The 10th Annual Conference

School Transport

Innovations, efficiencies and revenue streams in times of austerity

Driving efficiency through technology: reducing the cost of school and special needs transport whilst improving overall service

Dale Howarth

Business Development Director - Logical Transport

Reducing Cost v Improving Service

'Reduce the overall cost of transport services, whilst at the same time improving efficiency and effectiveness - to provide safe, accessible and reliable transport that caters for individual need.'

'Improving the experience for all'

Reducing Cost and Improving Service

North Carolina

Issues:

1.Manage increased demand, due to reduction of parking spaces at schools

2.Reduce cost of service provision

3.Liberate parking spaces at locations

4.Green Agenda – 'Greening the Curb'

Achievement:

- >3,751,000 fewer miles driven
- $479,413 (£300,000) saved in fuel alone
- >8,264,991 Kg of CO2 emissions

- A saving of $128 (£80) per passenger
- Freeing up over 200 parking spaces at one location, worth $1m USD
- A reduction in overall fleet size

Home to School Transport

- £79,800 direct saving
- 31,920 less miles driven p/a
- Vehicle utilisation up 20%
- Improved Service

Daily transport for 573 pupils

Why apply technology to scheduling & routing ?

- To create solutions faster
- Model a greater number of solutions
- Consider a greater number of variables (KPI's)
  - Number of vehicles used
  - Passenger ride time
  - Routes serviced
  - CO2 emissions
  - Impact of 'Green' or 'Restricted' routes
  - Mileage driven

Why apply technology to scheduling & routing ?

- Introduction of '*what if*' analysis
  - Ride times SLA's
  - Stop assignments & assignment policy
  - Environmental agenda
  - Vehicle layout/configuration
  - Re-fleeting
  - Budget modelling

Why apply technology to scheduling & routing ?

- To facilitate a balanced view and consideration for all stakeholders as one solution does not typically address.
  - Budget constraints
  - Individual user need
  - Current fleet profile
  - Environmental issues/policy
  - Staff preferences
  - Re-fleeting requirements going forward
  - Strategic considerations

Why apply technology to scheduling & routing ?

- Display these ‘solutions’ in a user friendly, non-technical manner.

Menu | Original Solution | Solutions Summary | Selected Solutions

Select solution for viewing:

Highlighted cells indicate the minimum value in each KPI category

	Un-booked Jobs	Distance (miles)	Number of vehicles	Passenger on-vehicle time (hrs:mins)	Vehicle travel time (hrs:mins)	CO2 emmision (kgs)
Orginal Solution	0	235.938	16	60:48	13:29	N/A
Solution 1	0	183.234	15	51:27	11:06	29.489
Solution 2	0	188.525	14	54:00	11:21	30.34
Solution 3	0	189.504	16	50:49	11:19	30.499

Non transport or IT technical staff can understand ‘cause and effect’

Why ?

Because it is does not need to be complex or difficult and is proven to work; **reducing the cost of school and special needs transport whilst improving overall service...**

...and benefitting wider areas of transport operations.

What is needed?

1. Location/Addressing information (postcode/x-y co-ordinates)
2. Resource details – vehicles and capabilities, escorts etc
3. SLA's/Rules
   - Ride time SLA's
   - Restricted routes
   - Vehicle layouts etc
4. Objectives – The Aim
   - Budget
   - Environmental
   - Deficiencies

...and the results can be significant.

Home to School Transport

573 pupils at a Leading Catholic School in the South West of England

Data Summary – 1st revision

Original

Picking up 573 pupils

16 x Vehicles

- 15 X 53 Seat Vehicles
- 1 x 33 Seat Vehicle

Vehicle Utilisation at 69%

Total distance travelled 272 miles

Servicing approx 106 stops

6 of 16 routes 60 minutes or longer

1st Revision

Picking up 573 pupils

16 x Vehicles

- 7 X 53 Seat Vehicles (<8)
- 9 x 33 Seat Vehicle (>8)

Vehicle Utilisation at 86% **(>17%)**

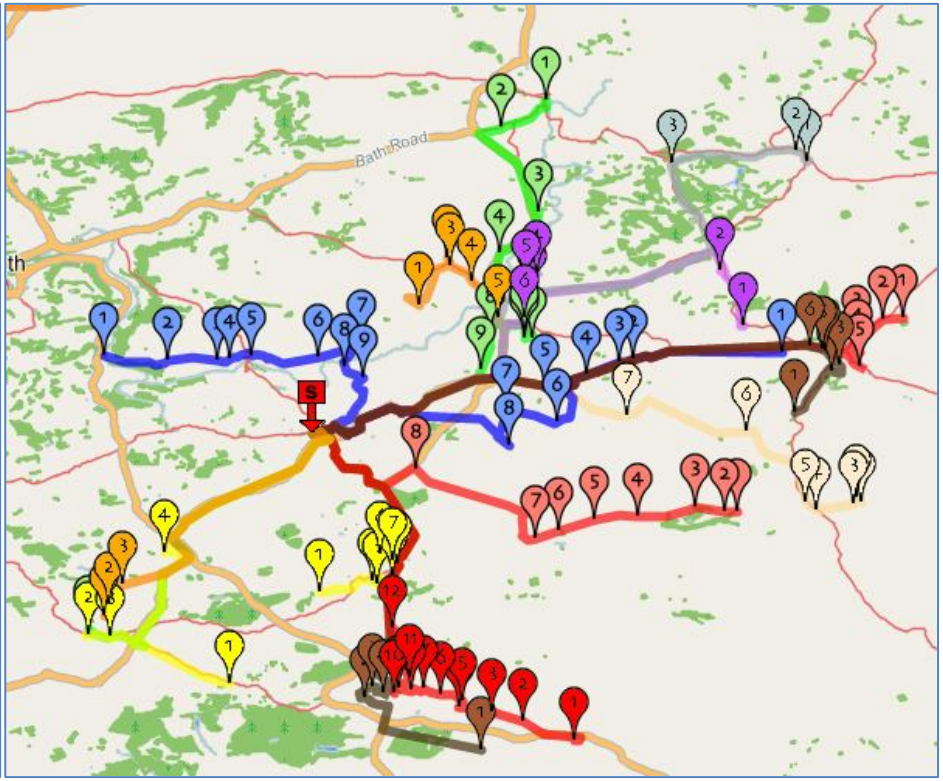
Total distance travelled 206 miles **(<66)**

Servicing approx 106 stops

3 of 16 routes 60 minutes or longer **(<3)**

Run sheet Overview

Original Solution



1st Revision

Data Summary – 2nd revision

Original

Picking up 573 pupils

16 x Vehicles

- 15 X 53 Seat Vehicles
- 1 x 33 Seat Vehicle

Vehicle Utilisation at 69%

Total distance travelled 272 miles

Servicing approx 106 stops

6 of 16 routes 60 minutes or longer

2nd Revision

Picking up 573 pupils

14 x Vehicles

- 9 X 53 Seat Vehicles (<6)
- 5 x 33 Seat Vehicle (>4)

Vehicle Utilisation at 89% **(>20%)**

Total distance travelled 188 miles **(<84)**

Servicing approx 106 stops

3 of 16 routes 60 minutes or longer **(<3)**

A STUDY

Original Solution

2nd Revision

Reducing Cost and Improving Service

Home to School Transport

- £79,800 direct saving
- 31,920 less miles driven p/a
- Vehicle utilisation up 20%
- Improved SLA's
- 2 fewer vehicles

Daily transport for 573 pupils

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