Home School Transport

Innovation, collaborations and funding partnerships

School and special needs transport: maintaining service provision whilst reducing cost

Dale Howarth

Business Development Director

Logical Transport

Tuesday 29 January 2013

CBI Conference Centre, London

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LOCAL TRANSPORT TODAY

routeone

Travel reduction funding announced

Logical Transport is providing £100,000 funding for local authorities to investigate how the miles driven by their school and social care transport services can be reduced. The consultancy said that its LT RouteForce passenger scheduling and route optimisation tool, developed with the University of Southampton, suggested that the miles driven can be reduced by as much as 34%, also reducing costs. Each of the 20 studies to be funded will consider existing routes and schedules and reschedule these, highlighting the savings that could accrue.

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Tuesday, 14 August 2012

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Logical Transport (LT) is proud to announce the release of £100,000 funding for local authorities to enable them to work with the LT research and consulting team, headed by Dr Nik Pearson, to investigate how their existing approach to School, Special Needs and Social Care Transport scheduling and optimisation can be significantly enhanced with the aim of reducing service cost whilst maintaining service provision across an authority.

> "Logical Transport (LT) is proud to announce the release of £100,000 funding"

LT works closely with the University of Southampton, one of the top 15 research universities in the UK and well recognised for its entrepreneurial and successful track record with partner companies. LT have worked with the University of Southampton for a number of years with part of this time dedicated to the development of LT's new key passenger scheduling and route optimisation tool, LT RouteForce.

Initial research using LT RouteForce is impressive and has already been completed with a number of authorities, indicating that reductions of between 12% and 15% in vehicle, driver and escort resources can be achieved. In addition, the studies indicate miles driven can be reduced by as much as 34% for some authorities with a significant further reduction in the cost of service provision.

Dale Howarth, Business Development Director of Logical Transport commented, "We are very much encouraged by the early results we are seeing. With the current economic climate and the increased budget constraints that all authorities are under, gains such as these are of real benefit going forward, delivering a more efficient use of resources, reducing the cost of passenger

‘By managing constraints more effectively we narrow the virtually innumerably feasible options and more readily compare these to deliver solutions based on those factors that are important to you, the passenger and stakeholders.’

Dr.Nik Pearson
Senior Analytical Consultant – Logical Transport

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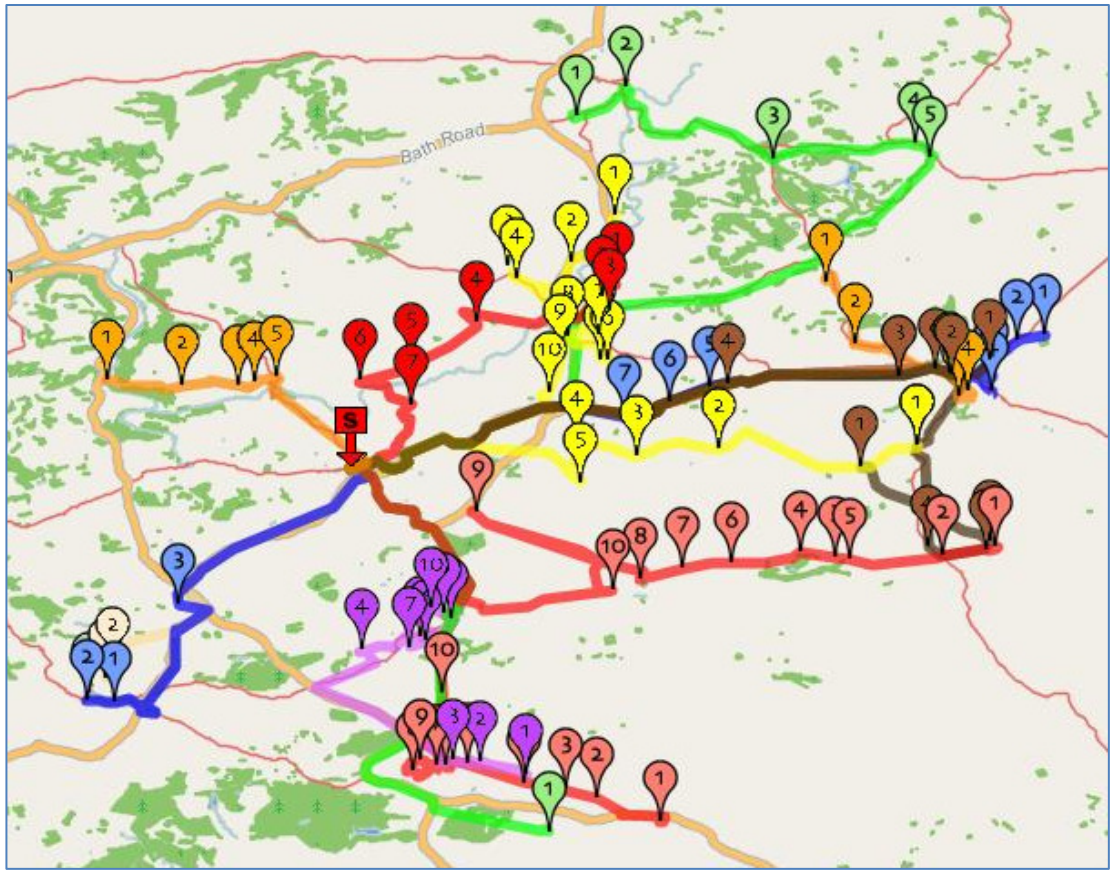
The result for <u>just</u> 1 School in 1 Authority



Original Solution

565 pupils

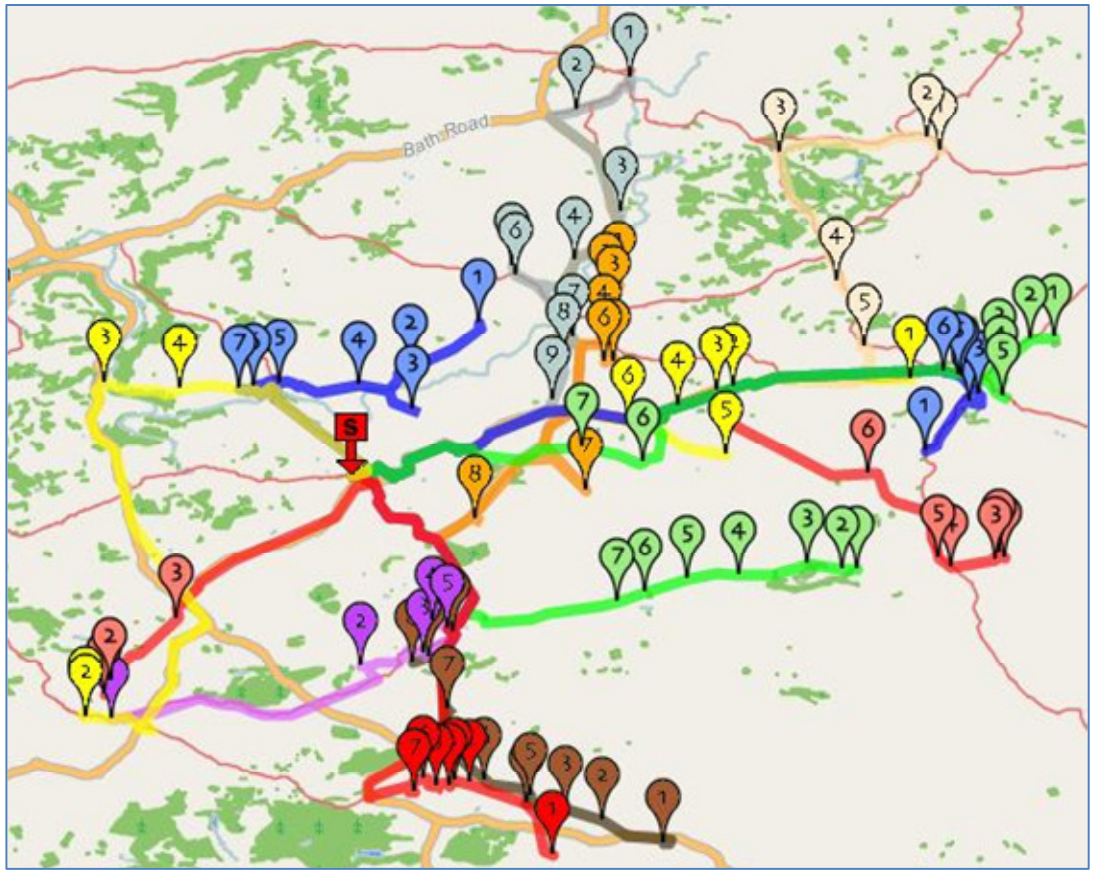
16 vehicles

Max. ride time 70 minutes (*Longer for 4 pupils*)

Core aims were to reduce:

1. Distance travelled
2. # Routes/Vehicles
3. Passenger travel time
4. Vehicle travel time

The result for <u>just</u> 1 School in 1 Authority



Optimised Solution

565 pupils

13 vehicles (*3 fewer vehicles, drivers and escorts.*)

18.6% mileage reduction

12% increased utilisation

Max. ride time 66 minutes (*77%, 60 minutes or less*)

Modelled using LT RouteForce

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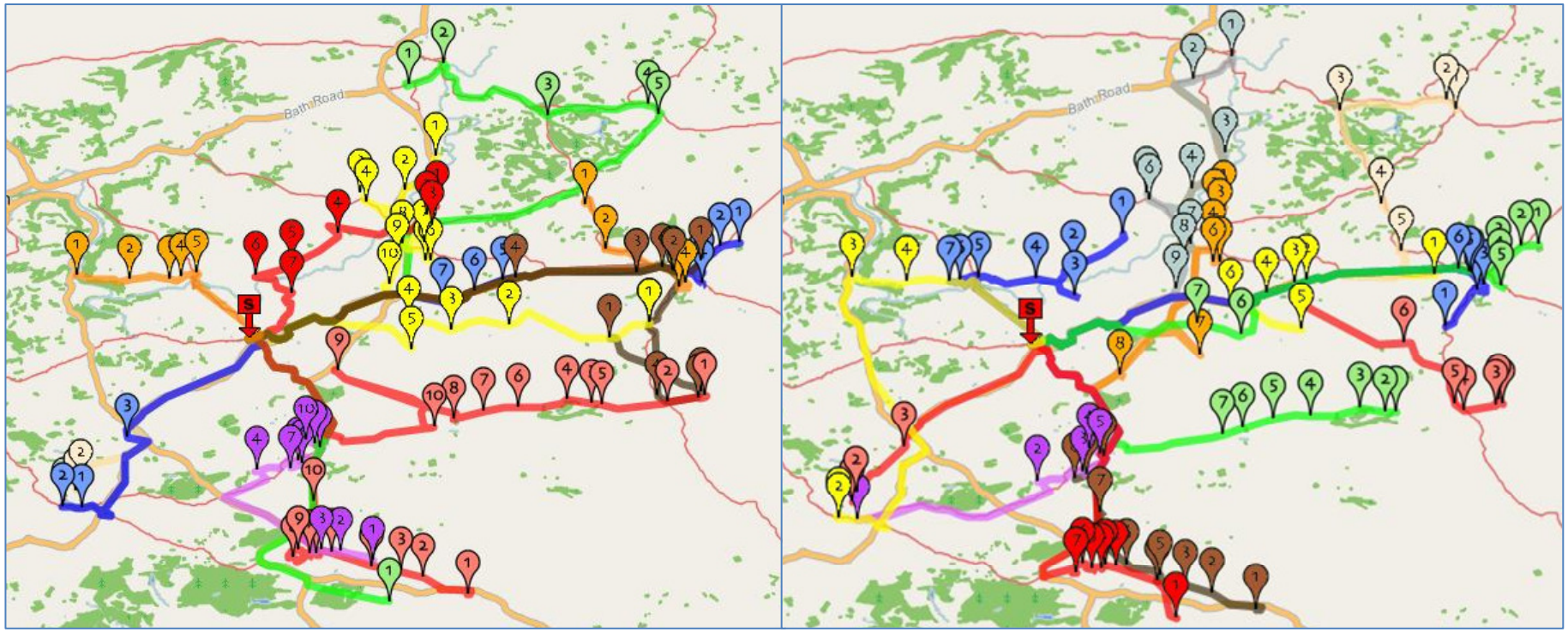
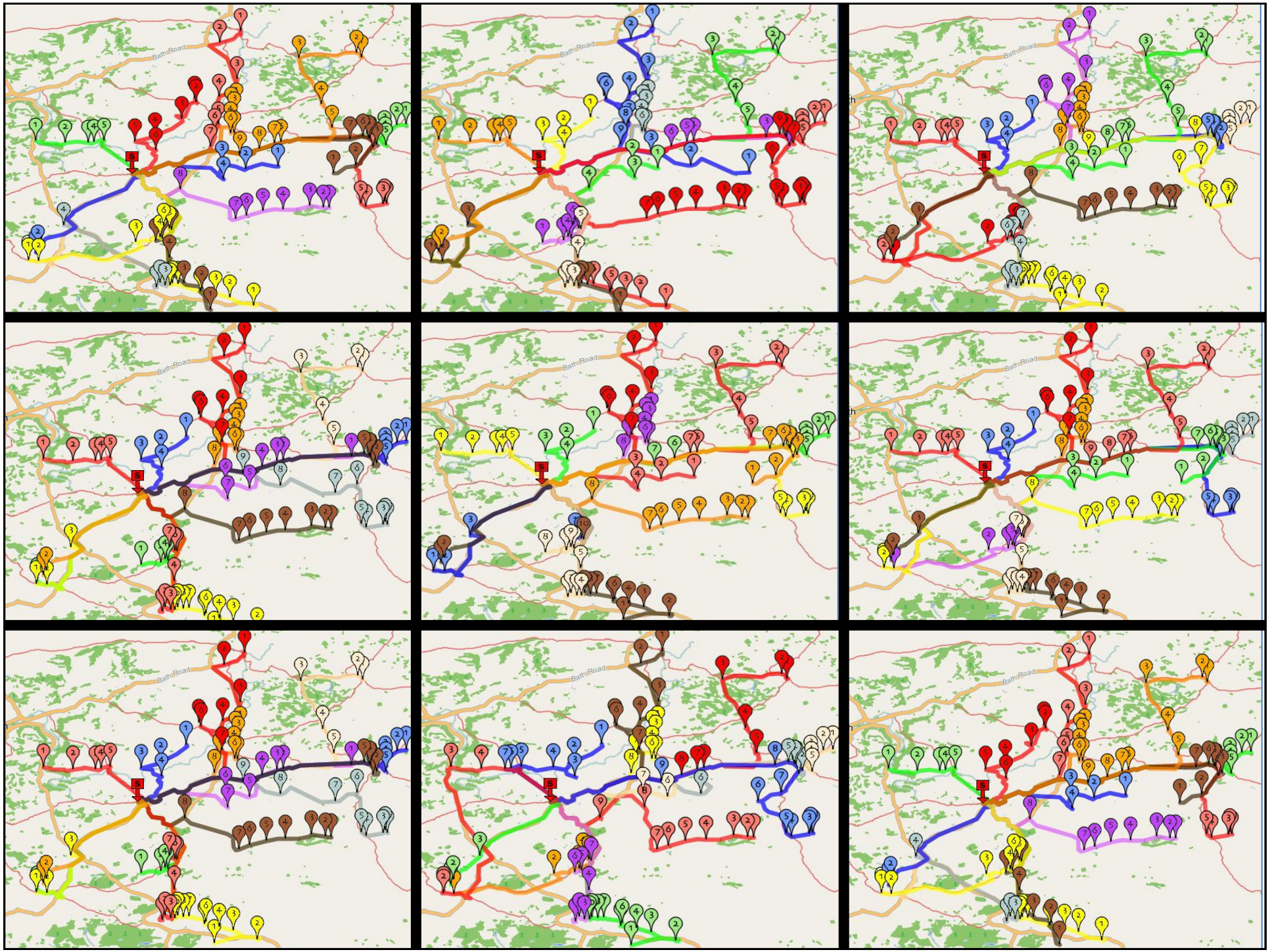
Comparison for <u>just</u> 1 School in 1 Authority



Original Solution **Optimised Solution**

Bath Road
S


BathRoad

The Barriers…

Psychology & Perception

•This is how we have always done it…and it works! So why change it?

•Too complex for another manual approach, so we stick with what we know.

•Only one choice - 'Manual' or 'Technology'?

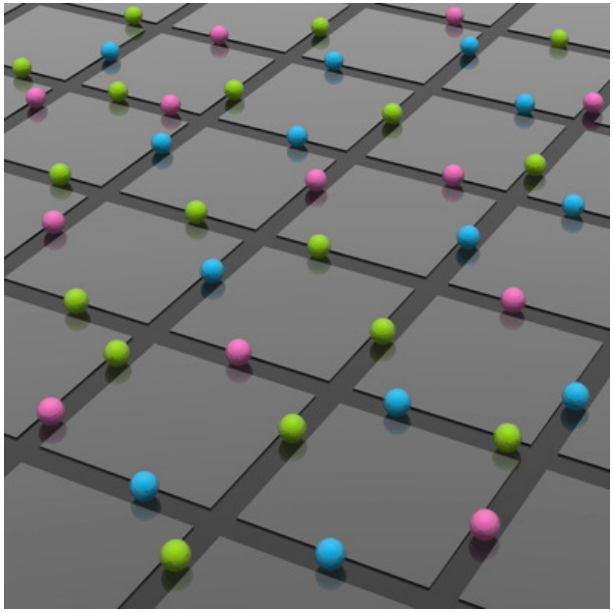
•The 'threat' and 'weakness' of technology.

- Disruption
- Costly to implement and maintain
- Lack of flexibility
- Technology 'fails'

But current methods do work at a core level!

Yes, it is complex and here's why…

- Individual needs are diverse
- Multiple stakeholders – parents, schools, local authority, operator, social & child services.
- No single objective and many constraints:
  - Core service provision
  - SLA requirements
  - Transport rules & guidelines
  - Budgetary constraints
  - Geographical



All adding complexity

Manual or Technology ?

The simple answer is both

Technology is not the solution!

<u>It is part of the solution.</u>

We need to engage technology as a 'decision support tool' as part of a tailored process.

‘Manual’ or ‘Technology’ ?

Humans are good at understanding:

- Individual need
- The situation ‘on the ground’
- Constraints and pressures
- The intangibles
- The bigger picture

<u>And have to make the decisions!</u>

‘Manual’ or ‘Technology’ ?

Technology is good at:

- Processing large amounts of data and variables - accurately, consistently, quickly.
- Performing ‘what if’ analysis
- Establishing different scenarios:
  - Runtime
  - Fleet & Fleet Configuration
  - Staggered Arrival/Departure times
  - Pickup Rules
  - Varied KPI’s and Preferences

But there are trade-offs to consider

Passenger on vehicle time v # and type of vehicles

Shortest Route v Quickest Route

Real Cost v Service Levels

Fleet Flexibility v Fixed Configuration

CO2 & The Environment

In Summary

- The tools exist to establish the right solution
- These ‘decision support tools’ are proven
- Realisation and a modified approach are required
- Technology as a ‘decision support tool’ and part of a tailored process
- Trade-offs between the needs of individual stakeholders

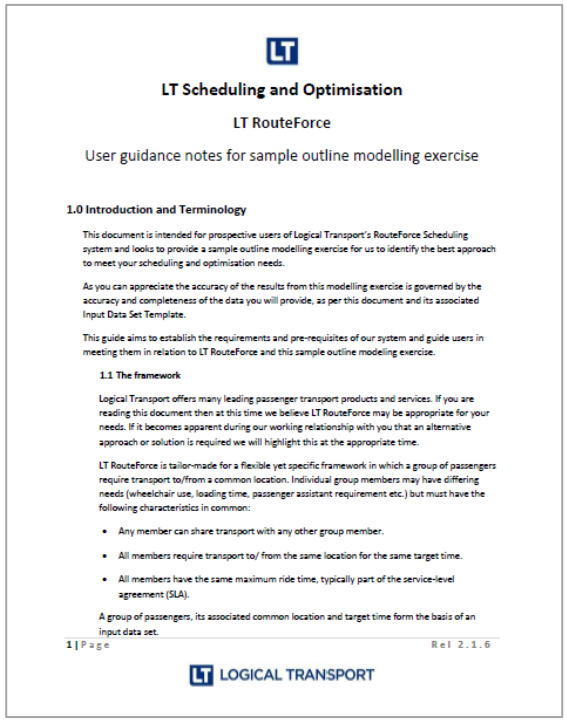
Technology to enhance the solution, not to be the solution!

The Result

It is both possible and realistic to maintain and enhance service provision whilst reducing cost across a diverse range of School, Special Need and Social Care transport services.

The Special Funding Initiative - ‘ Impact Studies’

University of Southampton



LT Scheduling and Optimisation

LT RouteForce

User guidance notes for sample outline modelling exercise

1.0 Introduction and Terminology

This document is intended for prospective users of Logical Transport's RouteForce Scheduling system and looks to provide a sample outline modelling exercise for us to identify the best approach to meet your scheduling and optimisation needs.

As you can appreciate the accuracy of the results from this modelling exercise is governed by the accuracy and completeness of the data you will provide, as per this document and its associated Input Data Set Template.

This guide aims to establish the requirements and pre-requisites of our system and guide users in meeting them in relation to LT RouteForce and this sample outline modeling exercise.

1.1 The framework

Logical Transport offers many leading passenger transport products and services. If you are reading this document then at this time we believe LT RouteForce may be appropriate for your needs. If it becomes apparent during our working relationship with you that an alternative approach or solution is required we will highlight this at the appropriate time.

LT RouteForce is tailor-made for a flexible yet specific framework in which a group of passengers require transport to/from a common location. Individual group members may have differing needs (wheelchair use, loading time, passenger assistant requirement etc.) but must have the following characteristics in common:

- Any member can share transport with any other group member.
- All members require transport to/ from the same location for the same target time.
- All members have the same maximum ride time, typically part of the service-level agreement (SLA).

A group of passengers, its associated common location and target time form the basis of an input data set.

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- Aimed at identifying the best approach to meet your specific scheduling and optimisation needs.
- The study is developed around your needs and those of your passengers.
- LT RouteForce ‘decision support tool’ is used as the optimisation engine within the study.
- Gains are ‘real’, as they will be based on one or more of your existing routes and schedules.
- No financial investment is required.

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