehicles used to transport their children. They can also examine the transportation times (both actual and planned) for the entire day. If the children are en-route to a location, *Parent Portal* provides the current location and the estimated time of arrival. You can display the run on a map to see the actual path of the vehicle up to that point, as well as the planned directions for the run and the location of the student's stop. As with all of our applications, *Parent Portal* has many safeguards built into the system to ensure that only authorized users have access to student information.





*Parent Portal* can also be used to send automated text messages to parents to notify them when a bus is expected to be late. This automatic notification capability is not just limited to regularly scheduled buses—it can also be used with any sort of extracurricular bus run such as a field trip or athletic event busing.



## ON-VEHICLE HARDWARE DESCRIPTIONS

On the following pages can be found descriptions of the on-vehicle hardware that would be supplied: the LMU GPS device, the CalAmp MDT-7 Android tablet for the optional driver and aide time and attendance tracking system, and the HID ProxPro RFID reader (if the optional student ridership management system is implemented). Please note that not all of the functions or capabilities described in following material are proposed by EDULOG because they may refer to systems for applications not related to school buses or are based on systems not offered by EDULOG.





### EXPERIENCE THE ADVANTAGE

- GSM/GPRS, CDMA 1xRTT, or HSPA configurations
- Dual reporting 20,000 buffered message log
- Built-in 3-axis accelerometer for driver behavior, motion sensing, hard braking, impact detection
- 32 built-in geo-fences, plus any combination of circle or polygon zones, up to 5400 points
- Web-based device management diagnostic tools
- Garmin®, MDT, and other advanced peripherals support
- Power sleep modes
- Comprehensive I/O system
- Switched power serial ports

CalAmp's flagship LMU-4200 product has the features, expandability, and flexibility with the intelligence to meet all customer's ever changing needs in fleet management. The LMU-4200 offers a full set of features, comprehensive I/O system and expandable accessories that make it an industry leading value proposition. The LMU-4200 expandability and flexibility lowers the cost of delivering, supporting, and growing fleet management solutions.

### COMPETITIVE PRICE, COMPETITIVE TECHNOLOGY, COMPETITIVE EDGE

The LMU-4200 is designed to support customers needing an array of vehicle interfaces. For example, the serial ports supply switchable power at selectable voltages to ease the installation of peripheral data devices. The optional JPOD™ ECU (Engine Control Unit) interface reads and transmits heavy-duty engine condition and performance data such as engine temperature along with the fault codes to provide the best possible real-time picture of vehicle health.

### FLEXIBILITY

The LMU-4200 employs CalAmp's industry leading on-board alert engine, PEG™ (Programmable Event Generator). This advanced engine monitors external conditions and supports customer-defined exception-based rules to help meet the needs of your application. PEG continuously monitors the vehicle environment and responds instantaneously to pre-defined threshold conditions related to time, date, motion, location, geo-zone, input and other event combinations. With PEG, your unique application will meet demanding customer requirements. This behavior can be programmed by CalAmp before shipment, at a customer's facility, or over-the-air once the unit has been fielded.

### OVER-THE-AIR SERVICEABILITY

The LMU-4200 also leverages CalAmp's industry leading over-the-air device management and maintenance system, PULS™ (Programming, Updates, and Logistics System). Configuration parameters, PEG rules, and firmware can all be updated over the air. PULS offers out-of-the-box hands free configuration and automatic post-installation upgrades. You can also monitor unit health status across your customers' fleets to quickly identify issues before they become expensive problems.





## LMU-4200 SPECIFICATIONS

### GPS

Location Technology	50 channel GPS (with SBAS) SBAS: WAAS, EGNOS, MSAS, GAGAN
Location Accuracy	2.0 meter CEP (with SBAS)
Tracking Sensitivity	-162dBm
Acquisition Sensitivity	-147dBm
Kick Start	3 sec @ -130 dBm
AGPS Capable	

### CELLULAR

Data Support	SMS, GPRS, CDMA 1xRTT or HSPA packet data
GSM/GPRS Quad-Band	850/900/1800/1900 MHz
GSM/GPRS Output Power	Class 4 (2 Watts) 850/900 bands Class 1 (1 Watt) 1800/1900 bands
CDMA Dual-Band	800/1900 MHz
CDMA Output Power	800: +24 dBm 1900: +24 dBm
HSPA/UMTS Dual-Band	900/2100 MHz (bands VIII, I) or 850/1900 MHz (bands V, II) 3GPP release 6 5.6 Mbps upload, 7.2 Mbps download
GSM/GPRS/EDGE Fallback	850/900/1800/1900 quad-band GPRS class 12, EDGE MCS1-MCS9

### COMPREHENSIVE I/O

Digital Ignition Inputs	1 fixed bias
Digital Inputs	7 (high/low selectable 0-30 VDC)
Digital Outputs	5 (open collector relay 150mA)
Current Limited Outputs	2 (20mA)
A/D Inputs	4 (0 - 30VDC, +/-0.1V accuracy)
1-Wire* Interface	2 (driver ID, temperature sense)
Status LEDs	GPS and cellular

### CERTIFICATIONS

Fully certified FCC, CE, IC, PTCRB, Applicable Carriers

### ENVIRONMENTAL

Temperature	-30° to +75° C (operating) -40° to +85° C (storage)
Humidity	95%RH @ 50° C non-condensing
Shock and Vibration	U.S. Military Standards 202G and 810F, SAE J1455
EMC/EMI	SAE J1113

### PHYSICAL

Dimensions	4.3 x 3.2 x 0.86", (110 x 81 x 22mm)
Weight	4 oz, (113 g)

### About CalAmp

CalAmp Corp. (NASDAQ: CAMP) is a proven leader in providing wireless communications solutions to a broad array of vertical market applications and customers. CalAmp's extensive portfolio of intelligent communications devices, robust and scalable cloud service platform, and targeted software applications streamline otherwise complex machine-to-machine (M2M) deployments. These solutions enable customers to optimize their operations by collecting, monitoring and efficiently reporting business critical data and desired intelligence from high-value remote assets. For more information, please visit [www.calamp.com](http://www.calamp.com).

### ELECTRICAL

Operating Voltage	6-32 VDC
Power Consumption	4 mA @ 12 V (deep sleep) 10 mA @ 12 V (sleep on network with SMS) 20 mA @ 12 V (sleep on network with GPRS) 70 mA @ 12 V (active tracking)

### CONNECTORS, SIM ACCESS

SIM Access	Internal
External Cellular	SMC
External GPS	SMA (with tamper monitoring, 3.0v)
WiFi Option	RP-SMA
Vehicle Bus Option	DB-15
4-Pin Molex	Power, ground, ignition, A/D
Two 5-Pin Molex	Switched power serial
16-Pin Molex	Expansion port
22-Pin Molex	I/O connection

### MOUNTING

Tie-wrap, adhesive, or velcro  
Screw mounting bracket

### OPTIONAL FEATURES/FUNCTIONS

- External antennas (GPS, cellular, combined GPS/cellular)
- Serial adapter cable RS-232 8-wire (PPP, AT cCommands, NMEA GPS output)
- JPOD dongle for truck ECU interface
- Connectorized I/O wiring harnesses
- Built-in or external backup batteries

### DEVELOPMENT SUPPORT OPTIONS

- Customized hardware and software development available on request

### CalAmp Corp.

1401 N. Rice Avenue, Oxnard, CA 93030  
T: 805.987.9000 | F: 805.987.8359  
[www.calamp.com](http://www.calamp.com)

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2

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## MDT-7™

### Android Mobile Display Terminal

CalAmp's MDT-7 is a 7" Android™ based Mobile Display Terminal (MDT) with Wi-Fi and Bluetooth capabilities for in-vehicle communications applications that interface with a variety of application targeting remote and mobile personnel.

Designed to be tightly coupled with a CalAmp in-vehicle wireless communications device, the MDT-7 serves as a powerful user interface in an integrated mobile communications system. Customers can develop Android OS-based applications or license applications from CalAmp and/or its development community to optimize value to long-haul trucking, local fleet, asset delivery, and mobile workforce management.

### INNOVATIVE, ECONOMICAL SOLUTION

This device has a small, rugged design for both wired and wireless connectivity with onboard memory and micro SD support as well as front and rear facing cameras and a 7" multi-point touch-screen display. In addition, the ruggedized shock-absorbing silicon case with tethered vehicle dock and CalAmp's patent-pending triple-axis accelerometer technology and the GPS receiver, allow the MDT-7 to support applications to be ported or developed specifically for your business while providing an economical device for the mobile worker.

The MDT-7 platform centralizes workflow applications which reduces driver paperwork, integrates driver dispatching and messaging, and communicates critical information from the driver and vehicle directly back to your business information systems. Messages and captured information are transported across the cellular network via a connected CalAmp LMU modem.

### VERSATILITY

The MDT-7 utilizes the CalAmp Mobile Framework (CMF) software to provide the interface to CalAmp's industry leading advanced on-board alert engine PEG™ and comprehensive management and maintenance system PULS™. The versatile unit's embedded software includes base programs for mapping and navigation, and also supports premium applications such as dispatch and routing, driver/worker logging, and other targeted applications.

### OVER-THE-AIR SERVICEABILITY

The MDT-7 leverages CalAmp's management and maintenance system, PULS™ (Programming, Updates, and Logistics System), for over-the-air installation of new applications.

### Experience The Advantage

- 7" Touchscreen Display
- Ruggedized shock-absorbing silicon case
- Tethered vehicle dock
- Android™ OS (Jelly Bean)
- 1 GB DDR3 RAM with Micro SD Card Slot
- 802.11 b/g/n WiFi
- Bluetooth 2.1 + EDR
- Built-in front and rear facing cameras
- Integrated GPS
- 2000mAh Li-polymer battery
- CalAmp Mobile Framework application interface

Datasheet

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## MDT-7 SPECIFICATIONS

### GENERAL

Operating System	Android™ 4.2.2 (Jelly Bean)
Processor	1.5 GHz Cortex A9 Dual-Core Processor
Memory and Storage	1 GB DDR3 Internal RAM; 8 GB Internal Flash; Micro SD Card Slot - Support up to 32GB flash
Display	7" 1024x600 LCD multi touch-five point, capacitive G+G

### CONNECTIVITY

Serial Interface	USB 2.0
Wireless	WiFi 802.11 b/g/n Bluetooth 2.1 + EDR

### FEATURES

Camera	2MP Rear, 0.3 MP Front
G-Sensor	8g 3 axis digital accelerometer
Speaker	2 watt stereo speaker, 80Hz-10kHz
Microphone	-40dBV sensitivity, 120Hz-10kHz

### VALUE ADDED APPLICATIONS

- CalAmp Mobile Framework Driver
- Messaging
- Job Dispatch
- Camera Application
- Sygic 13 offline Navigation (optional)
- Online navigation options
- VOIP
- Video

### GPS

Location Technology	24 channel GPS (with SBAS) SBAS: WAAS, EGNOS, MSAS, GAGAN AGPS Capable
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### ELECTRICAL

Operating Voltage	9-36V automotive supply through dock; 5 V mini USB connector Li-polymer Battery 2000mAh 3.7V internal battery
Operating Modes	running, stand by, deep sleep 1 hour battery life 3 hour charge time

### MECHANICAL

Dimensions	210 x 145 x 26 mm
Weight	510g
Enclosure	Ruggedized IP53 Silicon Case
Connectors	Headphone; Mini USB OTG; Internal SD Card Slot
Hard Keys	On/Off; Volume +/-
Mounting	MDT Dock with One-Touch quick release button; 9-36V automotive supply through dock; Simple snap connect; Connects with multiple standard mounting solutions

### ENVIRONMENTAL

Temperature	-20° to +60° C (operating) -30° to +70° C (storage)
Shock and Vibration	SAE J1455

#### About CalAmp

CalAmp (NASDAQ: CAMP) is a proven leader in providing wireless communications solutions to a broad array of vertical market applications and customers. CalAmp's extensive portfolio of intelligent communications devices, robust and scalable cloud service platform, and targeted software applications streamline otherwise complex machine-to-machine (M2M) deployments. These solutions enable customers to optimize their operations by collecting, monitoring and efficiently reporting business-critical data and desired intelligence from high-value remote assets. For more information, please visit [www.calamp.com](http://www.calamp.com).

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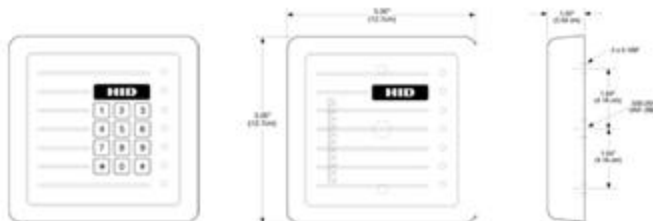
PHYSICAL ACCESS SOLUTIONS



125 KHZ VERSATILE PROXIMITY CARD READER

The ProxPro® proximity card reader's weatherproof design and architecturally attractive enclosure allows easy mounting indoors or out. The ProxPro Reader is ideal for applications requiring a larger read range.

- Affords high reliability, consistent read range characteristics, and low power consumption in a single, easy-to-install package.
- Features multicolor LED, internal or host control of the LED, and/or beeper and a beeper "off" switch for silent operation.
- Provides Wiegand protocol interface compatibility with all standard access control systems.
- Offers an optional, fully integrated personal identification number keypad for heightened security.
- Can be mounted to glass (using the optional glass mounting kit).
- For a longer read range, try the new generation ProxPro II Reader, which provides an additional inch (2.5 cm) of read range, requires just 5 volts for operation, and is lower-priced than the ProxPro Reader!



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#### FEATURES

- Security** - Includes a tamper switch to provide notification of reader tampering. Recognizes card formats up to 84 bits, with over 137 billion unique codes.  
 \*Except Model 5352 which supports up to 37-bit formats.
- Audiovisual Indication** - When a proximity card is presented to the reader, the red LED flashes green and the beeper sounds. The multicolor LED and beeper can also be controlled individually by the host system.
- Diagnostics** - On reader power-up, an internal self-test routine checks and verifies the setup configuration, determines the internal or external control of the LED and beeper, and initializes reader operation. An additional external loop-back test allows for the reader outputs and inputs to be verified without the use of additional test equipment.
- Indoor/outdoor Design** - Sealed in a rugged, weatherized polycarbonate enclosure designed to withstand harsh environments, providing reliable performance and a high degree of vandal resistance. Easily installed in any location, even with the optional keypad.
- Easily Interfaced** - Interfaces with all existing Wiegand protocol access control systems. Output data in Wiegand or Clock-and-Data format, plus optional RS232 and RS422 serial interfaces.
- Options** - Keypad operation, Custom label, Glass Mount Kit: 5455AGM00



#### SPECIFICATIONS

*Model Name	ProxPro*
Model Number	5355: Wiegand Interface/Clock-and-Data (configurable) 5352: Serial Interface
**Read Range	ProxCard® II card - up to 8" (20 cm) ISOProx® II card - up to 7" (17.5 cm) DuoProx® II card - up to 7" (17.5 cm) Smart ISOProx® II card - up to 7" (17.5 cm) Smart DuoProx® II card - up to 7" (17.5 cm) HID Proximity & MIFARE® card - up to 7" (17.5 cm) ProxCard® Plus card - up to 3" (7.5 cm) ProxKey® II key fob - up to 3" (7.5 cm) MicroProx® Tag - up to 4" (10.2 cm) ProxPass® Active Vehicle Tag - N/A
Mounting	Mounting holes fit standard U.S.A. single-gang switch boxes (vertically mounted) to simplify installation. Field adjustable for mounting directly to metal, exhibiting only minimal effects on read range. A selectable jumper setting provides for improved performance.
Color	Gray or Beige
Keypad	Optional
Dimensions	5.0" x 5.0" x 1.0" (12.7 x 12.7 x 2.54 cm)
Power Supply	10-28.5 VDC; Linear power supplies recommended. Reverse voltage protection included.
Power Requirements (Standard Power)	Average: 100 mA (12 VDC) Peak: 120 mA (24 VDC)
Operating Temperature	-22° to 150° F (-30° to 65° C)
Operating Humidity	0-95% relative humidity noncondensing
Transmit Frequency	125 kHz
Environmental	IP55
Cable Distance	Wiegand or Clock-and-Data interface: 500 feet (152 m) RS-232 interface: 50 feet (15 m) RS-422 interface: 4000 feet (1219 m) Recommended cable is ALPHA 1295 (22 AWG) 5 conductor stranded with overall shield or equivalent. Additional conductors may be required for LED or beeper control. RS-422 requires ALPHA 6212C 2-Twisted Pair, shielded cable with drain wire, or equivalent for data, plus ALPHA 1292C two-conductor shielded or equivalent for DC power.
Certifications	UL294/cUL (US), FCC Certification (US), IC (Canada), CE (EU), C-tick (Australia, New Zealand), SRRC (China), MIC (Korea), NCC (Taiwan), MIC (Japan), iDA (Singapore), RoHS
Housing Material	UL94 Polycarbonate
Warranty	Lifetime

\*Consult How to Order Guide for specific ordering instructions.  
\*\*Dependent upon installation conditions

North America: +1 949 732 2000  
Toll Free: 1 800 237 7769  
Europe, Middle East, Africa: +44 1440 714 850  
Asia Pacific: +852 3160 9800  
Latin America: +52 55 5081 1650

hidglobal.com

#### ASSA ABLOY

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## WARRANTIES

For the proposed CalAmp hardware, the warranty for the LMU GPS devices and the MDT-7 Android tablets is one year from the date of shipment (although extended warranties for as many as five years are available for additional fees). The optional HID RFID readers have a lifetime warranty. The LPSB would contact EDULOG for an RMA number, and then ship the defective item or items to EDULOG for warranty replacement.

Costs associated with damage to the hardware and wiring because of an accident or student damage will be borne solely by the district.

The realities of pupil transportation operations are such that the LPSB should be aware that GPS hardware, as with any type of equipment used on school buses, will need proper care and maintenance to continue functioning as designed. Rough driving conditions, excessively bumpy roads, and even deliberate driver tampering can all cause GPS units to stop working. As a standard part of the solution, EDULOG will train the client's mechanics and staff in basic GPS hardware maintenance so that client staff can handle the majority of problems associated with things such as loose or cut wires. At any time beyond initial unit installation the client may also request on-site assistance from EDULOG for hardware troubleshooting at the rate of \$895/day plus travel and lodging expenses.

The EDULOG software warranty is as follows:

"EDULOG warrants that the SERVICES and PROGRAM MATERIALS furnished and installed pursuant to this Agreement shall perform to their published specifications and shall be free of program coding errors. EDULOG's obligation under this warranty shall be to remedy any failure to perform to the published specifications and to correct program coding errors as soon as is reasonably possible after notification by CUSTOMER of such failure to perform, or coding errors. This warranty constitutes the sole liability of EDULOG to CUSTOMER or any third party for the failure of the PROGRAM MATERIALS to function.

"EXCEPT FOR THE FOREGOING WARRANTIES, EDULOG MAKES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICES AND PROGRAM MATERIALS, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE."



## TECHNOLOGY

### SYSTEM SERVER REQUIREMENTS

Two servers will be needed, one for the routing and scheduling system, and the second for the GPS/AVL system. During the project planning phase, the EDULOG project manager will work with the LPSB to determine the optimal server configurations and network setup.

On the following pages you will recommendations for the two servers.





## EduTracker Server Specs

### Physical Server – Recommended Specs

- Edulog Recommends the EduTracker Server be dedicated to EduTracker, with no other roles or services outside of Edulog Products.
- Windows Server 2008 R2 Standard (x64)
- Microsoft SQL Server 2008 R2 (x64) or Microsoft SQL Server 2012 (x64)
- Intel Xeon or AMD Opteron Quad-core processor running at 2.4 GHz or faster
- 8 GB RAM minimum (16GB+ for Extremely Large Districts)
- 400GB available storage in a RAID (1, 5, 6, 10) array. (1TB+ for Extremely Large Districts)
- Internet Information Services (IIS) should be installed
- Microsoft .NET Framework 4.0 should be installed
- Edulog requires remote access to the server through RDP (Remote Desktop) or VPN+RDP
- Edulog will need a user account with Administrative privileges on the server (Domain or local account) and may require a Domain Level AD Service Account
- Server must have access to the Internet
  - Port 80 TCP for EduPhone or Zonar
  - Port 20500 UDP for LMU and MDT
  - Optional Port 80 TCP for web access to the EduTracker software
- Server will need internet access and SFTP access during installation and upgrades. This is needed so that Edulog can download the necessary setup files for the install or upgrade
  - Port 22 TCP for SFTP access
- If SQL Server is pre-installed, Edulog's Windows account must have "SysAdmin" Role granted to the instance in SQL Management Studio

### Virtualized EduTracker Server – Additional Requirements

When Edulog SQL is operating in a virtualized environment, in addition to the information above, please note these requirements.

- The virtual machine should be configured with a single virtual CPU with four or more cores, rather than four separate CPUs each with a single core. (Alternatively referred to as a single "socket" with 4 CPU cores.)

### Important Java Update Notice

During the installation of Edulog's Web Applications, the specific version of Java required for functionality is installed. Allowing updates to Java while Edulog's dependent services are running will break Java. For this reason, it is **strongly suggested** to not update or change the installed version of Java after Edulog's install, without specific instruction or guidance from Edulog's Support staff to ensure the use of a compatible version of Java. Updating, changing version, or altering the Java installation, without specific Edulog instruction or guidance which results in the need for Edulog repair may result in a billable service.

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## Edulog SQL Server Specifications & Setup

### Physical Server – Recommended Specifications

- Windows Server 2012 R2 Standard (x64)
- Microsoft SQL Server Standard 2012 (x64)
- Intel Xeon E3 v2 “Ivy Bridge” or better Quad-core processor
- 8 GB RAM minimum (16GB+ for Extremely Large Districts)
- 200GB available storage in a RAID (1, 5, 6, 10) array. (600GB+ for Extremely Large Districts)
- Microsoft SQL must be installed on the same server as the “Edulog SQL” software -

*This allows the system to access data quickly and negates network bandwidth issues.*

*Edulog Support can also respond quicker since MSSQL Management Studio is in the same location as the applications. (See Alternative Edulog Server Setup section below.)*

- Remote Desktop Services (TS) Role with Licensing for Users of Edulog pre-configured
- A printer with drivers compatible with your operating system
- Edulog requires remote access to the server through RDP (Remote Desktop) or VPN+RDP –
  - o Please name the account for Edulog Support staff “EdulogSupport”
- Edulog will need a user account with Administrative privileges on the server (Domain or local account) and may require an AD Service Account
- Server must be addressable from the internet if the software is intended to be accessed outside the network
  - o Port 80 TCP for HTTP access
- Server will need internet access and SFTP access during installation and upgrades. This is needed so that Edulog can download the necessary setup files for the install or upgrade
  - o Port 22 TCP for SFTP access
- If SQL Server is pre-installed, Edulog requires its Windows account to be assigned “SysAdmin” role in SQL Management Studio for the Edulog Instance

### Virtualized Edulog SQL Server – Additional Requirements

When Edulog SQL is operating in a virtualized environment, in addition to the information above, please note these requirements.

- The virtual machine should be configured with a single virtual CPU with four or more cores, rather than four separate CPUs each with a single core. (Alternatively referred to as a single “socket” with 4 CPU cores.)



### Standard Edulog Server Setup

Edulog has a standard server setup, described by the following:

1. Before Edulog is installed, a verification is done by Edulog staff to ensure that the server meets required specifications. Server verification checks the following:
  - Operating System
  - CPUs (Cores)
  - RAM
  - HD Space
  - Remote Desktop Services Role is Installed
  - MS SQL Server Installation and Permissions
  - Edulog Support Windows Account Permissions
  - Ports required for SFTP are open
2. Edulog Core Software is installed on the server.
3. Edulog is installed at [Partition]:\ELT.
4. Edulog Databases are installed at [Partition]:\ELT\[Data Area]\server\SQLDB.
5. Edulog Asks RDP Users to connect to the server to create their RDP profiles.
6. Edulog enables access to the Core Software for desired RDP users.
7. If requested, Edulog will create a Remote App installer for use over RDP – *Note: Edulog does not Install or Configure RD Web services.*
8. If Additional Modules have been purchased, installation of those Modules will be scheduled.

### Alternative Edulog Server Setups

Non-standard Edulog setups may incur additional fees. Sites requesting alternative setups can submit a request that details their specific needs. Edulog staff will review this document and provide information on additional fees if the setup requires custom development, testing, or installation configuration research.

### Important Java Update Notice

During the installation of Edulog's Web Applications, the specific version of Java required for functionality is installed. Allowing updates to Java while Edulog's dependent services are running will break Java. For this reason, it is **strongly suggested** to not update or change the installed version of Java after Edulog's install, without specific instruction or guidance from Edulog's Support staff to ensure the use of a compatible version of Java. Updating, changing version, or altering the Java installation, without specific Edulog instruction or guidance which results in the need for Edulog repair may result in a billable service.

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## HOSTING SERVICES

If the vendor-hosted option is selected, Blackfoot Telecommunications Group of Missoula, MT would provide the hosting services (the actual servers would be provided by EDULOG and installed at the Blackfoot site). Please refer to the following pages for information about the Blackfoot Telecommunications Group.





**COLOCATION SERVICES**

By **BLACKFOOT**  
Telecommunications Group

**PROTECT YOUR SERVERS & EQUIPMENT IN A CARRIER-GRADE DATA CENTER.**

Do you need a high-quality data center in Montana to house your mission critical servers? Blackfoot's Data Center offers carrier-grade, scalable colocation services that meet your most demanding server availability requirements.

Whether you're looking for a single rack unit of server space or a full locking cabinet, Blackfoot has a colocation solution to meet your unique needs. Our data center offers standard and custom configurations for the best possible solution.

Blackfoot's data center is built to the highest industry specifications, so your business benefits from our investment.

**Blackfoot's Business Team:** 866-541-5000 | [business@blackfoot.com](mailto:business@blackfoot.com)

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*Innovative Technology. Demonstrated Savings. Proven Success.*



## WHY COLOCATE?

How it works: your business leases rack space at Blackfoot's data center to house your servers, firewalls, routers, switches, and related equipment.

**COST MANAGEMENT & SAVINGS.** Building and maintaining an in-house data center can cost thousands of dollars and is more work than most businesses want to tackle. Colocation removes the need for any up front investment saving you money.

**FLEXIBILITY.** Colocation services can grow as your business grows. Whether you have a single server or multiple racks of equipment, your business needs are handled with maximum efficiency.

**SERVICE RELIABILITY.** Reliability and uptime are of paramount importance to any company. Downtime can cost a company thousands of dollars in lost sales, opportunities and productivity.

**SKILLS & EXPERTISE.** Skilled technical engineers concentrate on managing and maintaining our data center so you can concentrate on running your business.

**24/7 SUPPORT.** Support ensures that your staff can concentrate on their expertise and eliminates the need to work in shifts. You can rely on an external IT support group for rapid responses.

**DISASTER PREPARATION.** Colocation data centers are protected from power outages and built to ensure the greatest amount of uptime possible. Protect your business and enable your employees to work remotely in the event of an outage at your office.

**CARRIER-GRADE FACILITY.** Blackfoot is connected to three separate Tier 1 providers through three Gigabit Ethernet interfaces carried over two separate fiber rings. Our network utilizes the latest Cisco routers utilizing

BGP routing over the three connections to provide load balancing and an extremely high degree of survivability. Our data facility also offers a robust HVAC system with fire suppression and is designed with a fully integrated disaster relief plan to ensure your business stays up and running even when the power to your office is out.

**SOLID REPUTATION.** Blackfoot's network has not lost power since it's inception, and offers the reliability, scalability and staff expertise your business requires.

**REDUNDANT POWER BACKUP.** Blackfoot provides a high availability power system to all collocation customers. This system features automatic transfer switching to a Caterpillar Olympian 400 kW backup diesel generator in case of commercial power failure. Customers are served with a redundant, modular Liebert Universal Power System (UPS) to carry over service during the generators' auto start sequence.

**SCALABLE.** Blackfoot offers rack options in 1RU, quarter, half or full racks with single or dual Ethernet Internet connections. We can customize any cage space options to best fit your business needs and adjust them as you grow.

**COMPETITIVE RATES.** Blackfoot offers highly competitive colocation and service rates to that of other local or national providers. And you have the convenience of one bill for all of your voice, data and colocation needs.

**HIGHLY SECURE.** Our data center is SOC certified. There is limited access to our colocation facility through secure access cards on the Blackfoot campus which is protected around the clock by security systems and monitored video surveillance cameras.



## COLOCATION SERVICES FREQUENTLY ASKED QUESTIONS

**Q:** How is my Colocated Server connected to the Internet?

**A:** It's connected via Ethernet to our ring protected OC-48 and Gigabit Ethernet connections to multiple Tier 1 carriers.

**Q:** Do I need to provide my own switch/hub when connecting my servers or network equipment?

**A:** No, your servers will be connected to our switches, but customers may choose to provide their own when implementing multi-tiered server environments.

**Q:** How can I get a server to Blackfoot?

**A:** You can send it by a reputable courier, such as UPS, FedEx or DHL, but please get insurance, a receipt and tracking number. Or, feel free to contact our business sales team for an appointment.

**Q:** How high is 1U?

**A:** Our racks are a standard 19" wide x 31.5" deep. 1U of rack space is 1.75" tall x 29" deep.

**Q:** What if my server has a problem while it is colocated at your location?

**A:** You have 24-hour unescorted access to the facility, or you may contact Blackfoot to perform required work at our standard hourly rate.

**Q:** Are rack rails necessary for my equipment?

**A:** Yes. Since servers are various sizes, the rack rail type should be noted prior to your scheduled installation date and they must be provided along with your server.

**Q:** Are your facilities carrier neutral?

**A:** Yes. This means that you can get Internet connections from other providers in our facilities.

**Q:** What type of backup power systems does Blackfoot have to guard against a power failure?

**A:** Blackfoot's power infrastructure is highly redundant and reliable. Featuring a UPS system, automatic transfer switches, a backup diesel generator, and redundant distribution to the server room, our facility provides our customers with maximum power availability.

**Q:** What about environmental control and monitoring (temperature/humidity)?

**A:** Temperature and humidity control is provided by several redundant, high-capacity, computer-grade air conditioning systems.



## STANDARD SERVICES

- Rack Space Plans: 1 RU increments, including quarter, half, and full rack.
- Internet Bandwidth with network access/connectivity in 1Mbps increments.
- Bandwidth monitoring, other monitoring options available.
- Power priced in 1Amp increments.
- Static IP addresses.
- UPS and Generator back up power.
- Secure, alarmed and monitored facility and 24x7 un-escorted controlled access.



## CONTACT BLACKFOOT'S BUSINESS TEAM

Contact Blackfoot's Business Team today and one of our dedicated account managers will assess your needs and help you identify the right solution for your business.

866-541-5000

[business@blackfoot.com](mailto:business@blackfoot.com)

[www.blackfoot.com/colocation](http://www.blackfoot.com/colocation)



voice | data | IT services

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



*Innovative Technology. Demonstrated Savings. Proven Success.*

## IMPLEMENTATION AND TRAINING

The EDULOG routing and scheduling system is already in place at the Lafayette Parish School Board, but the following would apply if the LPSB implemented the EDULOG GPS/AVL system.

### EDULOG'S APPROACH TO PROJECT MANAGEMENT

At EDULOG, a project manager is the senior staff member who has the overall responsibility for the successful planning and execution of a given project. The project manager possesses a combination of skills, including the ability to ask meaningful questions, detect unstated assumptions, and resolve interpersonal conflicts—in addition to more traditional, systematic management skills.

One of the EDULOG project manager's key duties is to recognize that risk directly affects the likelihood of success, and that this risk must be both formally and informally measured and discussed throughout the life of the project. Risk arises primarily from uncertainty, and an EDULOG project manager focuses upon this as the main concern. Most of the issues that affect a project arise in one way or another from risk. An EDULOG project manager can reduce risk significantly by adhering to a policy of open communication to ensure that every significant participant has an opportunity to express opinions and concerns.

Thus, an EDULOG project manager is responsible for making decisions both small and large in such a way that risk is controlled and uncertainty minimized. Every decision made by the project manager is based on the goal of directly benefiting the project.

EDULOG project managers use project management software to organize their tasks and workforce and provide the client with reports and charts.

Some of the major roles an EDULOG project manager is involved in include:

**Team management:** The project manager aims to create an atmosphere of a cooperative and effective team partnership, both within EDULOG and with the client staff. Team management includes all the processes that are needed to identify and form an effective project team. This includes determining who is vital to the project and identifying the roles and responsibilities of each team member. The project manager develops processes for communicating amongst the team that will build the necessary rapport, resolve conflicts, and monitor performance levels to ensure the effectiveness of the team.

**Communication management:** Effective communication during a project is imperative to ensure client success and maintain a clear understanding of the project's progress. For the Lafayette Parish School Board, EDULOG is proposing a weekly discussion to analyze project status, measure the risks involved, determine the goals for the week ahead, and update the schedule. This will ensure that both the LPSB and EDULOG project teams are aware of project-related activities, success, and expectations.

**Risk management:** The project manager must also work with the client to develop strategies and methods to identify and avoid risks throughout the life of the project. These risks might include business risks associated with the nature of the work and the funding sources, risks within the project and the team environment, and technical risks involved with the system development and implementation or other aspects of the technology.

**Configuration management:** In a project of the sort contemplated by the LPSB, many software files are created during the project. Therefore the EDULOG project manager will be responsible for directing the EDULOG





team in identifying and tracking these versions and documenting how changes will be managed and accepted. All project documentation, project hardware and software, and project output are placed with the EDULOG project management team.

**Quality management:** Evaluation and testing activities contribute to how the delivered solution adheres to relevant standards. Quality of a package or deliverable doesn't mean checking it at the end and ensuring that it is bug free. It also means quality is tracked throughout the project. A quality management plan is developed at the beginning of the project, with quality milestones and goals clearly delineated.

**Project time management:** Developing procedures to manage activities and project scheduling involve creating a detailed schedule at the project definition stage. A work responsibility structure is then developed and agreed to by EDULOG and the client.

EDULOG project managers follow a well-established process that begins at preplanning the project to defining the scope, mission, resource assignments, deliverable definitions, and a common plan agreed to by both EDULOG and the client.

During the execution of the project, in addition to supervising deadlines, tasks, constraints, and resources, the EDULOG project manager also monitors goals, issues, key learning areas, alerts, and team dynamics.

The intent of the EDULOG project management process is to:

Replace "just-in-time" or "good-enough" actions with coherent, planned processes that build on previous successes

- Handle surprises in a pre-planned manner
- Foster a common understanding and commitment within both EDULOG and the LPSB
- Ensure that work from different groups (programming, implementation, operations, the LPSB transportation and IT staffs) don't conflict
- Reduce risks to a non-threatening level
- Make predictions and revisions with confidence

As evidenced by the success of the very large implementation and customization project EDULOG conducted for the New York City Department of Education, we believe that we have the skill, experience, knowledge, and resources to effectively manage this project for the Lafayette Parish School Board.

## GPS/AVL IMPLEMENTATION PROJECT MANAGEMENT PLAN

The project management plan focuses on the LPSB desire to implement a system that allows the LPSB to have the most robust and current GPS solution for all school buses. In order for the LPSB to achieve this goal, certain requirements must be met:

1. The system must have complete data integration with the proposed EDULOG routing and scheduling system
2. GPS hardware must be installed and tested on the buses
3. The GPS tracking software must be installed and tested on LPSB servers
4. LPSB staff must receive instruction in the use and maintenance of the proposed system





EDULOG project managers all understand that every project big or small follow a basic project life cycle.

- **Starting the project**—This stage involves generating, evaluating, and framing the business need for the project. This consists of the general approach to performing each stage and preparing a detailed project plan. Outputs from this stage may include approval to proceed to the next stage, documentation of the needs of the project or estimates of the time and resources to perform each required function (often included in a project charter), and an initial list of people who may be interested in, involved with, or affected by the project.
- **Organizing and preparing**—This stage involves developing a plan that specifies the desired results; the work to complete; the time, the cost, and other resources required; and a plan for how to address key project risks. Outputs from this stage may include a project plan documenting the intended results coordinated with the time, resources, and supporting processes to help create them.
- **Carrying out the work**—This stage involves establishing the project team, support systems, performance of the planned work, and complete system monitoring to ensure adherence to the current plan. Outputs from this stage may include project results, project progress reports, and other communications.
- **Closing out the project**—This stage involves assessing the project results, obtaining customer approvals, transitioning project team members to new assignments, closing financial accounts, and conducting post-project evaluations. Outputs from this stage may include final, accepted and approved project results.

Understanding this life cycle and how it relates to the projects ensures success when moving through the project management processes. Our approach will follow these processes:

1. Initiation
2. Planning
3. Execution
4. Control and Monitoring
5. Closure

Successfully performing these processes requires the following:

- **Information:** Accurate, timely, and complete data for the planning, performance monitoring, and final assessment of the project
- **Communication:** Clear, open, and timely sharing of information with appropriate individuals and groups throughout the project's duration
- **Commitment:** Team members' personal promises to produce the agreed-upon results on time and within budget.

## Project Initiation

*(Clarifying the business need, defining high-level expectations, defining resource budgets, and beginning to identify audiences that may play a role in the project)*

If awarded the contract for a vehicle/student tracking/driver tracking system, all contract documents will effectively serve as the Statement of Work and Project Charter to clearly define the business need. These contract documents will serve as the narrative description of the products and services to be delivered within the project. While most of this is outlined within the Request for Proposals (RFP) the scope of the project could change through negotiations with LPSB.

The project plan that is proposed assumes that there are no significant changes to the overall scope of services as defined in the RFP. Details of the project timeline serve as estimates based on the information cur-

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



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rently available. The project planning process will be utilized to generate a more concrete timeline and task list that will supersede the portions presented in this proposal.

## Project Planning

*(Detailing the project scope, time frames, resources, and risks, as well as intended approaches to project communications, quality, and management of external purchases of goods and services)*

The EDULOG project manager will take a proactive role in ensuring effective communications on this project. The communications requirements are documented in the Communications Matrix presented in this document. The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it, and to whom to communicate with.

As with most project plans, updates or changes may be required as the project progresses or changes are approved. Modifications or updates may be required due to changes in personnel, scope, budget, or other reasons. Additionally, updates may be required as the project matures and additional requirements are needed. The project manager is responsible for managing all proposed and approved changes to the communications management plan. Once the change is approved, the project manager will update the plan and supporting documentation and will distribute the updates to the project team and all stakeholders.

All project communication activities will occur within the project's approved budget, schedule, and resource allocations. The project manager is responsible for ensuring that communication activities are performed by the project team and without external resources which will result in exceeding the authorized budget. Communication activities will occur in accordance with the frequencies detailed in the Communication Matrix in order to ensure the project adheres to schedule constraints. Any deviation of these timelines may result in excessive costs or schedule delays and must be approved by EDULOG and the LPSB.

As part of identifying all project stakeholders, the project manager will communicate with each stakeholder in order to determine their preferred frequency and method of communication. This feedback will be maintained by the project manager. Standard project communications will occur in accordance with the Communication Matrix; however, depending on the identified stakeholder communication requirements, individual communication is acceptable and within the constraints outlined for this project.

In addition to identifying communication preferences, stakeholder communication requirements must identify the project's communication channels and ensure that stakeholders have access to these channels. If project information is communicated via secure means or through internal company resources, all stakeholders, internal and external, must have the necessary access to receive project communications.

Once all stakeholders have been identified and communication requirements are established a project team directory will be created. The following table is a sample directory for use by the project team:

Role	Name	Title	Organization/ Department	Email	Phone
EDULOG Project Manager	A. Smith	PMO Manager	PMO	<a href="mailto:a.smith@abc.com">a.smith@abc.com</a>	(555) 555-1313
LPSB Project Manager	B. Smith	Project Manager	PMO	<a href="mailto:b.smith@abc.com">b.smith@abc.com</a>	(555) 555-1414
Project Stakeholders	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register
Project Team					
Site Integrator					



The project team will determine the communication methods and technologies based on several factors to include: stakeholder communication requirements, available technologies (internal and external), and organizational policies and standards.

A Communications Matrix will be developed that identifies the communications requirements for this project:

Communication Type	Objective of Communication	Medium	Frequency	Audience	Owner	Deliverable	Format
Kickoff Meeting	Introduce the project team and the project. Review project objectives and management approach.	● Conference Call	Once	● Project Sponsor ● Project Team ● Stakeholders	Project Manager	● Agenda ● Meeting Minutes	● Soft copy archived on project SharePoint site and project web site
Project Team Meetings	Review status of the project with the team.	● Conference Call	Weekly	● Project Team	Project Manager	● Agenda ● Meeting Minutes ● Project schedule	● Soft copy archived on project SharePoint site and project web site
Technical Design Meetings	Discuss and develop technical design solutions for the project.	● Conference Call	As Needed	● Project Technical Staff	Technical Lead	● Agenda ● Meeting Minutes	● Soft copy archived on project SharePoint site and project web site
Monthly Project Status Meetings	Report on the status of the project to management.	● Conference Call	Monthly	PMO	Project Manager	● Slide updates ● Project schedule	● Soft copy archived on project SharePoint site and project web site
Project Status Reports	Report the status of the project including activities, progress, costs and issues.	● Email	Monthly	● Project Sponsor ● Project Team ● Stakeholders ● PMO	Project Manager	● Project Status Report ● Project schedule	● Soft copy archived on project SharePoint site and project web site

A communication flowchart will be developed to aid in all project communication. This flowchart will provide the framework for the project team to follow if something arises that falls outside of the communication flowchart the project manager is responsible for discussing the communication to the project sponsors to make a decision on how to proceed.

All meetings will begin with a Meeting Agenda to be distributed five business days in advance of the meeting by the meeting chairperson. The Agenda should identify the presenter for each topic along with a time limit for that topic. Any new business that is discussed will be placed in a parking lot for the next scheduled meeting and will be included into the next Agenda. Action items are recorded in both the meeting agenda and minutes. These records will include both the action item and the owner of the action item.

Efficient and timely communication is key to successful project completion. As such, it is imperative that any disputes, conflicts, or discrepancies regarding project communications are resolved in a way that is conducive to maintaining the project schedule, ensuring the correct communications are distributed, and preventing any ongoing difficulties. In order to ensure projects stay on schedule and issues are resolved, an escalation process will be developed to provide a framework for escalating communication issues.

## Project Execution

*(Establishing and managing the project team, communicating with and managing project audiences, and implementing the project plans.)*

The project plan will begin by:

- Assigning people to all project roles
- Introducing team members to each other and the project
- The distribution and explanation of tasks to all team members
- Defining how the team will perform its essential functions
- Setting up necessary tracking systems
- Announcing the project to the organization

Once the planning stage is complete we will move into:

- Performing the tasks
- Assuring quality
- Managing the team
- Developing the team
- Sharing information

The implementation will consist of two (2) key phases; GPS/AVL implementation and then integration with the EDULOG routing system. Each phase will begin with a kick-off meeting bringing all project team members together to coordinate the fine details for implementation; many of which are defined in the proposed project plan. At various stages of the overall implementation process phases may overlap. Our focus is to produce validated GPS/AVL data that the LPSB as early as possible within the implementation process.

## Project Monitoring and Controlling

*(Tracking performance and taking actions necessary to help ensure project plans are successfully implemented and the desired results are achieved)*

Each phase outlined above will incorporate Monitoring and Controlling activities including: Integrity Testing, Integration and Setup, Validation, Training, and Support and Maintenance.

Once all hardware is installed and activated EDULOG site integrators will begin integrity testing to ensure that units are configured correctly and reporting as expected. Sample sizes will be determined for both vehicles and students.



During Integrity Testing the site integrators will also be tasked with full System Integration and Setup. This will include configuration of the proposed software. The EDULOG GPS/AVL tracking software will be installed on LPSB servers by EDULOG's software Installation group in partnership with LPSB Information Technology staff. Integration will allow LPSB to use the EDULOG system to view vehicles real time utilizing GPS/AVL. Complete Integration will ensure communication for all LPSB back end systems with the on-vehicle equipment.

The Validation period is critical to determine that all units are all reporting as expected. Reports will be generated and evaluated by the site integrators to ensure that all information contained in the reports matches what the vehicle did for the same period. Any failures will be reported to the Project Manager and corrected.

At various stages of the above activities EDULOG trainers will be dispatched to conduct training. Training videos will be placed online for access.

Support and ongoing maintenance will be established as each increment nears completion.

Project Status Reports will be generated on a weekly basis providing project team members an overall project status summary. These reports will highlight the work that has been completed over the past month, the past week, and upcoming work for the weeks to come. Also, highlighted in this report will be open issues, open risks, open change requests, along with deliverables and milestones.

A Root Cause Analysis (RCA) approach will be taken to identify and document details of a particular problem and the follow-up actions necessary to properly address them. Any RCA will include a detailed Event Description to provide a clear and concise description of the problem including date, time, detailed description of the event/problem, who detected the problem, who was affected and how it affected them. Though investigations the root cause will be identified and corrective action will take place to ensure the same problem is not repeated.

## **Project Closing**

*(Ending all project activity)*

After completing all phases on the project defined in the project plan (including extensive production validation), we will move into formal project acceptance and complete system launch. EDULOG will meet with LPSB to perform a project audit to verify that all deliverables meet performance and product requirements. This audit will determine if there are any after action items that need to be addressed before full project closure.

All activities will transition to Operations within LPSB with a detailed transition out plan. The live system will be handed over to LPSB Operations and the transfer of knowledge from the Project Team to LPSB Operations has also been completed. EDULOG support teams will be assigned to assist in the long-term maintenance of the system.

The Project Manager will move forward with formal close out of this project. The closeout process will include a post-project review, documentation of lessons learned, release of the Project Team, close out of all procurements and archiving all relevant project documents. Once the closing process is completed the Project Sponsor will be notified and the Project Manager will then be released from the project.





## EDULOG PROJECT MANAGER DUTIES AND RESPONSIBILITIES

The project manager will function as the authorized point of contact with the LPSB and will be available to respond promptly and fully to all project requirements. The requirements and responsibilities for this position will include:

- The project manager will provide administrative, supervisory, and technical direction to project personnel.
- The project manager will monitor work performance for accuracy, timeliness, efficiency, and adherence to contract requirements.
- The project manager will coordinate resolution of contract problems and the implementation of problem escalation procedures.
- The project manager will develop and implement quality assurance processes, procedures, and formal reviews for both the daily and strategic work of the project team.
- The project manager will define and implement customer satisfaction measurement tools that will be jointly administered by the EDULOG project team and the LPSB.
- The project manager will develop a project plan and a time table. The resulting schedule of expected progress under the contract will show approximately the time after execution of the contract when each part of the division of the work is expected to begin and conclude.

## TRAINING

Education Logistics strongly believes that the most effective training is done at the user site using the client's own hardware, databases, and map files. Our experience has shown that on-site training with real problems and solutions greatly enhances user confidence and knowledge.

Many of us at EDULOG have a teaching background, and we know that quality instruction is crucial to effectively using new tools and techniques. Our approach to training is to use situations that you face every day as the instruction set, and then model the classroom sessions to fit your operations. We ask you what it is that you want to get done, and then we show you how to do it with plenty of hands-on system time. Our clients are quite pleased with how much training they get with the EDULOG system—not to mention the detailed and easy-to-follow tutorial software and manuals. All instruction manuals and system guides will be provided both in printed notebooks and as CDs that can be used for on-line reference or to print additional copies of the instruction materials.

## TRAINING PLAN

Five days of on-site training will be provided at no cost except for travel and lodging expenses. In addition, unlimited remote system training through the Internet during the first year will also be provided at no cost.

The LPSB can also request additional training (either refresher training for existing staff or initial training for new staff) at any time.

Following are course descriptions for standardized on-site EDULOG system training, but a complete training plan based on district needs and expertise will be developed specifically for the LPSB.



## COURSE TITLE: EDULOG ROUTING AND PLANNING

**Course Objective:** To train a variety of users on the daily use and management of the EDULOG Routing and Planning software

**Target User Group:** Transportation staff (Routers, Supervisors, Directors, Data Analysts)

**Course Type:** Technical, Train the Trainer

**Recommended Class Size:** 12 students per class

**Recommended Number of Sessions:** Dependent upon the total number of students

**Estimated Duration:** 72 hours (24 hours per track)

**Training Location:** Customer Location or Site to be Determined

**Training Language:** English

**Course Content / Curriculum:**

I. Beginner Track (24 hours)

- A. Introduction to EDULOG interfaces, Tools, and interface Navigation (2 hours)
- B. Map Work in Maris – Terminology and working with the map components (2 hours)
- C. Boundaries work in Maris – working with and understanding boundary roles (2 hours)
- D. Schools – Introduction to school data (1 hour)
- E. Students – Working, searching and assigning student data (2 hours)
- F. Stops – Creating, assigning and working with stop data (2 hours)
- G. Runs – Creating, assigning stops, and working with run data (2 hours)
- H. Routes – Route creation and run assignment (2 hours)
- I. Querying data components – Introduction to base level querying of student, stop, run and route data (2 hours)
- J. Reports – Introduction to running and filtering reports (2 hours)
- K. EMU – Introduction to system maintenance (1 hour)
- L. Review – Question and Answer (4 hours) – May split to 2 sessions middle and end of Beginner track

II. Intermediate Track (24 hours)

- A. Schools – In depth management of school data (3 hours)
- B. Students – Working with student assignment to stop components (3 hours)
- C. Stops/Runs/Routes – In depth work with transportation data (5 hours)
- D. EMU – In depth look at system maintenance and management (4 hours)
- E. Querying Data Components – In depth look at utilizing queries (3 hours)
- F. Reports – In depth look at creating and modifying reports (4 hours)
- G. Review – Question and Answer (2 hours)

III. Advanced Track (24 hours)

- A. Special Needs Routing – Methods for routing for special needs students (4 hours)
- B. Transportation – Managing varying school schedules and transportation (4 hours)
- C. Transfers/Shuttling of Students – Understanding methods and procedures (3 hours)
- D. Map Management – Calibrating, managing map components (3 hours)
- E. Optimization – Utilizing optimization components to find efficiencies (6 hours)
- F. Review – Question and Answer (4 hours)

**Training Materials:** To be provided at the time of training

**Associated Certifications:** Each student will receive a certificate of completion after successfully completing the course



## COURSE TITLE: EDULOG GPS/AVL TRANSPORTATION MANAGER

**Course Objective:** To train a variety of users on the daily use and management of the EDULOG Transportation Management Software for GPS, student ridership management, and driver time and attendance tracking.

**EduTracker Overview** - The first introduction to the *EduTracker* application with specific focus on general concepts, data display, and tool familiarity.

**Tracking Views** – Create, customize, save and manage Tracking Views and learn how to display and evaluate data.

**Planning Views** – Navigate the benefits of comparative analysis (comparing GPS data to planned data) to manage the current day's transportation operation. We will create, customize, save and manage Planning Views.

**Historical Views** – Create, customize, save and manage Historical views which provide comparative analysis between the GPS data and the planned data from days in the past, allowing for data to allow for continuous improvement for the transportation operation and post incident analysis.

**Unit Management** – Track which devices are installed on specific vehicles and learn best practices for tracking histories of installations and swap outs of units.

**Student Tracking Module** – Learn how to track the location of students you transport. Students receive tags which they scan as they board and disembark vehicles, providing the ability to track student ridership.

**Driver Time Management Module** – Create and modify driver records, enter certifications, training, skills, substitutions, routes and schedules. View and edit login and logout times for use in calculating driver pay.

**Reports Module** – Examine and evaluate numerous types of data stored by the system using a variety of pre-defined reports.

**Tools** – Learn how to use system tools to locate vehicles, schedule reports, substitute buses and create Geofences to better manage your operation.

**Target User Group:** Transportation staff (Routers, Supervisors, Directors, Data Analysts, Dispatchers, Administrators)

**Course Type:** Technical, Train the Trainer

**Recommended Class Size:** 12 students per class

**Recommended Number of Sessions:** Dependent upon the total number of students

**Estimated Duration:** 24 hours

**Training Location:** Customer Location or Site to be Determined

**Training Language:** English

### Course Content / Curriculum:

#### **EduTracker Overview (3 hours)**

- Accessing the software
- Various ways to view your data
- Navigating the environment
- Customizing the experience
- Accessing Modules
- Toolbars and Icons

#### **Tracking Views (3 hours)**

- Function of the view
- Organizing your data
- Adding Vehicles
- Analyzing/Reviewing your data
- Saving the view



Help Menu  
Exercise 1 – Explore Tracking Views

**Planning views (3 hours)**

Function of the view  
Organizing your data  
Adding Vehicles  
Analyzing/Reviewing your data  
Saving the view  
Help Menu  
Exercise 2 – Explore Planning Views

**Historical views (2 hours)**

Function of the view  
Organizing your data  
Adding Vehicles  
Analyzing/Reviewing your data  
Saving the view  
Help Menu  
Exercise 3 – Explore Historical Views

**Unit Management Module (1 hour)**

Function of the Module  
Accessing your data  
Analyzing/Reviewing your data  
Reports  
Help Menu  
Exiting the module  
Exercise 4 – Explore the Unit Management Module

**Student Ridership Management Module (3 hours)**

Function of the Module  
Accessing your data  
Passenger lists  
Analyzing/Reviewing your data  
Help Menu  
Exiting the module  
Exercise 5 – Explore the Student Ridership Management Module

**Driver Time Management Module (3 hours)**

Function of the Module  
Loading your data  
Analyzing/Reviewing your data  
Entering data manually  
Reports  
Help Menu  
Exiting the module  
Exercise 6 – Explore the Driver Time Management Module

**Reports Module (3 hours)**

Function of the Module  
Accessing your data



Analyzing/Reviewing your data  
Entering data manually  
Reports  
Help Menu  
Exiting the module  
Exercise 7 – Explore the Driver Time Management Module

**Tools (3 hours)**

Report Scheduler  
Vehicle Finder  
Vehicle and School Group Editor  
Resource Assignment Manager  
Bus Substitution  
Emergencies/Exceptions  
Geofences (in/out)

**Training Materials:** To be provided at the time of training

**Associated Certifications:** Each student will receive a certificate of completion after successfully completing the course

## COURSE TITLE: EDULOG WEBQUERY

**Course Objective:** With EDULOG's WebQuery service staff can direct parents, real estate agents and other concerned parties to the portal and avoid resource consuming phone calls. This course will cover how to search an address, how to find the nearest stop, how to determine student eligibility and all things needed to be proficient with WebQuery.

**Target User Group:** Transportation staff

**Course Type:** Technical, Train the Trainer

**Recommended Class Size:** 12 students per class

**Recommended Number of Sessions:** Dependent upon the total number of students

**Estimated Duration:** 90 minutes

**Training Location:** Customer Location or Site to be Determined

**Training Language:** English

**Course Content / Curriculum:**

Comprehending school policies  
Searching an address  
Interpreting the results  
Determining best stop  
Understanding eligibility

### FROM SCHOOL TRANSPORTATION NEWS

#### Edulog Offers Attendees Opportunities to Plan for Future During Transportation Leaders Conference

Written by Ryan Gray

Tuesday, 21 February 2012 13:06

Communication is one of the most valuable tools successful leaders use to their advantage. Every year a collection of Transportation Officials from throughout North America gather at the Student Transportation Leaders Conference (STLC) presented by Education Logistics Inc. (Edulog) to take advantage of this tool.

The 17th annual Edulog conference runs from March 19-22 in Las Vegas.

The company started the STLC event seven years ago to provide an open forum specifically designed for transportation directors and administrators to network, share ideas, and develop professional relationships. STLC actually got its start in what the company called an "unexpected result of the annual Edulog training conference." Company leaders noticed the benefits of the professional networking opportunities and decided to organize a separate forum outside of the Edulog run conference.

The new conference welcomes transportation professionals from any school district regardless of the software or system they use. Utilizing this open forum concept, STLC has become a platform where the very largest urban school districts can interact with the smallest of rural districts. Gathering seasoned transportation professionals in an open forum setting brings a distinct depth of knowledge and invaluable experience that is unmatched by other industry gatherings.

Edulog said STLC is a way of contributing back to the professional community by facilitating the sharing of valuable information and experiences between districts that might otherwise be isolated in addressing common challenges. After the organization of STLC, Edulog steps away and embraces the same role as any other member at the conference.

The focus and topics taken up for discussion at STLC are determined by the members themselves based on changing priorities and interests every year. Topics of considerable interest within the conference have included efficiency, technology, savings, and benchmarking.

STLC allows professionals across the nation to bring the most pressing issues in the student transportation industry to the table and allows attendees to look at other districts' technologies and to engage in networking opportunities that Edulog said has "become essential as the transportation industry embraces the interconnected future of the industry."





Navigating map and walk boundaries  
Updating the system

**Training Materials:** To be provided at the time of training

**Associated Certifications:** Each student will receive a certificate of completion after successfully completing the course

## OTHER TRAINING AVAILABLE FROM EDULOG

**Local and Statewide User Groups:** EDULOG has been expanding its current user groups and developing new associations. As many of our clients know, user groups are an excellent way to get answers to technology questions, learn how to operate the system more efficiently, and know more about EDULOG's products and future plans. User groups are also where customers can share common interests, skills, and knowledge in a friendly atmosphere. We've had 17 user group meetings already this year throughout the nation. We can help both in starting new groups and with continuing support for existing user group activities.

To increase the assistance EDULOG provides to its customer user groups, EDULOG will tell new clients in your area about your group, give you the latest information about the company and its goals, and provide organizational guidelines and support based on the best practices of existing user groups. EDULOG will also attend at least one meeting per year on-site—and have an on-line presence for all other meetings, maintain web pages for your organization, and offer seminars on topics of interest to the group.

**Regional conferences, seminars, and workshops:** EDULOG conferences have always provided clients with a cost-effective alternative to on-site training at the district. As budgets become tighter, the need for more local training opportunities increases. Therefore, we will be offering regional workshops beginning in the fall of 2010 to complement our existing annual conferences. Currently, EDULOG hosts annual multi-day regional conferences in Indianapolis, Missoula, and rotating locations in the Northeast and Southeast. EDULOG's national conference is held annually in Las Vegas, along with the Student Transportation Leadership Conference (STLC) and international EDULOG user group meeting.

The Student Transportation Leadership Conference is unique in the industry: rather than being another software forum, the EDULOG-sponsored STLC brings together leading K-12 professionals to discuss strategic initiatives and how districts can accomplish these goals.

**Webinars:** EDULOG began conducting free webinars (seminars and presentations conducted through the Internet) for school districts in March, 2009. The reaction from customers to the webinars has been overwhelmingly positive: in 2014 there were more than 2,000 participants registered for 121 sessions that involved 18 separate topics. Future sessions will include expanded topics such as ASP and GPS operations and presentations of new and future systems and enhancements.

## QUALITY ASSURANCE

EDULOG's quality program can best be described as a Continuous Process Improvement (CPI) system in which managers and staff work together to bring about constructive change. In our CPI approach to quality management, managers create an environment in which they, and the staff, focus technical product and service performance to meet the quality level acceptable to the client. This environment enables the managers and staff to think in terms of what is best for the client, and avoids the production of deliverables that meet client tolerances, but miss client needs. It instills the concept that product or service quality is only as good as what the



client perceives, and that EDULOG quality expectations can, and often do, go beyond the requirements set in the contract.

This management approach has fostered ideas from staff and junior level personnel, which have become a part of the total EDULOG approach to quality. During our thirty years of supporting school transportation operations, this quality improvement philosophy has evolved to become the corporate standard for work performance. As a result, our technical performance and client satisfaction levels are continually improving. Though the CPI approach has greatly reduced the need for formal quality controls, quality assurance remains a key element in our overall quality management plan.

EDULOG quality assurance procedures include continuous monitoring of a task as it is being performed and an in-depth review of all deliverables. Project managers direct the application of quality assurance procedures for all work under their purview. Assigned staff are specifically responsible for ensuring the quality of products and services that they provide, but EDULOG management always reviews and has final authority on products and services. Frequent reviews held by the project manager require assigned staff to prove progress against all technical, cost, and schedule milestones.

Effective quality control begins with the selection of competent personnel to perform assigned tasks. Early in project implementation, the project manager discusses with all assigned team members on the requirements and the review cycles of a project. This ensures that quality assurance (QA) requirements are known to all EDULOG staff assigned to the project. During the performance of each task, quality control procedures are used to evaluate the services being performed and the deliverables being produced. If the QA performance falls short of standards, these reviews will identify the problem early enough to permit timely correction.

## PROBLEM RESOLUTION

The key to problem resolution is early identification by project management through the review process. These reviews analyze current project status in terms of technical accomplishments, schedule, deliverables, staffing, other resource requirements (such as equipment), and cost. The final element included in the reviews is an assessment of potential problems. Project managers will individually review the status of each task to identify potential problems that could affect the team's implementation efforts.

Our project managers are aware of the resource requirements for all tasks in a project can reallocate resources to respond to problems, change of scope, and other conditions that affect a project plan in a quick and effective manner. To ensure that potential problems are identified as early as possible and that the greatest staffing flexibility can be effected to resolve the problem, the project managers maintain regular contact with all departments of EDULOG.



## ON-VEHICLE INSTALLATION SERVICES

Installing GPS units on school buses is not a trivial task. There are a variety of potential pitfalls including the diversity of bus makes/models within a district's fleet, non-standard electrical schematics between buses (even the same model), electrical variances and/or "spikes" as a part of normal operation, increased vibration and strained environmental conditions compared to other vehicles—just to name a few. There is a serious risk to district equipment if unqualified personnel attempt to interface any type of hardware with the a bus's electrical system, potentially leading to damage of buses or worse—in at least one documented case, faulty installation resulted in a fire that completely consumed a school bus. Professional installation, including management oversight by qualified electrical technicians, is critical to ensuring a safe, low-risk installation process.

Beyond the qualifications of the technicians themselves, the actual installation procedure itself often varies slightly from bus to bus. A standardized approach that is simply duplicated multiple times by an hourly employee cannot offer this level of customization and protection—which is implicitly needed for a responsible installation. For example, only a qualified professional can evaluate an electrical schematic, and then recognize that there have been after-factory adjustments for a particular bus that may require the addition of a particular in-line fuse in order to protect the bus from a potential short circuit or electrical burn out. These scenarios—and the needed adjustments to deal with them—are familiar to EDULOG. This attention to detail is unique compared to the installation practices of other GPS companies.

By working closely with EDULOG management, the professional on-site installers used by EDULOG have become extremely knowledgeable about the specifics involved with the installation of EDULOG's hardware and the steps required to verify full functionality and proper data transmission to the communication ("gateway") software. This familiarity with EDULOG's hardware, along with the existing processes and procedures that have been established over a period of years, results in a very streamlined and efficient implementation process for school district customers. For example, the steps associated with hardware installation, such as activation of each unit at the correct time as coordinated with the cell carrier, local testing of sensor inputs to the GPS unit, and verification with EDULOG that each unit is transmitting correctly and data is being received appropriately by the gateway software are all well proven.

In the event that the LPSB desires to perform hardware installation with its own staff or else requires that a local contractor be used, the relationship between EDULOG project management staff and the installation team will complement this decision as well. At other customer sites where a similar decision was made, EDULOG has allowed clients the ability to maximize the benefits of the installation team's technical and industry expertise as well as its familiarity with EDULOG's hardware installation process while allowing local installers to be used. In this scenario, EDULOG would make the professional installers available to LPSB staff or the local contractor as a part of its overall offering to LPSB so that local staff can be thoroughly trained in all aspects of unit installation and verification.



## TENTATIVE PROJECT PLAN FOR GPS/AVL IMPLEMENTATION

It should be noted and realized that an extensive implementation of almost every management system available for on-vehicle use requires a cascading plan because each capability is dependent upon the successful implementation of a previous capability. For example, basic GPS/AVL functionality must be implemented, tested, and validated before the next step can occur of integrating GPS/AVL with the EDULOG routing and scheduling system so that comparative analysis can be accomplished. Only after the integration of GPS/AVL with routing and scheduling has been accomplished can student ridership management be implemented. The tablet application (driver time and attendance tracking) depends upon all that has been previously implemented and tested. Finally the portals for parents and schools build upon all that has come before.

Because of these dependencies, it should be understood that software functionality acceptance and use will occur at a later date than the installation of equipment on the vehicles.

**Please note that the following is only a suggested timeline based on the current understanding of system requirements—a more detailed plan will be negotiated and agreed-to by EDULOG and the LPSB after contract agreement.**

**May 2016**—Contract agreement.

**May 2016**—Initial project meeting. Senior EDULOG staff meet with their LPSB counterparts to discuss and review:

- The constraints, variables, and resources of the project
- What should be done when (assigning a priority to tasks)
- Who will be assigned to the project and their roles, responsibilities, and reporting duties
- What processes work well at the LPSB and should be continued
- What processes (whether operational, managerial, or communicative, for example) can be improved and how the EDULOG/LPSB team will develop such an improvement plan
- What roles will other departments of the LPSB and the Independent School Districts have in this project

At the conclusion of this meeting, EDULOG and the LPSB will agree on a more detailed project plan that may differ from the following.

**July 2016**—Installation on 285 buses of on-vehicle equipment and wiring: GPS devices, RFID readers, tablets.

**July 2016**—Testing and implementation of basic GPS/AVL software and hardware functions begin.

**July 2016**—District and EDULOG evaluate current LPSB EDULOG system data for suitability with use of proposed systems (GPS, RFID readers, tablets); LPSB makes changes to system data as necessary.

**August 2016**—Basic GPS/AVL functions ready for use.

**August 2016**—LPSB completes EDULOG routing and scheduling system data review.

**August 2016**—Testing and implementation of integration between the EDULOG GPS/AVL and EDULOG routing and scheduling system begins.

**November 2016**—Integration between GPS/AVL and EDULOG routing and scheduling system ready for use.



**December 2016**—Testing and implementation of the EDULOG eDTA (electronic driver time and attendance) functions on the tablet begins.

**December 2016**—Testing and implementation of the Parent Portal functions without student information begins.

**December 2016**—Testing and implementation of the on-vehicle student ridership management functions begins.

**January 2017**—Parent Portal functions without student information, student ridership management, and driver time and attendance systems ready for use.

**January 2017**—Testing and implementation of Parent Portal functions with student information begins.

**February 2017**—Parent Portal functions with student information ready for use.





## ON-GOING SUPPORT SERVICES

EDULOG is fully committed to maintain and support all of its licensed installations. Software maintenance is provided in any of the following forms:

- Whenever possible, EDULOG will perform system diagnosis by directly accessing the client's system through the Internet and performing maintenance. Corrected data files or programs can be transferred through the Internet, allowing the district to be back in operation as soon as possible. EDULOG has been maintaining its systems in Alaska in this manner and has provided excellent service to its clients. Users can also upgrade and/or change software on site without the need to ship or return the system to EDULOG for upgrading purposes.
- If transfer through the Internet is not possible because of the amount of data to be moved, the required corrections will be sent by overnight mail on a CD-ROM.
- If it is decided that corrections must take place on-site, EDULOG will dispatch a technical representative to the client.

## SOFTWARE SYSTEM UPDATES, ENHANCEMENTS, AND WARRANTY

EDULOG is committed to maintaining a leading position in providing responsive and effective software, and is fully intent on keeping its technological lead over the competition. EDULOG has developed many enhancements to its system—all provided without charge to licensed sites. The typical process for program enhancement begins either with EDULOG's initiative or, more usually, from client suggestions. If EDULOG believes that a suggestion for customization would benefit most of the client base, the new feature will be included in the standard EDULOG system and will be provided to all users as part of the software maintenance program. Features added to the standard system as maintenance updates have been as varied as a simple change in the screen display to a complete overhaul of a system component. The following are just a few examples of maintenance enhancements:

- change the format of bus schedule reports;
- add a different format for bus run listings;
- provide bus stop listings in several sort orders;
- print bus timeline reports;
- retrieve a student from the database by his/her district ID number;

The purpose of the software maintenance program is to ensure that EDULOG is always in touch with the needs of all its clients, new and old, and that all EDULOG installations are in the best operating conditions. Clients are notified of software upgrades through periodical newsletter releases. Interested clients who can make the time commitment are also invited to become members of an EDULOG design review committee where changes and enhancements to the EDULOG system are discussed and proposed for consideration by EDULOG senior management.

The EDULOG Service, License, and Maintenance Agreement provides free of charge for the:

- Correction of any defect in the manuals, forms or programs;
- Updates of user guides as required to ensure their continued usefulness;
- Unlimited assistance by telephone (1-800 toll-free), fax, Internet, or mail regarding the use and operation of the system;



- Upgrades to the software which include any expansions, modifications, or improvements to the system which relate to the operating performance but do not change the basic function of the software and which are not regularly charged for by EDULOG to other clients as options. In the event that additional services (such as additional training or system installation) are required, these services will be charged to the client at EDULOG's current standard time and material costs.

## SUPPORT SPECIFICS

- Anyone from the LPSB can call the main EDULOG support center to request assistance. Calls are responded to within five minutes during regular business hours.
- EDULOG telephone support center hours will be negotiated with the LPSB (our standard support hours are 6:00 a.m. to 6:00 p.m. central time), with support on Saturdays and Sundays available from the weekend after the Fourth of July Holiday through the Labor Day weekend. Calls that require more than one session usually involve issues which go beyond the actual EDULOG application—such as how mapping information contained in the EDULOG system can be passed to other GIS applications.
- If there is a system crash at the LPSB because of an application error, EDULOG will assist the district with system recovery through a remote connection.
- The EDULOG support department has a quasi-matrix organization: routine requests for assistance are handled on a first-in, first-out basis—although there are both software and hardware specialists available to answer inquiries based on the subject. Also, the LPSB will be assigned several support specialists at EDULOG headquarters who will be responsible for more in-depth inquiries.
- A complete log of all support inquiries is maintained by EDULOG, and this information can be provided to the client upon request.
- The LPSB can change its support plan at any time.

## USER GROUP CONTACT

Sandra Drew, Routing Technician  
Cobb County School District  
620 South Cobb Drive  
Marietta GA, 30060  
Phone: 770-429-5865  
Email: [Sandra.Drew@cobbk12.org](mailto:Sandra.Drew@cobbk12.org)



## SAMPLE CONTRACT

The following represents the contractual terms and conditions that would apply to the Lafayette Parish School Board.

### EDUCATION LOGISTICS, INC.

#### SERVICE, LICENSE AND MAINTENANCE AGREEMENT FOR SCHOOL TRANSPORTATION MANAGEMENT SOFTWARE PROGRAMS

THIS AGREEMENT executed on this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, is entered into by and between EDUCATION LOGISTICS, INC., a Montana corporation, of 3000 Palmer Street, Missoula, Montana 59808 (hereinafter referred to as "EDULOG") and DISTRICT (hereinafter referred to as "CUSTOMER") under the following terms and conditions.

#### 1. SERVICE AND LICENSE AGREEMENT

- a. EDULOG agrees to provide and the CUSTOMER agrees to purchase the services listed in Paragraph 2 below (hereinafter referred to as "SERVICES") on the terms and conditions contained herein; and
- b. EDULOG agrees to grant and the CUSTOMER agrees to accept a non-exclusive and non-transferable license to use the EDULOG software products listed in Paragraph 2 below (hereinafter referred to as "PROGRAM MATERIALS") on the terms and conditions contained herein; and
- c. CUSTOMER agrees that the PROGRAM MATERIALS will be installed on the computer system specified below:

Model:

Located at:



## 2. SERVICES, PROGRAM MATERIALS AND CHARGES

### a. Program Installation

EDULOG will provide the following SERVICES and PROGRAM MATERIALS for the price indicated below:

#### SERVICES

#### PROGRAM MATERIALS

TOTAL FOR SERVICES AND PROGRAM MATERIALS .....\$

### b. License and Maintenance Fee

In addition to the above charges, CUSTOMER will pay the following annual License and Maintenance Fee:

TOTAL ANNUAL LICENSE AND MAINTENANCE FEE.....\$

### c. Additional Conditions

- 1) The annual License and Maintenance Fee will be adjusted each year for increases in the Consumer Price Index as calculated by the U.S. Department of Labor. This adjustment will take place on the first day of July of each year. The base for the adjustment will be the figure last published by the U.S. Department of Labor prior to the adjustment date. For each succeeding year, the same procedure will be applied.
- 2) All travel, accommodation and out-of-pocket expenses necessitated by the installation, training, and maintenance of PROGRAM MATERIALS shall be paid by CUSTOMER. Expenses for meals will be charged at a rate not to exceed Federal Travel Regulations (FTA) Sec. 301. If CUSTOMER's staff travels to Montana for training, all travel and lodging expenses will be the responsibility of the CUSTOMER.
- 3) EDULOG shall be entitled to reimbursement from CUSTOMER for special mailing when such mailing is authorized by CUSTOMER. Special mailing includes overnight courier service, Express Mail, air freight service or airline counter-to-counter package services.
- 4) The price and fees charged to CUSTOMER are exclusive of all taxes, including but not limited to sales, use, and like taxes, state or local taxes on lodging or meals, resort taxes, and of all fees, including but not limited to fees paid in connection with customs/duty such as brokerage GST fees, disbursement fees, entry prep fees, customs GST, duty amounts, etc. Any tax and/or fee EDULOG may be required to collect or pay upon the delivery or use of the PROGRAM MATERIALS or upon the provision of services shall be paid or reimbursed to EDULOG by CUSTOMER.

## 3. PAYMENT SCHEDULE

The CUSTOMER agrees to make the following payments to EDULOG at its principal place of business in Missoula, Montana, or at such other address as may be specified by EDULOG to the CUSTOMER:

- **Fifty percent of all fees (both initial and recurring monthly) for the first twelve (12) months will be due upon Execution of Agreement or Contract.**



- The remaining fifty percent of all fees (both initial and recurring monthly) for the first twelve (12) months will be due upon delivery of services and/or software items.
- Recurring monthly fees after the first twelve (12) months will be billed annually for a twelve (12) month period.

EDULOG accepts Visa or MasterCard credit card payments. All credit card transactions will be assessed a four percent (4%) service charge.

CUSTOMER will notify EDULOG in writing within sixty (60) calendar days of the date of an invoice indicating the reasons for non-payment of the invoice. In the event that an invoice is not paid and EDULOG does not receive a written explanation for the non-payment within the sixty (60) day period, then EDULOG will assign the invoice to a collection agency for collection. In that case, CUSTOMER will also be liable for all late fees or service charges and all costs of collection, including but not limited to reasonable attorney's fees.

#### 4. MAINTENANCE SERVICES

In addition to the License provided in Paragraph 1 (b) hereinabove and in consideration of the charges specified in Paragraph 2 (b), EDULOG will provide to CUSTOMER Maintenance Services:

The Maintenance Program entitles the CUSTOMER to receive the following benefits at no additional charge:

Correction of any defect in the manuals, forms or programs;

Updates of user guides as required to insure their continued usefulness;

Assistance by telephone or by mail regarding the use and operation of the system;

In order for EDULOG to provide remote support of the PROGRAM MATERIALS, the CUSTOMER will allow access to the CUSTOMER's EDULOG system through RDP (remote desktop protocol) and the CUSTOMER's VPN (virtual private network).

Upgrades to the PROGRAM MATERIALS. For the purpose of this paragraph, the term "upgrades" shall mean any expansions, modifications, or improvements to the PROGRAM MATERIALS which relate to the operating performance but do not change the basic function of the PROGRAM MATERIALS and which are not regularly charged for by EDULOG to other clients as options. In the event that additional services are required, these services will be charged to CUSTOMER at EDULOG's then current standard time and material costs.

These upgrades will insure that the CUSTOMER's version of the PROGRAM MATERIALS be identical to the most current version available to EDULOG's new clients.

#### 5. PROTECTION AND SECURITY

CUSTOMER acknowledges that the PROGRAM MATERIALS constitute a valuable asset and trade secret of EDULOG and that EDULOG has a proprietary right and interest in and to the PROGRAM MATERIALS and that any information with respect thereto is confidential. Accordingly, CUSTOMER agrees as follows that:

- a. The PROGRAM MATERIALS shall not be used for the benefit of any entity, including but not limited to any School District, other than the CUSTOMER's and/or on any computer system other than the CUSTOMER's or at any location other than the location specified in this Agreement.





The PROGRAM MATERIALS may be temporarily transferred to back-up computers in the event of malfunction of CUSTOMER's computer.

- b. CUSTOMER shall not, without prior written permission from EDULOG, sell, assign, transfer or otherwise make available for any purpose, whether gratuitously or for valuable consideration, the PROGRAM MATERIALS or any other documentations, models, description, forms, or instructions or other information relating thereto, to any individual, business organization, governmental body or third party of any nature, other than authorized employees of the CUSTOMER.

The provisions of this paragraph shall survive the termination of the remainder of this Agreement for a period of five (5) years from the date of termination.

#### 6. LIMITATION OF LIABILITY

Neither party shall be liable to the other for any incidental or consequential damages under this Agreement.

#### 7. WARRANTY

EDULOG warrants that the SERVICES and PROGRAM MATERIALS furnished and installed pursuant to this Agreement shall perform to their published specifications and shall be free of program coding errors. EDULOG's obligation under this warranty shall be to remedy any failure to perform to the published specifications and to correct program coding errors as soon as is reasonably possible after notification by CUSTOMER of such failure to perform, or coding errors. This warranty constitutes the sole liability of EDULOG to CUSTOMER or any third party for the failure of the PROGRAM MATERIALS to function.

EXCEPT FOR THE FOREGOING WARRANTIES, EDULOG MAKES NO WARRANTIES, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE SERVICES AND PROGRAM MATERIALS, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

#### 8. NON-HIRING OF EMPLOYEES

For the term of this Agreement and for twelve (12) months after its termination, CUSTOMER and EDULOG agree not to offer or provide employment to any employee of the other party unless specific written permission is granted waiving this restriction for an employee named by the grantor.

#### 9. TERMINATION

- a. CUSTOMER may terminate this Agreement by giving EDULOG sixty (60) days prior written notice by registered mail with return receipt requested. After this period of sixty (60) days, the CUSTOMER's obligations for payments as described in Section 3 will cease in proportion to services rendered.
- b. EDULOG may terminate this Agreement by giving CUSTOMER sixty (60) days prior written notice by registered mail with return receipt requested. After this period of sixty (60) days, the CUSTOMER's obligations for payments as described in Section 3 will cease in proportion to services rendered.
- c. Upon termination of this Agreement, CUSTOMER shall deliver within thirty (30) days to EDULOG all PROGRAM MATERIALS, including but not restricted to computer program disks, support



documentation, printed materials furnished hereunder or subsequently by EDULOG and copies of said materials made by CUSTOMER. Further, CUSTOMER shall warrant in writing that all copies of the PROGRAM MATERIALS stored in the CUSTOMER's computer have been destroyed.

- d. In the event that this Agreement is terminated prior to the twelfth (12th) month of continuing services, CUSTOMER will be required to pay EDULOG the total fees accrued through the end of 12 months of service.
- e. At the conclusion of the term committed to in section 3 above, unless CUSTOMER advises EDULOG to the contrary in writing, EDULOG will assume that CUSTOMER desires to continue using all PROGRAM MATERIALS beyond this initial term and will continue invoicing according to the ongoing payment schedule outlined in section 3.

#### 10. ATTORNEY'S FEES AND COSTS

In the event of any litigation between the parties arising out of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees and costs, as determined by the court or arbitrator.

#### 11. CONTINUATION OF BENEFITS

This Agreement shall inure to the benefit of and be binding upon the heirs, executors, administrators, assignees and successors of the respective parties.

#### 12. NON-WAIVER

No delay or failure of EDULOG in exercising any right hereunder and no partial or single exercise thereof shall be deemed of itself to constitute waiver of such right or any other rights hereunder.

This Agreement constitutes the complete and exclusive statement of the Agreement between the parties which supersedes all proposals, oral or written, and shall not be modified or altered except in writing by both parties.

Executed as of the day and year written above.

EDUCATION LOGISTICS, INC.

By: \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Typed Name

\_\_\_\_\_  
Title

By: \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Typed Name

\_\_\_\_\_  
Title



## PRICE QUOTATION

Please refer to the following spreadsheet.

The EDULOG Service, License, and Maintenance Agreement provides free of charge for the:

- Correction of any defect in the manuals, forms or programs;
- Updates of user guides as required to ensure their continued usefulness;
- Unlimited assistance by telephone (1-800 toll-free), fax, Internet, or mail regarding the use and operation of the system;
- Upgrades to the software which include any expansions, modifications, or improvements to the system which relate to the operating performance but do not change the basic function of the software and which are not regularly charged for by EDULOG to other clients as options. In the event that additional services (such as additional training or system installation) are required, these services will be charged to the client at EDULOG's current standard time and material costs.

All license and support fees are for a full site license with unlimited users—with the exception of the optional on-vehicle applications (GPS/AVL, student ridership management, driver time and attendance tracking, parent portal), which are licensed on a per vehicle basis.





## Lafayette Parish School Board, LA

### EDULOG Cost Proposal in Response to RFP# 18-16

## ROUTING AND PLANNING SOFTWARE FOR STUDENT TRANSPORTATION, FIELD TRIP MANAGEMENT AND FLEET MAINTENANCE ADMINISTRATION

March 29, 2016

	Units	Unit Price	Total First Year Cost	Total Recurring Annual Cost Each Subsequent Year*
<b>Currently Licensed Software by the Lafayette Parish School Board</b>				
EDULOG SQL Advanced Routing and Scheduling Software with:				
1) Student Database Management				
2) Bus Stop Component				
3) Bus Run Component				
4) Bus Route Component				
5) Security System				
6) Report Writer				
7) Route Driving Directions				
8) Multi-Bus Transfers				
9) Attendance Boundary Display Software				
10) EDULOGWeb Interface				
11) One Screen Routing				
12) Special Needs Transportation Module (would be new to the LPSB)				
Geocoding Software				
Shape Server Software with Heads Up Digitizing				
Run Building and Route Coupling Optimization Software				
WebQuery Software				
Log2Shape GIS Export Utility				
EDULOG Boundary Planning/Redistricting Software				
Annual License and Maintenance Fee for All of the Above	1		\$5,090.00	\$5,090.00
<b>Services</b>				
Geocode Update	1	Included	Included	
Upgrade to Latest SQL Version of Routing and Scheduling Software	1	Included	Included	
Five Days of On-Site Training in One Session (travel and lodging expenses not included)	1	Included	Included	
Unlimited Remote System Training Through the Internet During the First Year	1	Included	Included	
<b>TOTAL FOR SOFTWARE SYSTEMS AND SERVICES*</b>			<b>\$5,090.00</b>	<b>\$5,090.00</b>

Education Logistics, Inc. (EDULOG)—Response to RFP# 18-16



Innovative Technology. Demonstrated Savings. Proven Success.

	Units	Unit Price	Total First Year Cost	Total Recurring Annual Cost Each Subsequent Year*
<b>Add WebSchoolAssistant Software</b>				
EDULOG Field Trip Management Software with:				
1) WebRequest Module				
2) Approval Rule Management System				
Initial License Fee for the Above	1		No Charge	
Annual License and Maintenance Fee for the Above	1			No Charge
<b>Add Field Trip Management Software</b>				
EDULOG WebSchoolAssistant Software				
Initial License Fee for the Above	1		No Charge	
Annual License and Maintenance Fee for the Above	1			No Charge
<b>Add Fleet Maintenance/Parts Inventory Software</b>				
EDULOG Fleet Maintenance/Parts Inventory Software with:				
1) Vehicle Module				
2) Work Order Module				
3) Parts/Inventory Module				
4) Personnel Management Module				
5) Reports				
6) Fuel Reader Interface				
Initial License Fee for the Above	1		\$2,400.00	
Annual License and Maintenance Fee for the Above	1			\$600.00
<b>Add SIF Agent</b>				
EDULOG SIF Agent Software				
Initial License Fee for the Above	1		\$7,000.00	
Annual License and Maintenance Fee for the Above	1			\$1,750.00
<b>Add GPS/AVL Hardware and Software for School Buses (Including Cellular Data Fees)</b>				
CalAmp LMU-4220 GPS Devices with External Antenna, Sensor Inputs, and "Panic Button" (per vehicle)	285	\$265.00	\$75,525.00	
Shipping and Handling Fee for the Above (per vehicle)	285	\$15.00	\$4,275.00	
On-Site Installation of CalAmp LMU-4220 GPS Devices with External Antenna and "Panic Button" (Travel and Lodging Expenses Included)	285	\$185.00	\$52,725.00	
EduLog EduTracker GPS/AVL Software System with Edulog Routing and Scheduling Integration and Comparative Analysis Capabilities (per vehicle--includes 5MB cellular data plan from Verizon Wireless)				
EduTracker GPS/AVL Software Initial License Fee (per vehicle)	285	No Charge	No Charge	
Monthly Software License/Maintenance/Support Fee (per vehicle --includes 5MB cellular data plan from Verizon Wireless)	285	\$13.00	\$44,460.00	\$44,460.00
<b>ADDITIONAL TOTAL FOR GPS/AVL HARDWARE AND SOFTWARE*</b>			<b>\$176,985.00</b>	<b>\$44,460.00</b>





	Units	Unit Price	Total First Year Cost	Total Recurring Annual Cost Each Subsequent Year*
<b>Add Vehicle Diagnostics Hardware and Software to GPS/AVL</b>				
Additional Fee for CalAmp LMU-4220 with Vehicle Diagnostics Capabilities (per vehicle--must be ordered at project start, cannot be retrofitted, includes additional installation fee)	285	\$125.00	\$35,625.00	
Monthly Fee for Edulog Vehicle Diagnostics (per vehicle)	285	\$4.25	\$14,535.00	\$14,535.00
<b>ADDITIONAL TOTAL FOR VEHICLE DIAGNOSTICS*</b>			<b>\$50,160.00</b>	<b>\$14,535.00</b>
<b>Add Student Ridership Management Hardware and Software (Requires GPS/AVL)</b>				
HID ProxPro RFID Readers--Includes Cabling, But Does Not Include the Required RFID Cards (per vehicle)	285	\$195.00	\$55,575.00	
Shipping and Handling Fee for the Above (per vehicle)	285	\$15.00	\$4,275.00	
On-Site Equipment Installation of HID ProxPro RFID Readers (per vehicle)---Must be done in the same sessions as the CalAmp LMU-4200 GPS Devices (Travel and Lodging Expenses Included)	285	\$50.00	\$14,250.00	
HID ProxPro Student Identification Cards (Non-Printed, Shipping and Handling Included, per student)	31,000	\$2.65	\$82,150.00	
Edulog Student Ridership Management Software System				
Student Ridership Management Software Initial License Fee (per vehicle)	285	No Charge	No Charge	
Monthly Software License/Maintenance/Support Fee (per vehicle)	285	\$5.00	\$17,100.00	\$17,100.00
<b>ADDITIONAL TOTAL FOR STUDENT RIDERSHIP MANAGEMENT*</b>			<b>\$173,350.00</b>	<b>\$17,100.00</b>
<b>Add Driver Time and Attendance Hardware and Software (Requires GPS/AVL)</b>				
CalAmp MDT-7 Android Tablets for use with eDTA--Includes Mounting Hardware (per vehicle)	285	\$417.00	\$118,845.00	
Shipping and Handling Fee for the Above (per vehicle)	285	\$15.00	\$4,275.00	
On-Site Equipment Installation of CalAmp MDT-7 Android Tablets (per vehicle)---Must be done in the same sessions as the LMU-4220 GPS Devices (Travel and Lodging Expenses included)	285	\$55.00	\$15,675.00	
Edulog eDTA Driver Time and Attendance Software System				
eDTA Software Initial License Fee (per vehicle)	285	No Charge	No Charge	
Monthly Software License/Maintenance/Support Fee (per vehicle)	285	\$5.00	\$17,100.00	\$17,100.00
<b>ADDITIONAL TOTAL FOR DRIVER TIME AND ATTENDANCE*</b>			<b>\$155,895.00</b>	<b>\$17,100.00</b>



	Units	Unit Price	Total First Year Cost	Total Recurring Annual Cost Each Subsequent Year*
<b>Add Parent Portal Software (Requires GPS/AVL)</b>				
Edulog Parent Portal Software System				
Parent Portal Software Initial License Fee (per vehicle)	285	No Charge	No Charge	
Monthly Software License/Maintenance/Support Fee (per vehicle)	285	\$2.00	\$6,840.00	\$6,840.00
<b>ADDITIONAL TOTAL FOR PARENT PORTAL*</b>			<b>\$6,840.00</b>	<b>\$6,840.00</b>
<b>Add Google Map Display Capability</b>				
Google Map Display Capability Software Initial License Fee (per vehicle)	285	No Charge	No Charge	
Monthly Software License/Maintenance/Support Fee (per vehicle)	285	\$1.50	\$5,130.00	\$5,130.00
<b>ADDITIONAL TOTAL FOR GOOGLE MAP DISPLAY CAPABILITY*</b>			<b>\$5,130.00</b>	<b>\$5,130.00</b>
<b>Optional Hosting by Edulog For All Applications</b>				
Servers, Operating Systems, SQL Licenses, CAL Licenses		\$7,500.00	\$7,500.00	
Monthly Hosting Fee	12	\$1,000.00	\$12,000.00	\$12,000.00
<b>ADDITIONAL TOTAL FOR HOSTING FOR EDULOG ALL APPLICATIONS*</b>			<b>\$19,500.00</b>	<b>\$12,000.00</b>

\*Please note that recurring annual and/or monthly fees paid to Edulog (including the annual license and maintenance fee) are subject to yearly CPI adjustments, with payment of these recurring fees due each year in the month of July. The last CPI amount published before the annual invoicing will be used to calculate the adjustment.

The price and fees above are exclusive of all taxes, including but not limited to sales, use, and like taxes, state or local taxes on lodging or meals, resort taxes, and of all fees, including but not limited to fees paid in connection with customs/duty such as brokerage GST fees, disbursement fees, entry prep fees, customs GST, duty amounts, etc. Any tax and/or fee EDULOG may be required to collect or pay upon the delivery or use of the SOFTWARE or GPS/AVL HARDWARE or upon the provision of services shall be paid or reimbursed to EDULOG by CUSTOMER.

All prices and fees are valid for 120 days.

Travel and lodging expenses (except where noted) to be billed as incurred.



## RESPONSE TO GENERAL SPECIFICATIONS FOR TRANSPORTATION MANAGEMENT SOFTWARE

### 2.10 General Specifications for Transportation Management Software

#### Licensing

1. Indicate whether annual fees are for licensing, maintenance and support, or all of the above. If annual fees are discontinued, what is the status of the license for the software?

Annual fees are for licensing, maintenance, and support. The district can change its support plan to reduce the annual costs, but an annual software license fee still must be paid.

2. Indicate any license limitations for the number of users.

The software license is a site license; there is no limitation on the number of users who can access the software.

3. Indicate whether a user might operate the software from any connected computer with their login credentials, or if the software is licensed to a specific machine.

The software is licensed as a full-site license; licenses are not restricted to specific computers. Anyone with a log-in credential can access the EDULOG systems.

#### Obsolescence Protection

1. Indicate the historical and expected schedule for releases that increase the functionality of the software.

Within the next 12 months a parent transportation request module will be introduced so that parents can request transportation for their children electronically; the user interfaces will be replaced with new versions; and there will be a new version of the EDULOG GPS/AVL system.

2. If the vendor substantially rewrites the software for an updated version, will a new purchase be required or will it be covered by the annual fee?

Updated versions are free upgrades as long as an annual service, license, and maintenance agreement is in place between the district and EDULOG.

#### System Operating Environment and General Architecture

1. System should operate under Microsoft Windows 7 or 8.

Yes.

2. System should be able to run on a virtualized server.

Yes.

3. System should work on Windows Server 2008, 2008 R2, 2012 or 2014.

Yes.



4. Please provide a list of minimum and recommended hardware configurations.

Please refer to the next two pages for the recommended server configuration of an EDULOG routing and scheduling system.



## Edulog SQL Server Specifications & Setup

### Physical Server – Recommended Specifications

- Windows Server 2012 R2 Standard (x64)
- Microsoft SQL Server Standard 2012 (x64)
- Intel Xeon E3 v2 “Ivy Bridge” or better Quad-core processor
- 8 GB RAM minimum (16GB+ for Extremely Large Districts)
- 200GB available storage in a RAID (1, 5, 6, 10) array. (600GB+ for Extremely Large Districts)
- Microsoft SQL must be installed on the same server as the “Edulog SQL” software -

*This allows the system to access data quickly and negates network bandwidth issues. Edulog Support can also respond quicker since MSSQL Management Studio is in the same location as the applications. (See Alternative Edulog Server Setup section below.)*

- Remote Desktop Services (TS) Role with Licensing for Users of Edulog pre-configured
- A printer with drivers compatible with your operating system
- Edulog requires remote access to the server through RDP (Remote Desktop) or VPN+RDP –
  - o Please name the account for Edulog Support staff “EdulogSupport”
- Edulog will need a user account with Administrative privileges on the server (Domain or local account) and may require an AD Service Account
- Server must be addressable from the internet if the software is intended to be accessed outside the network
  - o Port 80 TCP for HTTP access
- Server will need internet access and SFTP access during installation and upgrades. This is needed so that Edulog can download the necessary setup files for the install or upgrade
  - o Port 22 TCP for SFTP access
- If SQL Server is pre-installed, Edulog requires its Windows account to be assigned “SysAdmin” role in SQL Management Studio for the Edulog Instance

### Virtualized Edulog SQL Server – Additional Requirements

When Edulog SQL is operating in a virtualized environment, in addition to the information above, please note these requirements.

- The virtual machine should be configured with a single virtual CPU with four or more cores, rather than four separate CPUs each with a single core. (Alternatively referred to as a single “socket” with 4 CPU cores.)

Revised 2015-06-11





## Standard Edulog Server Setup

Edulog has a standard server setup, described by the following:

1. Before Edulog is installed, a verification is done by Edulog staff to ensure that the server meets required specifications. Server verification checks the following:
  - Operating System
  - CPUs (Cores)
  - RAM
  - HD Space
  - Remote Desktop Services Role is Installed
  - MS SQL Server Installation and Permissions
  - Edulog Support Windows Account Permissions
  - Ports required for SFTP are open
2. Edulog Core Software is installed on the server.
3. Edulog is installed at [Partition]:\ELT.
4. Edulog Databases are installed at [Partition]:\ELT\[Data Area]\server\SQLDB.
5. Edulog Asks RDP Users to connect to the server to create their RDP profiles.
6. Edulog enables access to the Core Software for desired RDP users.
7. If requested, Edulog will create a Remote App installer for use over RDP – *Note: Edulog does not Install or Configure RD Web services.*
8. If Additional Modules have been purchased, installation of those Modules will be scheduled.

## Alternative Edulog Server Setups

Non-standard Edulog setups may incur additional fees. Sites requesting alternative setups can submit a request that details their specific needs. Edulog staff will review this document and provide information on additional fees if the setup requires custom development, testing, or installation configuration research.

## Important Java Update Notice

During the installation of Edulog's Web Applications, the specific version of Java required for functionality is installed. Allowing updates to Java while Edulog's dependent services are running will break Java. For this reason, it is **strongly suggested** to not update or change the installed version of Java after Edulog's install, without specific instruction or guidance from Edulog's Support staff to ensure the use of a compatible version of Java. Updating, changing version, or altering the Java installation, without specific Edulog instruction or guidance which results in the need for Edulog repair may result in a billable service.

Revised 2015-06-11



5. System should use Microsoft SQL Server as the system database.  
Yes.
6. The database must allow the District to connect to the database with third party software, if desired.  
Yes.
7. All student data should be stored and maintained in a single database.  
Yes.
8. The system should be self-maintaining system. No periodic maintenance functions should be required to update maps, runs or student information when any of those elements are changed.  
No transportation management system for K-12 school bus routing and scheduling is completely self-maintaining.
9. System should not require users to exit the system to process any changes to students, runs, maps or boundaries. Please indicate all functions that require just a single user to be logged in while that function is running.  
With the current EDULOG system, only user at a time can edit the map. This will change with a future release to allow multiple users to the edit the map.
10. System should be scalable to accommodate both current and future populations without requiring a different version, program, or expense for adding additional students and/or runs.  
Yes, the EDULOG system is the most scalable in the industry. EDULOG's clients in North America include the largest school districts (Toronto, New York City, Chicago, Atlanta, Los Angeles, Miami) and the largest school transportation service provider (First Student). As a further example, EDULOG was recently awarded a contract for the Kingdom of Saudi Arabia after an intensive, three-year examination of all pupil transportation management software vendors worldwide. The contract, which involves new developments in student safety, management control, operational flexibility, and stakeholder transparency, has EDULOG supplying software, professional services, and staff for a project that is expected to transport three million students on more than 60,000 buses by 2017.
11. All proposed software systems should come with electronic, context-sensitive help files.  
Yes.

### System Security

1. Access rights should be defined by user groups, with each member of the group inheriting the group rights.  
Yes.
2. Each user should be assigned a unique user id and password.  
Yes.
3. The system should support Active Directory.  
The EDULOG GPS/AVL system currently supports Active Directory.



4. System provides a fine grain of control over functional elements of the system so that users may be allowed “view,” “edit” and/or “print” abilities.  
Yes.
5. System provides for multiple levels of access to different functionality, such as read-only or full read-write access.  
Yes.
6. Student records are automatically stamped with the operator name and time of change.  
Yes, in a future release.
7. Run records are automatically stamped with the operator name and time of change.  
Yes, in a future release.
8. System should allow the operator to mark certain student records as “confidential,” and to print such instructions on driver sheets.  
Yes.
9. Browser-based applications should provide for the use of Secure Sockets Layer (SSL) encryption or better.  
Yes.

### System Archiving

1. System automatically creates an audit trail tracking changes in the system, student or run data.  
Yes, in a future release.
2. The audit trail should track the operator name, machine, date and item changed.  
Yes, in a future release.
3. The audit trail should be accessible only to those with appropriate access rights.  
Yes, in a future release.
4. System automatically archives transportation information nightly.  
Yes.
5. The archived data should be stored in a SQL Server database, indexed by day/date for all data stored.  
Yes.
6. The archived data should remain available until (and unless) the District actively removes the data.  
Yes.



## **Geographic Information System (GIS)**

### **Map Source and Updates**

1. The system should provide an electronic map that represents the District's streets, including known subdivisions or other roads, up to the time of delivery of the system.  
Yes.
2. The system allows for periodic importing of a new map from commercial, standard mapping formats, such as ESRI or MapInfo.  
Yes, with the EDULOG GIS import utility.
3. The system allows importing of successive, periodic changes in the boundary layer information from the commercially-available formats, such as ESRI or MapInfo.  
Yes, with the EDULOG GIS import utility.
4. Protects any District-initiated changes or customizations in the map while accepting the new information from an imported map.  
Yes.
5. Indicate any initial and continuing costs associated with displaying satellite views of the included map.  
None, if the satellite images come from a public source.
6. Satellite views must be displayable on any map, including during the run building process.  
Yes.
7. Satellite views must scale automatically as the map scale is altered.  
Yes.
8. Displays non-transportation-related features such as waterways, railroads, etc.  
Yes.
9. Displays icons for schools and other landmarks.  
Yes.
10. Allows multiple users to be editing the map simultaneously (with appropriate user rights).  
Yes, in a future release.
11. Allows multiple users to work with the map, student data, and/or routing when others are also working with the map.  
Only one user can work on the map at any one time, although unlimited users can be in other parts of the system.
12. Includes an Undo function to undo individual actions back to the last save.  
Yes, in a future release.



## Encoded Map Data

1. The map should encode one-way streets and no travel streets in such a way that routing functions cannot incorrectly assign buses or travel on such streets.

Yes.

2. The map should encode any size restrictions on roads, such as roads where large buses should not travel, but smaller buses can travel.

Yes.

3. The map should encode customizable travel speeds for individual streets to improve the predictive timing of runs.

Yes.

4. Stores different speeds for different directions on the same road (such as uphill and downhill).

Yes.

5. The map should allow for different travel speeds on the same road at different times of the day. Describe how this is done and how runs will use the different speeds to create the run times.

Yes. All student transportation management systems calculate stop and destination times using what the street segment distances and travel speeds stored in the system's databases. Most (including EDULOG) perform these calculations using the actual travel path along the street network rather than "crow flight" or rectangular paths.

But EDULOG goes beyond this in several areas:

- EDULOG travel speeds along a segment can be set to account for different speeds depending upon the direction of travel (right and left sides). This is useful for steep hills or streets that are more heavily congested on side than the other (a frequent occurrence in downtown urban areas).
- The travel speeds can also differ according to the time of day, and the system calculations for stop and run times automatically take this into account (buses may travel freely during mid-day, but are slowed by congestion during the morning rush hour).
- You can manually edit EDULOG system times (arrival time at stop, bus load time, arrival time at school, etc.) without affecting the underlying geocode. This editing capability is useful to for adjusting times to be more realistic during the start of a school year, snow days, etc.
- And with the optional EDULOG GPS/AVL system, you can have the most accurate stop calculations possible. The EDULOG GPS system records the actual times and distances at all the waypoints (including bus stops), and then this information can be passed to the EDULOG routing and scheduling system to improve the accuracy and completeness of the routing data.

6. Allows the simultaneous application of attributes (speeds, one-way, etc.) over a series of map segments, rather than only a segment at a time.

Yes.

7. The map should mark turn restrictions to prevent the routing system from creating a run that makes an undesirable turn. Turning restrictions should be able to allow for smaller buses to make a turn while prohibiting the larger buses.

Yes.





8. The map should include the stop locations as currently implemented. If three different schools stop at the same intersection, how many stops are required for the transportation of those students to the three separate schools?

Yes. One stop location would be all that would be necessary.

9. Allows the operator to add notes to a bus stop (or other location), indicating on the map where such annotated stops/locations are.

Yes.

10. Provide the ability to add a new school or a new academic program without having to create completely new sets of stops for that school or program.

Yes, this is a standard feature of the EDULOG system.

### **The Maps and Student Safety Features**

1. The system should allow the operator to encode streets that students should not cross to get to their bus stop. The system should allow either the prohibition for all students to cross, or allow some grades to cross while restricting others.

Yes.

2. The system should allow the operator to indicate streets where students would automatically receive a curb-to-curb stop.

Yes.

3. The system should allow the operator to indicate streets where any stop on that street is restricted to right-side only bus service.

Yes.

4. The system should allow the operator to restrict certain corners to prevent assignment of a stop on that corner.

Yes.

5. The system should store and display the locations of sexual predators on the electronic map.

Yes, with the EDULOG hazard display software.

6. The system should store and display a user-defined “threat zone” or radius around the predator’s location.

Yes, with the EDULOG hazard display software.

7. The system should automatically discover and display any stops currently inside that threat zone. The display should also be automatic for newly-added predators.

Yes.



8. The system should warn the operator of conflicts between predator locations and school stops, whether or not the threat zone is displayed. When new predators, newly-imported students, or new stops are added, the system should automatically check for and display any conflicts.

Yes.

## **Student Data**

### **Connecting to the District's Student Information System**

1. Provides the ability to establish periodic, unattended downloads from the District's student information system into the software.

Yes. ASCII file transfer is the most common interface used by EDULOG clients, although we also have an SIF agent that has been implemented at some client sites. The simplest interface to maintain and operate is an automated file transfer system based on adds/changes/deletes. However, if the district has already invested in an SIF zone integration server, EDULOG would be pleased to work with the district on an SIF information transfer process. EDULOG currently has a subscription SIF agent, and we are now working with a firm that has extensive experience with SIF agents for interfaces between transportation and student information systems to develop an EDULOG combined subscription/publishing agent.

EDULOG also offers something that goes beyond current SIF requirements: an address validation system that can be used with a variety of student information systems. This address validation interface has been used successfully by EDULOG clients for more than ten years, and it involves automatically comparing the residence address that is entered into the student information with a table of valid addresses (street name, address range, etc.) from the EDULOG system geocode. The address validation interface doesn't block the entry of an invalid address into the student information system (because there are a number of reasons why the address might be legitimate), but it does warn the person entering the data that there may be a discrepancy, and further checking of the address would be useful.

The core of the EDULOG system is the student database management module, used by both the transportation and planning staffs. The EDULOG system uses the same student database for transportation and boundary planning functions—unlike many competing systems, there is no need to create and maintain separate databases. Partial updates to change student information and add or delete students are always possible with the EDULOG student database.

The initial database is created by downloading the relevant demographic information from the district's master student database. The EDULOG system allows the selection of a variety of data fields to be stored in the system's database. Once the key data fields are identified by the organization's staff working with the EDULOG project team, a procedure will be created and verified to automate the data loading tasks in the future. The system implementation team will design the procedure to load the data after it is downloaded to the system's disk drive.

The data entry tasks will be completed using this module. Some highlights of the system's data entry capabilities include:

- Batch and interactive data entry
- Extensive front-end editing functions to identify incorrect addresses, etc.



- Automatic assignment of school, bus stop, route, and other relevant information based on a student's address and grade
- Selective batch updates (for example, move all students up one grade)
- Immediate graphic location of student based on address
- Comprehensive report generation and data query
- selected, partial updates to student records without having to replace the entire database

One important distinction of the EDULOG system with major consequences for transportation eligibility determination, stop assignment, and boundary planning is that every student in the database has a unique record, and can easily be given an assignment different from every other student at the same address. The EDULOG system does not force every student living on the same address segment into a "rider group" for the purposes of determining transportation eligibility or stop assignment.

2. Provides the ability to establish periodic, unattended uploads to the District's student information system.  
Yes.
3. Accepts ASCII downloads in fixed-field, comma delimited, or tab-delimited formats.  
Yes.
4. Provides the operator the ability to preview the import prior to running to verify that it will import properly.  
Yes.
5. Processes downloaded data during the import process to geocode students and assign each student to the appropriate walk/ride status, bus stop, and school (according to the established system rules).  
Yes.
6. Processes downloads such that any address corrections the Transportation Office has made are preserved, even when the same student is downloaded with the same incorrect address another time.  
Yes.
7. Processes downloads with field level intelligence rather than overwriting a blank field in the download where the Transportation Office has data in the receiving field.  
Yes.
8. Exports data to other systems (ASCII, ODBC, SIF).  
Yes.
9. System shall use the student ID as found in the district's student information system.  
Yes.
10. System shall have the ability to assign ID numbers to non-district students, such as private school students, if those student records have no ID number.  
Yes.



### Geocoding

1. System automatically geocodes students, individually or in batch, based on their house number and street name.  
Yes.
2. Automatically accepts standard variations, such as ST/Street, AV/Ave/Avenue, etc.  
Yes.
3. Automatically recognizes, and accepts, single streets that might be known by more than one name (i.e. State St/Run 5).  
Yes.
4. Accurately locates a student where the same address occurs more than once in the map (i.e. two addresses of 50 Main St in different communities).  
Yes.
5. Allows for manual geocoding.  
Yes.

### Students

1. In addition to the home address, the system shall allow for multiple addresses for a single child (i.e., different AM pickup, different PM drop off).  
Yes,
2. System should allow for different pickup/drop-off addresses on different days.  
Yes.
3. System allows for storage of a mailing address that may not be the same as the home address.  
Yes.
4. System stores the school of attendance. The home-to-school distance should be automatically calculated and displayed.  
Yes.
5. System stores the school of residence (which may differ from school of attendance, as in Magnet programs).  
Yes.
6. The system should store emergency contacts, each with multiple possible phone numbers and the indication of the relationship of the contact to the student.  
Yes.
7. System should allow the operator to enter notes in paragraph form.  
Yes.



8. System stores a photograph of the student. The photographs may be imported individually or in batch without vendor assistance.  
Yes.
9. System stores a Family ID code that associates students with their families. When changes are made to one sibling, the system should offer the operator the ability to make the same change to other siblings without the need to open each individual student record.  
Yes, in a future release.
10. The system should allow the operator to attach files in standard formats to the student record. These attached files should be stored with the system and remain with the student through grade advancement.  
Yes, in a future release.

#### **Transportation Assignments: Schools**

1. System should automatically determine the appropriate school where the student's academic program allows assignment to school by boundary.  
Yes.
2. System should allow for varied school assignment options including open enrollment, magnet, and/or private schools where the student is allowed to attend without reference to an enrollment boundary.  
Yes.
3. System should automatically assigns walk/ride status based upon the school of attendance rather than only the school of residence (the home school).  
Yes.

#### **Transportation Assignments: Bus Stops**

1. System should automatically determines the appropriate bus stop for transportation-eligible students, based on user-defined maximum walk-to-stop distances.  
Yes.
2. System should indicated the bus stop corner (or directional) to which the student is assigned, i.e. 45 Broad St (NE), where the (NE) indicates the northeast corner.  
Yes, in a future release.
3. System should automatically update the corner assignments if runs are altered to approach the student's stop from a different direction.  
Yes, in a future release.
4. System automatically allows the operator to assure that the same stop is assigned morning and afternoon, even if a closer stop is available on one of the runs.  
Yes.





5. System should allow the operator to create a rule so that defined sets of students would automatically receive a curb-to-curb stop.  
Yes.
6. System should allow for a simple manual creation of a curb-to-curb stop for any student.  
Yes.
7. System should allow the operator to override any automatic bus stop assignment, and retain that manual assignment through any future downloads and automated processing.  
Yes.

### **Transportation Assignments: Bus Runs**

1. At user discretion, the system can be set to assign bus stops according to the stops that will take the student to their school even if a closer stop is available (but is not on a run).  
Yes.
2. The system should automatically assign students to transfer buses (where a student must ride more than one bus to arrive at the appropriate school).  
Yes.
3. The system should automatically assign appropriate students to shuttle runs between schools (i.e. a defined group of students attends one school for an hour, then shuttles to a different location).  
Yes.
4. The system should track and assign students with different bell times on different days of the week (such as one day a week early dismissal).  
Yes.

### **Special Needs: Extra Data Elements and Routing Functions**

1. The student record should store the special equipment needs of the student, allowing for multiple requirements (i.e. wheelchair and air conditioning).  
  
Yes. Special education transportation is an especially demanding task for school transportation staff, and is generally run more or less independently from the regular transportation functions because most special education students require special buses, on-bus aides, and individualized door-to-door service. The large number of extensive changes made daily makes the task of managing special education transportation even more complex.  
  
In the EDULOG system, special education routes can serve two or more schools, with student load fluctuations from stop to stop. As changes are made in the routes, the program ensures that the vehicle can still deliver students within school time limits and that the riding time does not exceed the limit for any student.



The EDULOG special education transportation module is interactive, on-line software designed to provide managerial control over all aspects of the special education transportation. With management support as a goal, the system allows for:

- Individual student needs and disabilities (service dog, aide in attendance, wheelchair, oxygen, car seat, etc.)
- Maximum student riding time
- Maintenance of feasible routes and schedules—the software checks to ensure that student restrictions and needs are properly matched to available vehicles with the required equipment.

This user-friendly system provides an effective way to store and retrieve all of the data about special education students, special education vehicles, and the routes and schedules used to transport students to schools and centers. The system also has remarkable versatility in controlling the daily management of re-routing and rescheduling required by the constant number of changes made wherever special education transportation is undertaken. The EDULOG system is designed to offer users the option of either having all or part of the rescheduling tasks performed automatically by the system, or of simply allowing the system to present all feasible rescheduling options and then making the final decisions independently of the computer. In either case, the system considers all of the possible student constraints (times, distances, disabilities and special needs, vehicles in service and their equipment, etc.) to ensure that the alternatives presented satisfy all specified parameters. The system verifies that all routes and schedules are acceptable concerning student needs and vehicle specifications—whether bus assignments are entered manually or decided automatically by the system.

The following are the standard data elements for special need students (note the number of user-defined fields available to the district):

- Air Conditioning
- Wheelchair
- Harness
- Oxygen
- Car Seat - 1
- Attendant
- Car Seat - 2
- Bee Allergies
- Seasonal Allergies
- User defined special need 9
- User defined special need 10
- User defined special need 11
- User defined special need 12
- User defined special need 13
- User defined special need 14
- User defined special need 15

2. The student record should store additional load time based on student-specific information to be added to a run for the student (i.e. an ambulatory student using a walker). This time should be added to the run time automatically when the student is placed on the run, and appropriately removed if the student is no longer on the run.

Yes.



3. The system should allow a student to attend multiple schools on different days, or even on the same day.  
Yes.
4. The system should provide appropriate fields to communicate student information to the driver on a Special Needs run. Indicate the types of information that may be listed for the driver.  
Yes—see response above to item 1 in this section.
5. When a new student is added to an existing run/route, the system should automatically indicate if any conflict exists between the student's equipment needs and the equipment available on the currently assigned bus.  
Yes.

### **Scheduling Future Student Changes**

1. The system should allow calendar-based changes to student transportation needs. For example, scheduling the date on which an address change will occur or the time period during which a student would be on a different run.  
Yes.
2. The system should automatically update routing information in the weekend prior to the indicated changes so that all users see the appropriate information for the current week.  
Yes.
3. The system should allow for continuous alternate scheduling, such as where one week a child would be picked up at the mother's address on Monday, Wednesday, and Friday, but Tuesday and Thursday the father's address. The next week would be Monday, Wednesday and Friday at the father's address and Tuesday and Thursday at the mother's (frequencies at the discretion of the operator/parent request).  
Yes.
4. All changes in transportation will be visible on the record with the change. All changes in transportation resulting from the scheduled change will be immediately available.  
Yes.
5. The operator should be able to enter batch change requests, such as changing all students at a particular school to an early out schedule on a given day.  
Yes.

### **Student Filter Functions**

1. The system should allow the user to search by named fields, such as name, school, grade, etc. by entering the desired information into the appropriate fields.  
Yes.



2. The system should allow the operator to create customized filters linked with and/or clauses.  
Yes.
3. The system should allow the operator to store commonly used filters with a name and to call up that filter by the stored name.  
Yes.
4. The system should easily filter students whose home location is or is not located on the map.  
Yes.
5. The system should easily filter students inside or outside of any selected boundary.  
Yes.
6. The system should easily find a student by name and name of the bus driver.  
Yes.
7. The system should easily find students whose ride time exceeds an input number of minutes.  
Yes.
8. The system should easily find any student whose transportation information (such as bus stop, bus number, run/route number, or time at the bus stop) has changed since the last time the notifications were printed.  
Yes.

### **Student Rollover Functions**

1. Transportation personnel must be able to grade advance students to begin work on the next year's runs without altering the runs (or students) for the current year or creating a separate database.  
Yes.
2. The system should allow a user-initiated grade-advance (rollover) that moves the student from grade to grade, school to school, and stop to stop (if district rules require such a changed based on the new grade level). This should be a single process, not requiring multiple iterations.  
Yes.
3. The District's rollover data may be imported into the data used for next year's runs without altering any current runs.  
Yes.



## **Routing Functions**

### **Basic Routing Functions**

1. The system should automatically create a visual display of the appropriate bus stops when selecting the runs for a school. The operator should not have to manually load multiple layers to prepare for routing.  
Yes.
2. The system should automatically indicate the number of students at any stop. The system should indicate which students might have to cross the street to reach the bus stop.  
Yes.
3. The system should be capable of displaying the home locations for students at a selected stop.  
Yes.
4. System will not pick up a student at a right-side restricted stop unless the operator intentionally overrides the rule (and subsequently warns of the exception to the rule).  
Yes.
5. The system should allow students from different schools to be on the same bus at the same time, tracking their arrival times at each individual, appropriate schools.  
Yes.
6. The system should create and display runs according to the allowed travel paths along the streets.  
Yes.
7. The system will automatically determine the best time-path from one mouse click to the next.  
Yes.
8. Runs may be edited to change stop sequences, paths or students on the run.  
Yes.
9. The system should automatically update student information (bus stop/ride time, etc.) when a student is added to a run.  
Yes.
10. The system should allow the operator to add students to any run on an ad hoc basis, such as a No Child Left Behind student who must ride the local bus and transfer.  
Yes.
11. The system allows the examination of the run at any point, displaying the students on board at that point, along with critical demographic information (name, birth date, phone number). Similarly, the system should report on students that have yet to board the bus.  
Yes.
12. The system should automatically prefer to go around blocks rather than create a turnaround in the middle of a street. The system should provide an override when such a turnaround might be desired.  
Yes.





13. The system should allow the operator to create designated turnaround locations which the system will use automatically, when appropriate.

Yes, in a future release.

14. The system should allow for afternoon runs created by copying or mirroring a morning run.

Yes.

15. The system should allow for multiple pick-up/drop-off points for multiple schools. For example, a single point might service two or more schools, or a single school might have more than one desired service point (i.e. regular education buses at one stop and special needs buses at a different location).

Yes.

16. The operator should be able to easily indicate a closed street while working with runs. The system should automatically reroute all runs that travel through the closed section of road.

Yes.

17. The system should integrate with Google maps and enable the router to virtually drive the run along the photographic representation of the map.

The EDULOG system does integrate with Google maps.

#### **What-If Functions for Runs**

1. The system should allow the operator to create any number of what-if scenarios without altering current runs.

Yes.

2. The system should save multiple what-if scenarios in the same database; the system should not require any replication of the database in order to hold or store such scenarios.

Yes.

3. Map changes made in one routing scenario automatically appear in all of the what-if scenarios without any user intervention or maintenance routines.

Yes.

4. The system should allow the operator to create a complete picture of a what-if scenario, including both the runs and the fleet schedule that would be used for those runs.

Yes.

5. The system should have the ability to define students and schools and have the system automatically generate an efficient run according to user-defined parameters.

Yes.



6. The system should allow the operator to select preset optimization styles ranging from cluster stops (urban routing) to runs optimized for low loads and long distances (such as special needs or rural runs).

Yes.

### Special Needs Routing

1. The system should handle all special needs routing within the same software and database as regular education routing.  
Yes.
2. The system allows operators to find and identify subsets of special needs students at a given school for separate transportation (such as identifying transporting students with behavioral development issues within the group of special needs students attending the same school at the same time).  
Yes.
3. The system should graphically display the location (and number) of students at a stop with specific equipment needs, such as wheelchairs.  
Yes.
4. The system should automatically warn of a mismatch between the equipment on the selected vehicle and the equipment needs of a student being loaded onto that vehicle.  
Yes.
5. The system should automatically warn the operator when the capacity of any special equipment for the assigned bus has been exceeded.  
Yes.
6. The system should automatically update the run time appropriate for the (user-defined) time designated for a student to be loaded into the special equipment on a particular bus.  
Yes.
7. The system should allow the operator to assign monitors and/or aides' names to runs.  
Yes.
8. The system should have the ability to create different runs for different days, as required.  
Yes.
9. The system should allow mainstreaming of particular special needs students on regular education buses.  
Yes.
10. The system should allow the operator to assign a regular education student to a special needs bus when desired (such as a sibling of a special needs student).  
Yes.



### Scheduling Run Changes

1. The system should allow routers to work on next week's runs without making changes to any live runs for the current week.  
Yes.
2. The transition from the planned runs (for next week) to the current runs shall be automatic and without manual intervention.  
Yes.
3. The system will allow routers looking at runs for the following week to see and route students whose scheduled changes will occur during that week.  
Yes.

### Run Filtering

1. The system should allow the operator to find any bus/run that passes by a map location or bus stop. The operator should be able to limit the search to particular times.  
Yes, if the EDULOG GPS/AVL system's historical reporting and display functions are used.
2. The system should allow the operator to find any bus/run that passes over a selected section of a road. The results may be for inbound, outbound or both runs along the selected section of street.  
Yes.
3. The system should allow the operator to find and easily display any route or set of runs (including mixes of morning/afternoon and different schools).  
Yes.
4. The system should allow the operator to find any run that has been changed since the last time directions were printed for the drivers.  
Yes.

### Run Coupling

1. The system should automatically create a graphic display of runs assigned (or to be assigned) to vehicles. The graphic display should represent the length of each runs and the scheduled time it is to be run.  
Yes.
2. The system should allow for a user-defined "sit time" where a bus must arrive at a school at a specified time and leave after a specified duration. This time should be automatically calculated into the run coupling functions.  
Yes.



3. The system should allow for an easy, drag-and-drop method of changing the assigned bus or start times.  
Yes.
4. The system must automatically use real map-based times and distances to calculate the available time between any two runs.  
Yes.
5. The system should automatically notify the operator of schedule changes that cause an inability for a route to be completed in the time allowed.  
Yes.
6. The system should be capable of automatically generating run couplings according to user-entered parameters, minimizing the number of vehicles, times and mileage.  
Yes.
7. The system should provide the user a tool to automatically find the best bus where a new run might be assigned.  
Yes.
8. The system should not allow any manual or automatic assignment that would require violation of underlying road rules (typically the size of the vehicle allowed on a particular road).  
Yes.
9. The system should not allow any manual or automatic assignment that would link a bus run to a bus that could not accommodate the equipment needs of students assigned to that run.  
Yes.
10. The system should allow for separate schedules for each weekday, if needed.  
Yes.
11. The system should allow for runs to have different times scheduled for any given day in a week, even if the path of the run has not changed (such as early out days).  
Yes.
12. The system should have the option of assuring the same students will be serviced by the same driver, morning and afternoon.  
Yes.
13. Changes made on the fleet scheduling screen should automatically update all appropriate parts of the system.  
Yes.



### **What-If Functions at the Fleet level**

1. The operator should be allowed to view the entire fleet, or create a window representing only a select portion of the fleet (i.e. that services a particular school or set of schools, different contractors, special needs runs only, etc.).  
Yes.
2. The operator should be able to model the entire fleet for any what-if scenario for runs, combining all into a coherent and complete model.  
Yes.
3. The system should allow the operator to optimize selected portions of the fleet (such as a particular garage) without altering schedules for other vehicles.  
Yes.
4. The system should analyze fleet costs according to user-defined variables such as cost per bus or cost per mile.  
Yes, in a future release.
5. The system should allow the operator to model any desired change in bell times.  
Yes.

### **Dispatcher Functions**

1. The system should include an electronic rollout sheet that will provide the dispatcher with an automatically updated list of the day's assigned runs, buses, and drivers.  
Yes.
2. The system should allow the dispatcher to check drivers in as they arrive.  
Yes, in a future release.
3. The system should provide a warning if a driver has not checked in within the indicated window before their run, or if the driver is late.  
Yes, in a future release.
4. The system should allow the dispatcher to make any necessary daily changes to either the driver or the bus assigned to the run for that day.  
Yes.

### **Management Features**

1. The system should automatically calculate and display any students currently not geocoded without having to run a report.  
Yes.





2. The system should automatically calculate and display students who require transportation but who have not been assigned transportation in the software without having to run a report.  
Yes.
3. The system should automatically calculate and display current information on runs exceeding an individual-run-specific target time without having to run a report.  
A report has to be run.
4. The system should automatically calculate and display current information on runs exceeding an individual-run-specific target load without having to run a report.  
A report has to be run.
5. The system should automatically calculate and display current information on runs that are under an individual-run-specific load threshold without having to run a report.  
A report has to be run.
6. The system should automatically calculate and display current information on any vehicle where the capacity for special equipment has been exceeded, without having to run a report.  
A report has to be run.
7. The system should automatically calculate and display current information on employee certifications that are coming due within a time period that may be set for each certification tracked, without having to run a report.  
A report has to be run.
8. The system should automatically calculate and display current information on employee certifications that are past due without having to run a report.  
A report has to be run.
9. The system should automatically calculate and display information on conflicts between routing assignments and sexual predator locations (based on a user-defined radius from the predator's address) without having to run a report.  
Yes.
10. The system should automatically calculate and display current information on any students requesting shuttle transportation where that request has not been satisfied in the system, without having to run a report.  
A report has to be run.

### **Additional Data**

#### **Employee Data**

1. The system should track employee data, including name, address, multiple phone numbers, photo, assigned vehicle and Social Security number.  
Yes.



2. The system should store and track time-sensitive employee certifications (both required and optional).  
Yes.
3. The system should allow attachments to the employee record in standard file formats.  
Yes, in a future release.
4. The system should automatically calculate and display the daily and weekly hours for each bus assignment.  
Yes.
5. The system should allow the operator to set a number of hours as a benchmark and see the assigned hours against that benchmark. Reports should show drivers over or under the set assigned number of hours.  
Yes.

#### Vehicle Data

1. The system should store a record for each vehicle in the district and an indication of whether it is in active use or not.  
Yes.
2. The system will not use inactive vehicles in any manual or automatic assignment scheme.  
Yes.
3. The system should allow vehicles to be associated with a contractor who owns/operates it (when applicable).  
Yes.
4. The system should store the location where each vehicle is parked during the day (allowing for park outs or multiple garages) and overnight.  
Yes.
5. The system should store basic vehicle data that may be required for state reporting.  
Yes.
6. The system should store each vehicle's maximum capacity for special equipment and student.  
Yes.
7. The system should allow attachments to the vehicle record in standard formats.  
Yes, in a future release.



## **Boundary Planning and Redistricting**

### **BOUNDARY DRAWING AND EDITING**

1. The system should have tools for precision boundary drawing and editing, including attaching to specific locations on a street or boundary and following a street or boundary.  
Yes.
2. The system should link boundaries so editing one boundary can automatically produce the appropriate change in the adjacent boundary.  
Yes.
3. All boundaries should be created, maintained and employed in the same system as the routing functions, without the need to import or translate the boundaries in any way.  
Yes.
4. The system may use a single boundary to make different types of assignments. For example, the same boundary may serve as both a school and walk zone for schools in which all students walk to a building.  
Yes.
5. What-if boundaries may be used with the what-if capabilities of the routing system to provide a picture of the transportation response to any change.  
Yes.
6. A selected students' residence may be displayed on the map and color-coded according to user-selected criteria.  
Yes.

### **Planning Boundaries and Student Data**

1. The system should be able to count students in selected boundaries by unlimited user-defined categories including grade, GPA, ethnicity, etc.  
Yes.
2. The system may assign non-contiguous boundaries to a single school.  
Yes.
3. Small boundaries may be counted as individually or aggregated up for a single group count for a whole school.  
Yes.
4. The system should include tools for forecasting future student populations.  
Yes.



### **Planning Boundaries and Buildings**

1. The system should be able to store both real and hypothetical buildings and their actual (or potential) locations.  
Yes.
2. Each building should record the grade levels assigned to a building and the number of rooms assigned per grade.  
Yes.
3. The system should allow the operator to save multiple scenarios and configure the buildings with different grade/room configurations in each.  
Yes.
4. Students inside a boundary or aggregate boundary may be "loaded" into the building to discover the percent capacity used in that building.  
Yes.
5. The system should be able to save the information loaded from a user's workspace (including boundaries, students, forecast factors, and building scenarios) without the need to load separate pieces.  
Yes.

### **Reporting**

1. The system should give the user the ability to create user-defined reports without vendor intervention.  
Yes.
2. The system should include the ability to restore and report on any archived data.  
Yes.
3. The same report writer should be able to create reports for any vendor in the District's transportation management suite.  
Yes.
4. The user should be able to alter fonts and font sizes on reports.  
Yes.
5. The user should be able to drag and drop fields on the report to change their location on the output.  
Yes.
6. The system should be able to store frequently used (user-defined) custom reports that all users can access.  
Yes.
7. The system should all reports to be printed to standard file formats, such as .XLS, .RTF, .XHTML, .HTML, and .PDF  
Yes.



8. The system report writer should have the ability to create charts and text.  
Yes, through the use of Excel.

### Transportation Specific Reporting

1. The system should print left/right instructions for drivers, with or without student names (at the user's discretion).  
Yes.
2. The system should allow for scheduled printing of driver direction sheets. The user can set a time for printing, and the print run can be completed at any time, even after hours.  
Yes.
3. The system will reasonably establish the stop times and total times for each run, using the speeds and time of day settings in the map.  
Yes.
4. Any changes to the map to add points on a street will not affect any existing routes that run along the same section of the street.  
Yes.
5. The driver instructions may indicate the pick up or drop off corner for the run.  
Yes, in a future release.
6. The system allows user-selected student data to be printed with each student.  
Yes.
7. The system allows the user to print student names and extra data for just a subset of students, such as only certain grades and/or programs. With this feature, the driver sheet would have printed details for only certain students, while giving abbreviated information for others. For example, the user might choose to have several data fields print along with the students' names for all Kindergarten students, but the remaining students would just be listed by name.  
Yes, in a future release.
8. The system allows the student photograph to print with the student's name, by stop.  
Yes.
9. The system allows an indication of whether a student must cross the street to arrive at their bus stop (listed with each student).  
Yes.
10. The system should allow the operator to edit and save the templates to create custom driver directions/stop lists, including the ability to change fonts, sizes, and locations of certain types of information.  
Yes.





11. The system should automatically print notifications for the driver to indicate railroad crossings or other road-based hazards.  
Yes.
12. The system should print single run sheets or in batches based on user preference.  
Yes.
13. The system should be able to print names of monitors and/or aides on runs. Provide a sample printed seating chart.  
Yes for including monitor or aide names on reports. Seating charts will available in a future release.
14. The system should be capable of generating a bus seating chart.  
Yes, in a future release.
15. The seating chart information must be specific for the bus used.  
Yes, in a future release.
16. The seating chart can automatically assign students by grade.  
Yes, in a future release.
17. Student rosters may be printed with the student's seat assignment.  
Yes, in a future release.
18. The system should be able to create a hard copy report showing addresses that fall within selected (or all) school ranges.  
Yes.

### Map Printing

1. The system should allow the operator to quickly print any run map for a driver, which will include directional arrows and run statistics.  
Yes.
2. The system should print run maps singly, or in user-selected batches.  
Yes.
3. The system should print maps with student-specific data, such as location and safe walk to stop path.  
Yes.
4. The system should support plotters for large maps.  
Yes.
5. The system should allow the operator to plot the entire map or any section of the map.  
Yes.
6. The system should allow the operator to indicate the map features to display on the plotted map.  
Yes.



7. The system should allow the operator to generate labels that follow the street for a higher quality plotted map.

Yes.

### **Implementation and Training**

#### **Implementation Services for Routing Software**

1. The vendor will work with the district to provide an electronic map that represents known streets in the district, even if the streets are not available on the base electronic map.

Yes.

2. Vendor will provide high and low address information for each block (data permitting).

Yes.

3. Vendor will enter all school information including addresses, grades and bell-times.

Yes.

4. Vendor will enter district boundaries.

Yes.

5. Vendor will enter district walk-to-stop distances.

Yes.

6. Vendor will enter all bus stop locations.

Yes.

7. Vendor will mark school bus travel restricted streets by bus size, according to district instructions.

Yes.

8. Vendor will mark all hazard locations according to district instructions..

Yes.

9. Vendor will mark all cross-restricted streets, according to district instructions.

Yes.

10. Vendor will mark all right-side restricted streets, according to district instructions.

Yes.

11. Vendor will enter current enrollment and walk zone boundaries, according to district instructions.

Yes.

12. Taking into account the District's needs, the vendor will create a customized student database and import all students.

Yes.



13. Vendor will conduct an initial address match of student information against the map file and correct errors not requiring district knowledge.

Yes.

### **Training from Routing Software**

1. Vendor will train the District's staff on the District's live, operational data.
2. Vendor will provide at least some of the training onsite. Please supply a brief description of the training plan.

Yes.

Yes—please refer to the main body of the proposal for a sample training plan.

3. Vendor will have a system in place for future on-site or online training.

Yes—additional training, either on-site or on-line, is always available from EDULOG.

### **Support Services**

1. The vendor will provide timely, no-charge, unlimited telephone support (renewable annually). Please provide an indication of the response times that the District can expect.  
Yes. The average time to respond to support calls is less than five minutes during business hours, and 90 percent of the calls can be resolved immediately. Calls that require more than one session usually involve issues which go beyond the actual EDULOG application—such as how mapping information contained in the EDULOG system can be passed to other GIS applications.
2. The vendor will provide secure, no-charge, Internet connections for remote viewing and control of the district computers.  
Yes.
3. The vendor will provide extended support hours during the weeks before and after school startup.  
Yes.
4. For each program that will be included as a response to this RFP, please provide a minimum of five reference schools, currently operational.

### **Henry County Schools**

255 Lemon Street

McDonough, GA 30253

Mr. Jim Jones

Database Analyst

Phone: 770-957-2025 x 207

Email: jim.jones@henry.k12.ga.us

Buses: 310

Project Date: 1989 and continuing to this day

Project Type: Integrated GPS/AVL with EDULOG Routing and Scheduling System



**Minneapolis Public Schools**

807 NE Broadway  
Minneapolis, MN 55413  
Mr. Scott James  
Transportation Director  
Phone: 612-668-2311  
Email: scott.james@mpls.k12.mn.us  
Buses: 415  
Project Date: 1984 and continuing to this day  
Project Type: Integrated GPS/AVL with EDULOG Routing and Scheduling System

**Clayton County Public Schools**

1058 Fifth Avenue  
Jonesboro GA, 30236  
Reference for Edulog NT  
Contact: Harold Walker, Transportation Director  
Phone: 770-603-5780  
Email: hwalker@clayton.k12.ga.us  
Buses: 544  
Students Transported: 31,200  
Project Date: 1991 and continuing to this day  
Project Type: Integrated GPS/AVL and Electronic Driver Time and Attendance Tracking with EDULOG Routing and Scheduling System

**Galena Park Independent School District**

812 Normandy Street  
Houston, TX 77015  
Mr. Jim Beesley  
Transportation Director  
Phone: 832-386-2724  
Email: jbeesley@galenaparkisd.com  
Buses: 154  
Project Date: 2008 and continuing to this day  
Project Type: Integrated GPS/AVL/Student Tracking with Transfinder Routing and Scheduling System

**Brentwood Union Free School District**

54 Third Avenue  
Brentwood NY, 11717  
Contact: John Robertson, Transportation Manager/Consultant  
Phone: 631-456-6573  
Email: jrrobjrr@yahoo.com  
Buses: 259  
Students Transported: 17,000  
Project Date: 2012 and continuing to this day  
Project Type: EDULOG Routing and Scheduling System



**Racine Unified School District**

3109 Mt. Pleasant

Racine WI, 53404

Contact: Mr. Patrick Starkin, Transportation Director

Phone: 262-664-8724

Email: patrick.starken@rusd.org

Buses: 150

Students Transported: 12,000

Project Date: 1988 and continuing to this day

Project Type: EDULOG Routing and Scheduling System

## 2.11 Internet Accessibility to Routing Data

### General Requirements

1. The system should provide a web-based interface into student transportation data that will quickly and easily provide appropriate transportation information to appropriate interested parties.  
Yes.
2. The system should be protected with unique username/password combinations.  
Yes.
3. System should have a password recovery system to restore forgotten passwords.  
Yes, in a future release.
4. System should employ close-matching capabilities for the street name so that the user need not know the street name perfectly in order to receive appropriate information.  
Yes.
5. Any displayed map should be able to reflect any changes that might have been made in the main transportation/routing map on a daily basis, and the update without direct or continued user intervention.  
Yes.
6. The District should have the ability to select an Internet map allowing both a street and satellite view.  
Yes.
7. The system should allow for customizable displays of the transportation data according to the rights assigned to different user groups.  
Yes.
8. System should provide a custom report writer that can create custom reports that will be run through the Internet portal.  
Yes.





## Parent Portal

1. The parent portal should allow parents to quickly and easily obtain information about their own students but will not have access to any other student's information.  
Yes, in a future release.
2. For a parent portal, the system should allow a parent to log in once and see the ride information for all of their children instead of logging in separately for each one.  
Yes, in a future release.
3. System should allow parents to enter address and grade information to discover the appropriate routing information.  
Yes.
4. Allows the parents to send email directly to transportation, with selected subjects.  
Yes, in a future release.
5. Allows the transportation office to email student transportation information to the parents.  
Yes, in a future release.

## School Portal

1. System should allow for a user to enter address and grade information to discover the appropriate routing information.  
Yes.
2. System allows school district personnel easy access to student transportation information. Please indicate how this information may also be limited, if desired.  
Yes—it can be limited by school.
3. System should have an option to display a map with icons indicating the home location, stops and school location for the lookup function.  
Yes.
4. The system should provide the ability to search and print stop lists and rosters at each school building through the browser.  
Yes.
5. The system should provide users the ability to create reports showing the transportation assignments for children at each school, and sort according to grade and teacher (if information is stored with the student record in the routing system).  
Yes.
6. For any stop list, the system should display a map indicating the stops sequenced to match the displayed stop list.  
Yes.



7. Provides the optional capability for users (per authorized rights) to make changes to student data or to add new students through the browser interface.

Yes.

### Community Portal

1. Allows the community basic transportation information. Indicate what information can be presented to the public.

Yes—bus stop locations and times, bus run number, school of attendance, distance to school; all based on the input of a school grade and street address.

2. District must be able to control the information that is displayed on the community portal.

Yes.

### Reference Calendar

1. System should provide a calendar which maintains district-wide transportation schedules, such as holidays, early dismissal days for each school, etc.

Yes, with a future release.

2. Each school should be able to maintain its own calendar, and calendars may be shared only with that school, or with selected groups of schools (i.e. all elementary schools)

Yes, with a future release.

3. The calendar should allow for multiple views, at user discretion, such as day, week or month.

Yes, with a future release.

4. The calendar should allow for calendaring events by time on the day as well as indicating the day.

Yes, with a future release.

5. The calendar should integrate with the routing program to display changes scheduled in that program for the week in which the changes are scheduled.

Yes, with a future release.

6. The calendar should be able to look up the changes posted from the routing system so that school personnel may be informed of the changes appropriate to any given week.

Yes, with a future release.

## 2.12

### Field Trip Software

#### General Requirements

1. The system should be Web-based.

Yes.



2. The system should support Active Directory.  
Yes, in a future release.
3. The system should allow all users access to the same data in the same formats (as permissions allow).  
Yes.
4. Requires and uses Microsoft SQL Server as the system database.  
Yes.
5. The field trip software should be capable of integrating with other transportation management software. Please indicate the types of integration available.  
Yes—GPS/AVL and routing and scheduling in a future release.

### Security

1. Access rights are defined by user groups, with each member of the group inheriting the group rights.  
Yes.
2. Each user can be assigned a separate password.  
Yes.
3. The security system for all vendor software shall use the same user/user group concepts, with the rights assignable as appropriate for the specific software.  
Yes.
4. Functional rights of access, such as "no access," "view only," or "edit."  
Yes.

### Trip Initiation

1. The person requesting the trip should be able to enter all necessary information for the trip on a Web form.  
Yes.
2. The requester should be able to select trips from a list of locations stored in the system. All relevant data required for that location will be automatically added.  
Yes.
3. A requester should be able to add in new locations not currently on the list of stored locations, if needed.  
Yes.
4. The requester should have the ability to generate estimated trip costs prior to submitting the request.  
Yes.



5. The system should link to an Internet-mapping system (such as Google or Bing) to provide distance information as well as directions and a map. The distance from the entered trip should be passed through to the estimation function without the need to manually enter the number of miles.  
Yes.
6. The requester should be able to add notes to any trip.  
Yes.
7. The system should allow for easy trip replication for recurring trips.  
Yes.
8. The requester should be able to see the status of each requested trip whenever they log in.  
Yes.
9. The requester should be able to see each requested trip on a calendar.  
Yes.
10. The system should provide automatic notifications to a requester when the billed trip account reaches a minimum available amount.  
Yes.

### **Trip Approval**

1. The system should allow for the implementation of the District's policies for trip approval.  
Yes.
2. Trip approval paths may differ for each account.  
Yes.
3. Trip approval paths may differ according to the type of trip (for example, overnight or weekend trips).  
Yes.
4. The person(s) designated as the approver should automatically receive an email indicating that there is a trip to be approved.  
Yes.
5. The person(s) designated as the approver should be able to access the data for the requested trip from a hot link in the email.  
Yes, in a future release.
6. Approvers should see the data as the requester entered, including a trip estimate if one was generated.  
Yes.



7. The transportation office should be able to easily track any trip and where it is in the approval process.

Yes.

### **Trip Assignment**

1. The system should allow the transportation office to establish rules that determine driver order and eligibility for field trips.

Yes.

2. The system should be able to use the rules to present an ordered list of the drivers so that the next name on the list is the one to be assigned the next trip.

Yes.

3. The system should allow for multiple ordered lists. These may be used for different locations, or different time periods, as desired.

Yes.

4. The system should allow the transportation office to establish rules concerning drivers' attendance on trips including rules handling drivers if they refuses a trip.

Yes.

5. The system must be capable of assigning multiple buses and drivers to a single trip.

Yes.

6. The system should allow for assigning two drivers to certain trips when the distance and/or driving time might require it.

Yes.

7. The system should easily be able to print the driver trip sheet from the screen on which the assignment has been made.

Yes.

### **Trip Accounting**

1. The system will allow the transportation office to reflect the accounts where trips will be billed.

Yes.

2. The system will be capable of storing the account number associated with the field trip account in the District's accounting software.

Yes.

3. The system should allow different methods for charging different accounts, and apply the appropriate method automatically.

Yes.



4. The system must allow the entry of actual costs for the trip to accumulate the data required for billing.  
Yes.
5. The system should allow for a single trip to be billed to two or more accounts, indicating the percentage to be billed to each.  
Yes.
6. The system should be able to track when a trip bill has been paid.  
Yes.
7. The system should be able to track partial payments against the bill for a trip.  
Yes.

### **Trip Communication**

1. The system should use email to confirm the progress of any trip from requester to approval to scheduling, completion, and billing.  
Yes.
2. The system will automatically trigger appropriate emails to all assigned recipients as each event is accomplished.  
Yes.
3. The transportation office will have a record of every email sent.  
Yes.
4. The transportation office will have the ability to create the message of each email.  
Yes.
5. The transportation office will have the ability to indicate which emails will be sent pursuant to specific actions.  
Yes.

### **Trip Management**

1. The system should automatically inform the transportation office of the numbers of trips scheduled for the current day and week. The user should be able to easily access each trip from this information.  
Yes.
2. Calendar days may be blocked and indicated as not available for travel.  
Yes.





3. Portions of a day may be blocked and indicated as not available for travel.  
Yes.
4. The transportation office should have the ability to override any system parameter.  
Yes.
5. The transportation office should be able to set a minimum number of days between request and trip.  
The system should then automatically notify the requester if a trip is too close to the requested date.  
Yes.
6. The transportation office should be able to set a minimum-day requirement for advanced notice in canceling a trip.  
Yes.
7. The system should be able to track the maximum number of trips allowed. Any request which exceeds the set number will be automatically declined by the system.  
Yes.
8. The system should be able to track the maximum number of buses to be assigned.  
Any request which exceeds the set number will be automatically declined by the system.  
Yes.
9. The system will allow the transportation office to block out hours in a day when trip vehicles are not available.  
Yes.
10. The system will allow the transportation office to block out days when trips will not be taken (such as holidays).  
Yes.
11. The system will allow the transportation office to easily broadcast a selected message to all of the field trip requesters at login.  
Yes.

#### **Account Management**

1. The system will allow the transportation office to maintain records for each account that can request trips.  
Yes.
2. Account information should include name, location, contact names and numbers.  
Yes.



3. The system should allow for different accounts to be billed according to different rules, according to the District's needs.  
Yes.
4. The system should allow drivers to be associated with an account, for example, coaches may drive teams and therefore be the desired drivers for that account.  
Yes.
5. The system shall allow the storage of the account's budget.  
Yes.
6. The system should account all billed and paid trips against the budget to keep a running (unofficial) account of available funds.  
Yes.

### **Destination Management**

1. The system should store previous trip locations and include the locations' addresses, contacts and phone numbers.  
Yes.
2. The system should allow user access to an Internet mapping tool to generate left/right turns and maps for the drivers to and from any location.  
Yes.

### **Employee Management**

1. The system will store employee records that may be categorized as requesters or drivers.  
Yes.
2. Driver information should store sufficient information to make their seniority status clear.  
Yes.
3. Driver records should store the rates at which they are to be billed/compensated for trips.  
Yes.
4. The system should allow for different rates for driving and for sit time.  
Yes.
5. The system should be capable of tracking assigned route hours for a driver to assure that they will not exceed forty hours in a week.  
Yes.
6. The driver record should indicate availability for multiple-day trips.  
Yes.



7. The driver should be able to opt out of the trip assignment queue.  
Yes.
8. Each driver should be able to access a personal calendar in the system and block out days they will not be available.  
Yes, in a future release.
9. The system should recognize those blackout days and not include a driver on a date they have blacked out.  
Yes, in a future release.
10. The system shall track driver certifications, providing an automatic warning to the transportation office with the certification is coming due, or has already expired.  
Yes, in a future release.

### Reporting

1. The system should include a custom report writer with which new reports may be written, or through which included reports may be modified.  
Yes.
2. Indicate the included reports.  
Please refer to the following pages for sample reports providing cost information.





Geology Club

missoula, mt

INVOICE NO: 10

INVOICE DATE: 01/11/2013

TRIP ID:	138	CHARGES:	
PO #:			
ACCOUNT NO #:		FLAT CHARGE:	\$100.00
TRIP DATE:	11/22/2012		
PURPOSE:		EXTRA CHARGES:	0.00
DESTINATION:	Glacier National Park	AIDE COST:	0.00
CONTACT:	Matthew Johnson	TOTAL:	100.00
PHONE:	333-4291	TOTAL FOR THIS ACCOUNT:	100.00% * \$100.00 = \$100.00

DETAILS FLAT CHARGE:

Flat charge Description	Amount
flat rate	100.00

GRAND TOTAL: \$100.00

.....  
Please return this portion with your payment and please include the invoice number on your check.

Geology Club

TOTAL DUE: \$100.00

missoula, mt

DUE DATE:



History Club

missoula, mt

INVOICE NO: 29

INVOICE DATE: 09/06/2013

TRIP ID:	160	CHARGES:	
PO #:		MILEAGE:	366.00 miles @ \$1.05 per mile = \$384.30
ACCOUNT NO #:	99945	DRIVER TIME:	7.50 hours @ \$11.54 per hour = \$86.55
		WAIT TIME:	1.00 hours @ \$11.54 per hour = \$11.54
TRIP DATE:	09/03/2013		
PURPOSE:			
		EXTRA CHARGES:	0.00
DESTINATION:	Big Sky High School	OT HOURS:	0.00
		AIDE COST:	0.00
CONTACT:	Matthew Johnson	TOTAL:	482.39
PHONE:	333-4291	TOTAL FOR THIS ACCOUNT:	50.00% * \$482.39 = \$241.20

DETAILS STANDARD CHARGE:

Drv. ID	First name	Last name	Veh. ID	Mileage	Driver Time	Wait Time	Total
757567889	Gary	Duncan	12345	384.30	86.55	11.54	482.39

GRAND TOTAL: \$241.20

.....  
Please return this portion with your payment and please include the invoice number on your check.

History Club

TOTAL DUE: \$241.20

missoula, mt

DUE DATE:





debate

INVOICE NO: 31

INVOICE DATE: 09/10/2013

TRIP ID:	162	CHARGES:	
PO #:		MILEAGE:	440.00 miles @ \$1.50 per mile = \$660.00
ACCOUNT NO #:		DRIVER TIME:	5.83 hours @ \$20.00 per hour = \$116.60
		WAIT TIME:	6.00 hours @ \$15.00 per hour = \$90.00
TRIP DATE:	09/04/2013		
PURPOSE:	Educational		
		EXTRA CHARGES:	0.00
DESTINATION:	Glacier National Park	OT HOURS:	0.00
		AIDE COST:	0.00
CONTACT:	me	TOTAL:	866.60
PHONE:	406-3407	TOTAL FOR THIS ACCOUNT:	100.00% * \$866.60 = \$866.60

DETAILS STANDARD CHARGE:

Drv. ID	First name	Last name	Veh. ID	Mileage	Driver Time	Wait Time	Total
10005	Jerry	Knox	1345	660.00	116.60	90.00	866.60

GRAND TOTAL: \$866.60

Please return this portion with your payment and please include the invoice number on your check.

debate

TOTAL DUE: \$866.60  
DUE DATE:



**Transportation Department**

**Monthly In-District Field Trip Transportation Billing Report**

**Billing Start Date:** 08/01/2015

**Billing End Date:** 08/31/2015

**Group:**

**Address:**

**City, State, Zip, Code:**

**Group Code:**

Date	Trip #	Acnt.No	Purpose	Destination	Split	Wait Hrs.	Miles	Hours	Wait Cost	Mileage Cost	Labor Cos	Extra Cost	Aide Cost	Tax	Total Cost
------	--------	---------	---------	-------------	-------	-----------	-------	-------	-----------	--------------	-----------	------------	-----------	-----	------------

0

Monthly Totals:

GRAND TOTAL:



## 2.13 Specifications for Fleet Maintenance Software

### General Requirements

1. The system should be web based.  
Yes.
2. The system should support Active Directory.  
Yes, in a future release.
3. Requires and uses Microsoft SQL Server as the system database.  
Yes.

### Security

1. Access rights are defined by user groups, with each member of the group inheriting the user group's security rights.  
Yes.
2. Each user can be assigned a separate password.  
Yes.
3. The security system for all vendor software shall use the same user/user group concepts, with the appropriate rights assigned for the specific software.  
Yes.
4. Functional access rights, such as "no access," "view only," or "edit."  
Yes.

### Management

1. The system must be able to track the runs/routes that are associated with particular GPS hardware.  
Yes, with the optional GPS/AVL software and hardware proposed by EDULOG.
2. The system must be able to track any daily overrides that might be required to assure the correct association between a driver, bus, and run.  
Yes, with the optional GPS/AVL software and hardware proposed by EDULOG.
3. The system must be able to associate drivers with the hardware for tracking driver time.  
Yes, with the optional GPS/AVL software and hardware proposed by EDULOG—using the optional tablets and EDULOG eDTA (electronic driver time and attendance) software.



4. The system should have the ability to import the vehicle hardware assignments and the driver tag assignments.

Yes, with the optional GPS/AVL software and hardware proposed by EDULOG—using the optional tablets and EDULOG eDTA (electronic driver time and attendance) software.

### Vehicle Display

1. Please indicate the GPS hardware in which the proposed AVL software will work.  
CalAmp hardware is proposed, but the EDULOG system can also work with Zonar hardware, and in the future, GeoTab hardware.
2. The AVL software must be able to simultaneously display and process GPS data from multiple GPS hardware vendors.  
Yes.
3. The system should have the ability to display the current location (as of the last GPS report) for any vehicle, all vehicles, or a selected subset of vehicles.  
Yes.
4. The system should allow the user to request the current location for any vehicle.  
Yes.

### Vehicle Alerts

1. The system should allow for a visual and/or audio alert to be associated with the displayed vehicles.  
Yes.
2. The system should allow for an audible alert to be set according to user preferences and to sound when the alert occurs, whether the vehicle is displayed or not.  
Yes.
3. The user should be able to quickly display any vehicle that is in an alert status, including zooming in to a closer view of the map showing that location.  
Yes.
4. The display map should be capable of displaying satellite photography of the region of interest.  
Yes.

### Geofence Functionality

1. The system should be able to create any number of geofences.  
Yes.



2. Each geofence may be associated with a single vehicle, all vehicles, or a selected subset of vehicles.  
Yes.
3. Any geofence may be set to track a vehicle that enters the geofence or if it leaves the geofence, depending upon the function performed by the geofence. For example, a geofence might be set at some distance around the district and route buses would trigger an alert if they left the boundary/district.  
Yes.
4. The system should allow the user to establish rules for safety compliance at railroad crossings and interpret the GPS data to create a report capturing the compliance or non-compliance of each vehicle at that railroad crossing.  
Yes.

#### **Integration with Ridership Verification Hardware**

1. Please indicate the hardware systems your software supports  
At present, RFID readers and Android tablets.
2. The system must be able to simultaneously display and process ridership data from multiple hardware vendors.  
Yes.
3. The system should be able to report in real time, the time and location of a student's scan on/scan off.  
Yes—with the optional EDULOG student ridership management system.
4. The system should be able to report historical records of any student's scans on and off a bus.  
Yes—with the optional EDULOG student ridership management system.

#### **5. Integration with Driver Time Verification Hardware**

1. Indicate any supported hardware solution for indicating driver sign-on and sign-off in order to track driver time.  
At present, Zonar 2010 handhelds or CalAmp or Zonar Android tablets.
2. Indicate if the system has the ability to track the sign-on or sign-off time for an aide or monitor on the bus who might have a different schedule than the driver.  
Yes, with the optional EDULOG eDTA (electronic driver time and attendance system).
3. Indicate whether the software has the ability to collect time information and provide it electronically to payroll applications.  
Yes, with the optional EDULOG eDTA (electronic driver time and attendance system).



### Integration with Student Information

1. The system should be able to integrate with student assignments and bus routes through the routing software.  
Yes.
2. The system should be able to look up a student and return the routing information pertinent to that student which may also be compared to the GPS data for that student's route.  
Yes.
3. The lookup of student/route information should be available on current and historical GPS data.  
Yes.
4. The system should be able to compare the scheduled pick-up time for a particular student against the current day's or any historical day's record of pickups.  
Yes.
5. When data from the GPS allows, the system should be capable of noting when a vehicle passed by a stop and whether or not a user-indicated stop action occurred (defined in the GPS system).  
Yes.
6. When received data allows, the system should allow the user to look up a student and see up to the last twenty records of when they physically scanned on/off the bus.  
Yes.
7. The system should be able to generate a stop list for a route indicating when a student has boarded/deboarded the bus at any stop other than the one to which the student is assigned.  
Yes.
8. The system should be able to produce a stop list indicating both the planned students at each stop, and the actual record of those boarding/deboarding the bus at that stop.  
Yes.
9. The system should be able to generate a report of students assigned to ride, but who have not ridden for a proscribed time.  
Yes.
10. The system should be able to generate a report showing student activity on buses, with an indication of the scan time, the planned location and the actual location of that student's scan on/off the bus.  
Yes.

### Integration with Planned Bus Runs/Routes

1. The system should be capable of comparing the current GPS-reported vehicle path to that which the user's routing software had planned for that vehicle.  
Yes.





2. The system should be able to discover buses that have deviated from the planned run and indicate the percentage of time spent off-route.  
Yes.
3. The system should be able to simultaneously display the planned route, the actual route and indicate the portion for which the route was off path.  
Yes.
4. The system should provide a visual display of the current on-time status to a selected location. This display should be accessible by any Internet-connected device, such as a tablet, with appropriate security measures.  
Yes.
5. The system should provide a visual display of the current on-time departure from a selected location or locations.  
Yes.
6. The on-time arrival or departure display should color-code the display of buses running late, indicating the severity of the delay.  
Yes.
7. The on-time arrival or departure display should update with real-time changes, so that a vehicle that was running late to a school might change the color code if it is able to make up time. Conversely, increasing delays would also create a change in the color code.  
Yes.
8. The system should be able to discover any buses that have not complied with set regulations at a railroad crossing.  
Yes.

## Reports

1. The system should be able to report on vehicles that have been in alert status for an indicated period.  
Yes.
2. The system should be able to report on buses inside or outside of selected geofences during selected time periods.  
Yes.
3. The system should be able to report on vehicle idling.  
Yes.



4. The system should be able to report on the departure times from the yard compared to the scheduled departure time, indicating the number of minutes a vehicle was early or late compared to the planned departure time. This report should be available for the current day, any historical day, or set of days.  
Yes.
5. The system should be able to report on time performance for school arrivals. The report should be available for the current day, any historical day, or set of days.  
Yes.
6. The system should be able to report on both the planned and actual times at stops, indicating any time variation in minutes.  
Yes.
7. The system should allow for custom reports through an included custom report writer.  
Yes.

## 2.14 Specifications for GPS Hardware

### General Requirements

1. This proposal seeks a single source solution for hardware and software required to meet the District specifications.  
Yes, that is what is being proposed by EDULOG.
2. This proposal requests an inclusive price for hardware (including mounts, connectors, wiring), software (including training and support), and any continuing subscriptions. All of these should be covered through contract with the same vendor.  
Yes, that is what is being proposed by EDULOG.
3. The vendor must offer an open design capable to interfacing with both routes and stops in the districts routing and other transportation software. Indicate the routing software that can integrate data from this hardware.  
EDULOG, Transfinder, Versatrans, Trapeze.
4. GPS should include the ability to directly interact with multiple GPS satellites, track each vehicle at all times within a 50' radius of the vehicle's absolute location.  
Yes.
5. Capable of handling all current district buses and allowing for future growth (including significant growth, should that occur).  
Yes.
6. The software license should cover an unlimited number of users, controlled by the District.  
Yes.



## Hardware Configuration

1. Technical specifications must be included for any and all components proposed.  
Yes—please refer to the main body of the proposal for details.
2. The GPS hardware should be able to acquire satellite contact within ten seconds or less.  
Yes.
3. The GPS hardware should have an integrated accelerometer.  
Yes.
4. The GPS hardware should have the ability to have a programmable in-cab audible alert.  
Yes, with the optional Android tablet.
5. The in-cab alert may be set to alert at a set number of miles/kilometers per hour above the posted speed limit.  
Yes, with the optional Android tablet and a future release of the tablet application software.
6. Indicate the types of vehicle data the unit may monitor, for example directional signals, red and yellow overheads, open doors, etc.  
The CalAmp GPS units can transmit information about a minimum of six different events from the school buses (door opening, reverse lights, stop arm, etc.). The ability to track events for vehicle activities is critical to the comparative analysis functions that form the two-way integration between the GPS software and the EDULOG routing and scheduling system.
7. If hardwiring is required to acquire data, indicate the number of inputs possible.  
Seven digital inputs, four A/D inputs.
8. The GPS hardware should be programmable based on the District's needs. These settings should be modifiable once the units are installed on the vehicles and in operation by Over the Air (OTA) procedures. The users should be allowed to perform these modifications through an interface provided by the GPS tracking software.  
Yes.
9. The system should easily communicate with and transmit data from the onboard diagnostics.  
Yes.
10. The system should have the ability to attach additional peripherals as needed.  
Yes.

## Telecommunication Capabilities

1. The system should support 4G cellular data for live data transmission. Please indicate the telecommunications companies supported by the hardware.  
Verizon Wireless, Sprint, AT&T, and T-Mobile.



2. The selected hardware should send data automatically, without user intervention.  
Yes.
3. Indicate the polling intervals that may be set, that is the time between sending location/time data points.  
This is user-defined, and can be as frequent as every ten seconds.
4. The hardware must target a zero-loss system by storing all data until there is verification that the data has been received. The hardware will not erase any data unless there is confirmation that the data was correctly transmitted.  
Yes.
5. The hardware must promote zero-loss data capture by being capable of store and forward technology. It must be capable of storing at least 30,000 logs (about 3 weeks of school bus data) per device if circumstances prevent transmission of the data for whatever reason. These logs must then be transmitted automatically when correct communication is established.  
Yes, except that the proposed CalAmp unit only stores 20,000 logs.
6. The hardware must be capable of real-time data uploads based on events, exceptions and activities as well as timed uploads. The hardware should manage the upload decisions depending on the importance of the data waiting for transfer.  
Yes.
7. The live communication function must send all scheduled or event-driven vehicle tracking data directly to the selected hosting network option in real-time, automatically and without user interaction.  
Yes.

## Software Capabilities

### General

1. Software should provide benefits through either a single program or seamlessly integrated programs.  
Yes.
2. The software must be capable of processing the amount of GPS data generated by the District's full fleet of buses and should be able to display the data as it is transmitted by the GPS hardware in real time.  
Yes.
3. The system must store the daily data for every bus as long as the District decides it is needed. The system must also allow for archiving and purging of historical data through a user interface which allows storage or deletion by date range. In addition, the system must allow the display, analysis and reporting on historical run/stop data for any day and time frame available from the data stored.  
Yes.



4. Hosted data will be stored in a secure environment.  
Yes.
5. Data should be transmitted in an encrypted format.  
Yes.
6. System administrators should be able to enforce password policies.  
Yes.
7. System will use SQL Server as the underlying database.  
Yes.
8. System will have a browser interface for the data.  
Yes.
9. The system should have a user-adaptable dashboard for preset reports.  
Yes, in a future release.
10. The District can configure the software to monitor specific events without vendor intervention.  
Yes.
11. The district shall have the ability to create audible in-vehicle, real-time warnings alerting the driver that they are outside set operating parameters (for example, exceeding maximum speed or exceeding maximum idle time).  
Yes, if the optional Android tablets are installed.
12. The software should be capable of displaying recorded vehicle speeds against the posted speed limit.  
Yes.
13. The system should have the ability to correct the speed limit when the underlying map has the incorrect limit. The change should be immediately visible in the reporting and should be communicated to the source files.  
Yes.

### **OnBoard Diagnostic Reporting**

1. The software shall collect and interpret data from Onboard Diagnostics (OBD) to allow district personnel to quickly interpret fault indications.  
Yes.
2. The software will message indicated personnel if a low battery level is indicated.  
Yes.
3. The software will message indicated personnel if an oil pressure setting is exceeded.  
Yes.



4. The unit should be able to report periodically when the vehicle is not in use, such as overnight.  
Yes.

### GPS Unit Reporting

1. System will display vehicle location on an electronic map  
Yes.
2. The system should provide for sufficient communication of vehicle location (and other transmitted data) to provide near real-time location of the vehicles. Please explain how often the unit reports GPS or diagnostic data to the analysis software in the district office.  
Yes, the reporting intervals are user-defined; most edulog clients select every 30 seconds.
3. System will allow satellite overlay on the mapping display.  
Yes.
4. System will display one, selected, or all vehicle locations on a common screen and store tracking information for later retrieval.  
Yes.
5. The system should allow for user-defined groups of vehicles, which may be displayed as a group.  
Yes.
6. The system shall allow for vehicle playback with fast forward and rewind capabilities.  
Yes.
7. The system shall locate events on the map, such as idling events.  
Yes.
8. The system should be able to report on driver behaviors, such as harsh braking, rapid starts or sharp turns.  
Yes.
9. The system shall allow the user to create geofences and establish the rules for reporting against those geofences.  
Yes.

### Management Data Reporting

1. Software analyzes telematics data to provide for a report of the manageable idle time, rather than all idle time.  
Yes.
2. Software provides speed profiles for a vehicle.  
Yes.





3. Software audits fuel levels, filling locations and times.  
No.
4. Software interprets the GPS data and provides improved accuracy for mileage.  
Yes.
5. Software interprets the GPS data and provides reports on maximum speeds, or speeds within certain geographic areas.  
Yes.
6. Software allows for accurate event reconstruction in case of an accident. Please indicate the capabilities and methods for achieving this goal.  
Yes—travel speed, direction of travel, location, recorded G forces from the accelerometer.
7. The system shall allow for customized reports.  
Yes.
8. The system shall allow the user access to all received data in order to generate custom reports.  
Yes.
9. The system shall have certain automatically generated reports (provide a list).

Stop Efficiency Detail Report (overall District)  
Today School Arrival Report - all early buses  
School Arrival Report - by bus - all late buses  
School Arrival Report - by bus- all early or late buses  
Today Stop Arrival Report - all early stops  
Today Stop Arrival Report - all late stops  
Today Stop Arrival Report - all early or late stops  
Stop Arrival Report - by bus - all early stops  
Stop Arrival Report - by bus - all late stops  
Stop Arrival Report - by bus - all early or late stops  
Student Tag ID Report  
Student - Ridership by Run  
Student - Ridership by Run and Stop  
Missed Logout Report  
Drive Time Deviation Report – Driver by Run  
School Arrival/Departure Pie Chart Report  
Stop Efficiency Detail Report (by Runs)  
LMU Data Usage Detail Report ( by Date )  
Emergency Event Report  
Idle Time Event Report  
Emergency Event Report - by Bus  
Idle Time Event Report - by Bus  
Bus Activity Event Report (Expanded Stop Record)  
Bus Activity Event Report (Single Stop Record)  
Pre-Trip Report  
Pre Trip Inspection Report



Stop Efficiency Detail Report (by School)  
LMU Data Usage Summary Report ( by Unit )  
LMU Data Usage Summary Report ( by Date )  
Stop Efficiency Detail Report (by Routes)  
Student - Ridership by Stop  
Today School Arrival Report - all early or late buses  
School Arrival Report - by bus - all early buses  
LMU Data Usage Summary Report ( by Bus )  
Driver Performance Driver Non-Productive Time  
Scheduled/Actual Comparison (Expanded Stop record)  
Emergency Report  
Bus Arrival & Departure Report  
Bus Arrival & Departure Report (by School)  
Bus Activity Report (Single Stop Record)  
Bus Activity Report (Expanded Stop Record)  
Standard Bus Travel Distance Report  
Louisa Employee TimeCard Report  
Clayton Employee TimeCard Report  
Scheduled/Actual Comparison (Single Stop Record)  
Today School Arrival Report - all late buses  
Student - Tag Detail Report  
Route Sub Activity Report (All GPS Locations)  
Mileage Report  
Student - Ridership by Route, Run and Stop  
Driver Travel Distance Report  
Emergency Report - by Bus  
Driver without Inspection Data  
Inspection Times Summary by Date  
Inspection Times Summary by Driver  
Inspections Defect  
Early/Late Inspection Times  
Basic Driver Activity Report (By Driver)  
Basic Driver Activity Report (By Date)  
Drive Time and Idle Summary Report.  
Brief Report  
Detail Report  
Today Bus Activity Report (All GPS Location)  
Standard Bus Travel Distance Largest Mileage (By Time)  
Standard Bus Travel Distance Largest Mileage  
Inspection Times by Date, Driver, Vehicle  
Inspection Times by Driver, Date, Vehicle  
Vehicle Defects by Date, Driver, Vehicle  
Vehicle Defects by Driver, Date, Vehicle  
Inspections Duration  
Stop Efficiency Summary Report (by Routes)  
LMU Analysis Report (by Bus)  
LMU ESN Report - by Date



Stop Efficiency Summary Report (by Runs)  
Standard Bus Travel Distance Mileage Report  
Afternoon School Arrivals/Departures  
Student - Riders by Route  
Idle Time Cost Analysis  
Student - Ridership by Route and Run  
School Arrival/Departure Report (by School)  
Driver General School Arrival/Departure Report  
School Arrival/Departure Summary Report  
Stop Efficiency Summary Report (by School)  
Driver Emergency Event Report - by Driver  
Driver Idle Time Event Report - by Date  
Driver Idle Time Event Report - by Driver  
Speed Report  
AVL Drive Time Summary Report (by Bus)  
Stop Event Report (by Run)  
Missed and Unscheduled Stops  
Driver Actual/Planned Comparison (Single Stop Record)  
Driver School Arrival/Departure: Early/Late Exception  
Driver General Stop Arrival/Departure Report  
Driver Stop Arrival/Departure: Early/Late Exception  
Driver Stop On-Time Statistics Summary  
Driver Travel Distance Exception Report  
Driver School On-Time Statistics  
Driver Emergency Event Report - by Date  
Driver Actual/Planned Comparison (Expanded Stop Record)  
Driver Stop On-Time Statistics  
Afternoon School Arrivals/Departures (by School)  
To/From Garage Times Report  
Stop Event Report  
School Arrival/Departure Report  
Transportation Timesheet  
Employee Time Report  
Transportation Time Card Summary  
Login/Logout Deviation Summary Report (By Driver)  
Driver Activity Report with Accumulate Hour In Week  
Employee TimeCard Report  
Planning In/Out Deviation Report  
Employee Event Summary Report  
Shop Time Card  
Murfreesboro Bi-Weekly Transportation Timesheet  
Handset Data Usage Report (by Bus)  
Monitor Bridge Report  
Event Summary Report  
Driver Bridge Report  
Employee Time Card  
Bus Activity Report (All GPS Locations)



Zero Speed Report  
Morning School Arrivals/Departures  
Morning School Arrivals/Departures (by School)  
District Summary of Employee Hours per Billing Type  
Reverse Bus Substitution Report (by Bus)  
Export Today's Ridership Student IDs  
Driver Inspection Report (By Date)  
Driver Inspection Report (By Driver)  
Employee Billing Type Report  
Today Bus Activity Report (with Garage Info)  
Employee Billing Type Summary Report  
Driver Time Sheet Report (By Employee ID)  
Maintenance Timesheet  
Murfreesboro Bi-Weekly Maintenance Timesheet  
Transportation Time Report  
Emergency Event Report (By Level)  
Reverse Bus Substitution Report (by Date)  
Driver's License Expiration Report  
Driver Time and Attendance Audit File Report  
Memphis Detail with Liquidated Damages by Vehicle  
Memphis Detail with Liquidated Damages  
Memphis Summary with Liquidated Damages  
Vehicle Finder All GPS Activity Report  
Employee Login Status Report  
North Buses Did Not Return To Garage  
South Buses Did Not Return To Garage  
North To/From Garage Report  
South To/From Garage Report  
Memphis Weekly Summary with Liquidated Damages  
Planning In/Out Report  
MDT Route Manifest Upload Report  
MDT Software Update Tracking Report  
MDT Student Tracking Use Confirmation Report  
Buses Did Not Return To Garage  
Student Tracking Report  
Student - Ridership Counts Report  
Student - Non-Rider Report  
EduTracker Employee Data Sheet  
EduTracker Employee Qualifications Sheet  
Standard Vehicle Mileage Report  
Transportation Timesheet Summary  
LMU Analysis Summary Report (by Date)  
LMU Analysis Summary Report (by Bus)  
Driver Time Sheet Report  
LMU Data Usage Detail Report ( by Bus )  
LMU Data Usage Detail Report ( by Unit )  
Handset Analysis Summary Report (by Date)



Handset Analysis Summary Report (by Bus)  
Idle Time Report  
Idle Time Report - by bus  
Bus Substitution Report (by Bus)  
Bus Substitution Report (by Date)  
Bus Low Battery Report  
White Fleet Efficiency Report ( by Vehicle )  
Billing Type Summary Report  
AVL Drive Time Report (with Estimate Code) - by School  
Standard Bus Travel Distance Report (Group By Date)  
AVL Drive Time Report (by School)  
AVL Drive Time Report  
AVL Drive Time Report (by Bus)  
AVL Drive Time Report (with Estimate Code)  
Stop Efficiency Detail Report (Run by Stops)  
White Fleet Summary Report ( by Vehicle )  
White Fleet Summary Report ( by Date )  
LMU Analysis Report (by Date)  
AVL Drive Time Report (with Estimate Code) - by Bus  
Handset Analysis Report (by Bus)  
Handset Analysis Report (by Date)  
Drive Time Deviation Report – Vehicle by Run  
Drive Time Deviation Report – Driver Summary  
Drive Time Deviation Report – Vehicle Summary  
Stop Efficiency Summary Report (overall District)  
ESN with Event Description Report  
Student Tracking Quick Reports  
Student Ridership by Status (By Bus)  
Trending Report  
Trending Summary Report  
Bi-Weekly Transportation Timesheet  
End of Run GPS Event Report  
Chicago Arrival/Departure Report

10. The system shall be capable of email notification of alerts to appropriate personnel.

Yes.

### **Driver Performance and Safety Reporting**

1. System provides reports for driver training by tracking a driver's hard braking, acceleration and fuel economy practices.

Yes.



### Installation Requirements

1. The installation should not interfere with the function of the electronics of the vehicle.  
Yes.
2. All equipment should be mounted without damaging the vehicle and secured in such a manner as not to present a danger to the driver in the unlikely event of an accident.  
Yes.
3. Installation should not require an external antenna.  
No, an external antenna is required with the type of GPS unit proposed.
4. Units should be mounted so they could optionally be moved from one vehicle to another if needed.  
Yes.

### Training and Support

1. Complete system operation manuals shall be provided which includes details of all system features and functions.  
Yes.
2. The vendor will supply support for hardware issues. Describe the process.  
Yes. EDULOG works with each client district to develop best practices for the management of on-vehicle equipment parts. EDULOG's usual recommendation is that a certain number of spare parts (usually five percent of total inventory) be on stock at the district so that GPS units that are sent to EDULOG for warranty or other replacement can be temporarily placed on the vehicles without disrupting the GPS/AVL tracking functions. If a GPS unit requires replacement, the district will be issued an RMA and the item is sent by the district to EDULOG.
3. The vendor will supply both phone and web-based interactive support for the software, as needed.  
Yes.
4. There shall be no extra charges other than that included in the pricing summary declared in this proposal.  
Yes.





## LAFAYETTE PARISH SCHOOL BOARD FORMS

Please refer to the following pages.



Request for Proposal

- 3.3.3 The LPSB reserves the right, to adjust this schedule as it deems necessary. Notification of any adjustment to the schedule of events shall be provided to all proposal respondents.
- 3.3.4 The LPSB has the right to request clarification or additional information from the vendor.
- 3.3.5 Written or oral discussions or presentations for further clarification may be required of some or all vendors.


**Envelope containing proposal should be marked on the outside "RFP #18-16, Routing and Planning Software for Student Transportation, Field Trip Management and Fleet Maintenance Administration due March 18, 2016 at 10:00 a.m. CST"**

The proposer acknowledges receipt of addendum:

No.1 DATED Not Dated No.2 DATED \_\_\_\_\_ No.3 DATED \_\_\_\_\_  
No.4 DATED \_\_\_\_\_ No.5 DATED \_\_\_\_\_ No.6 DATED \_\_\_\_\_

**\*\*An LPSB Debarment Certification Form must be signed and included with Proposal in addition to this page\*\***

Education Logistics, Inc.  
Name of Firm

  
Signature of Proposer

3000 Palmer Street, Missoula, MT 59808  
Address

Carter Young  
Typed Name of Proposer

406-728-0893  
Telephone Number

psalinas@edulog.com  
Email Address



**Certification Regarding  
Debarment, Suspension, and Other Responsibility Matters  
Primary Covered Transactions**

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 13 CFR Part 145. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211).

**INSTRUCTIONS FOR CERTIFICATION**

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to which this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations (13 CFR Part 145).
6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Covered Transactions," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the ineligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.



9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

**CERTIFICATION**

- (1) The prospective primary participant certifies to the best of its knowledge and belief that it and its principals:
- (a) Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
  - (b) Have not within a three-year period preceding this application been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
  - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
  - (d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective primary participant shall attach an explanation to this proposal.

Business Name Education Logistics, Inc.

Date March 29, 2016

By Carter Young, Sales Support Manager  
Name and Title of Authorized Representative

  
Signature of Authorized Representative

