

HULTS Feasibility study

High Wycombe to Bourne End

15. January 2009

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For Client: Summerleaze Ltd.





History

- ▶ The Wycombe Railway Company
- ▶ Maidenhead to High Wycombe line was opened 1st August 1854
- ▶ Bourne End to High Wycombe closed to freight traffic from 18th July 1966 and closed completely on 4th May 1970
- ▶ Distance HW ÷ Maidenhead is 16,4 km, HW ÷ Bourne End is 9,04 km, Bourne End ÷ Marlow is 4,26 km
- ▶ Stops at Maidenhead, Furze Platt, Cookham, Bourne End, Wooburn Green, Loudwater and High Wycombe
- ▶ July 1962 the steam locomotive was replaced with a Diesel multiple unit

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History

1854 - 1974



1974 - 2000



2000 - 2009





Future - 2010



Power: Li-ion battery, Ultracapacitor, Flywheel, Hydrogen, Hybrid



Curent situation

► Rail

- Maidenhead - Bourne End - Marlow is operational
- 23 services per day (2 in peak hour, 12 minutes JT)
- 500 people per day (National railway statistics)
- First Great Western
- Bourne End - High Wycombe preserved alignment of the Railway from further development. The intention is to keep viable the option to reinstate the Wycombe Railway to provide enhanced north/south communications in this part of Buckinghamshire.

► Bus

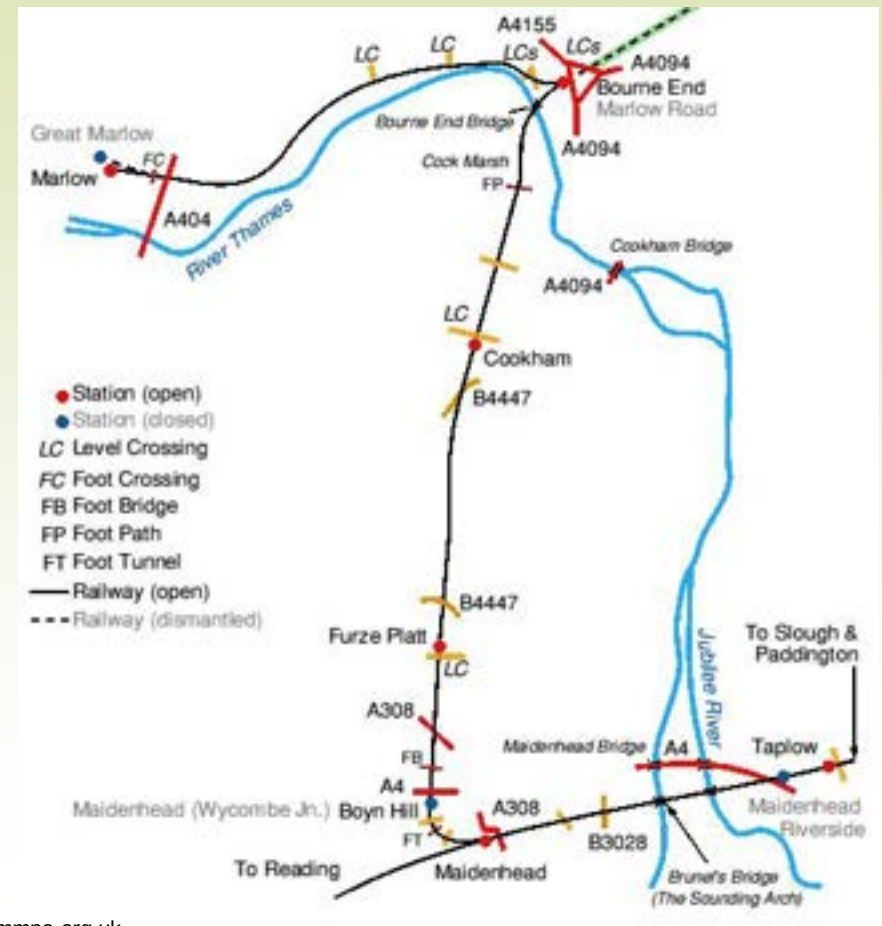
- HW - Bourne End has 50 bus services (6 in peak hour, 30 minutes JT)
- HW - Maidenhead has 13 bus services (1 in peak hour, 50 minutes JT)
- Carousel Buses (1/36/37)

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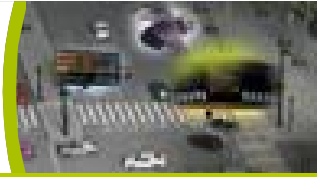
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Schema of the routes



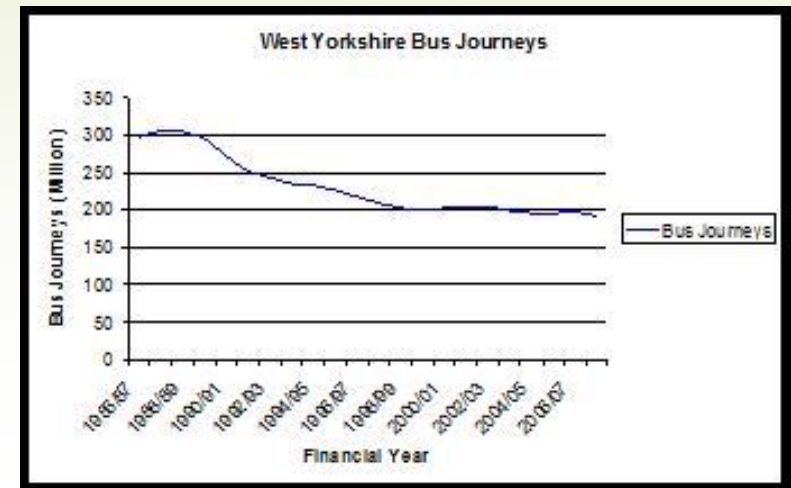
Pictures from www.mmpa.org.uk

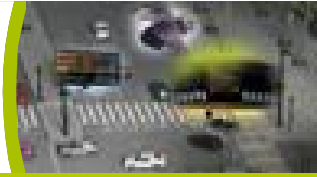


Rapid Transit

► BRT

- Commonly presented as a substitute of LRT
- Manchester and Leeds experience failed to attract expressive car mode shift
- Manchester car mode shift
 - 7% - BRT
 - 25% - LRT
- Leeds BRT has experienced PT decline
 - Road traffic growth between 1993/2004 = 5.4%





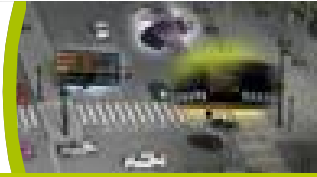
Leeds BRT

- **Segregated Routes**



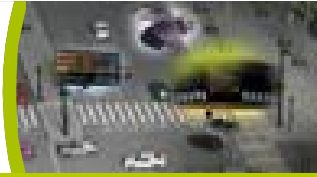
- **Future and Guided Trolley Bus**





BRT i Bogotá



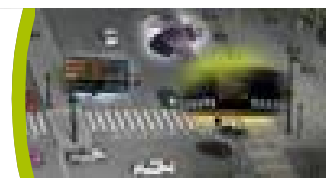


LRT - Manchester



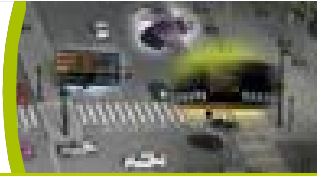
Potential HULTS Features





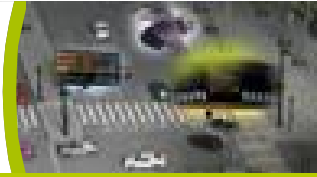
Rail Systems vs BRT

Light Rail System	BRT System
• Perceived by the public as a more attractive mode than BRT. • Deliver greater and more sustained modal shift than BRT. • Gives more confidence to potential investors due to its fixed asset offer which has a greater perception of permanence than bus. • Better suited to the medieval street layouts of European cities. • More publicly acceptable in urban areas than high frequency bus services. • High vehicle capacity carrying passengers more efficiently than bus. • Best use can be made of junction priority. • High quality ride offered throughout the journey length. • Lower environmental impact than bus systems in urban areas.	• Infrastructure cost is cheaper than Light Rail Systems. • BRT offers greater route flexibility than Light Rail Systems. • Service is easier to be extended to low density areas without the cost aggregated to Light Rail infrastructure. • BRT can be implemented quicker than Light Rail Systems. • BRT offers better quality ride to passengers than conventional buses if the quality features of Light Rail System are incorporated into system design.



Passenger.km on LRT and Buses



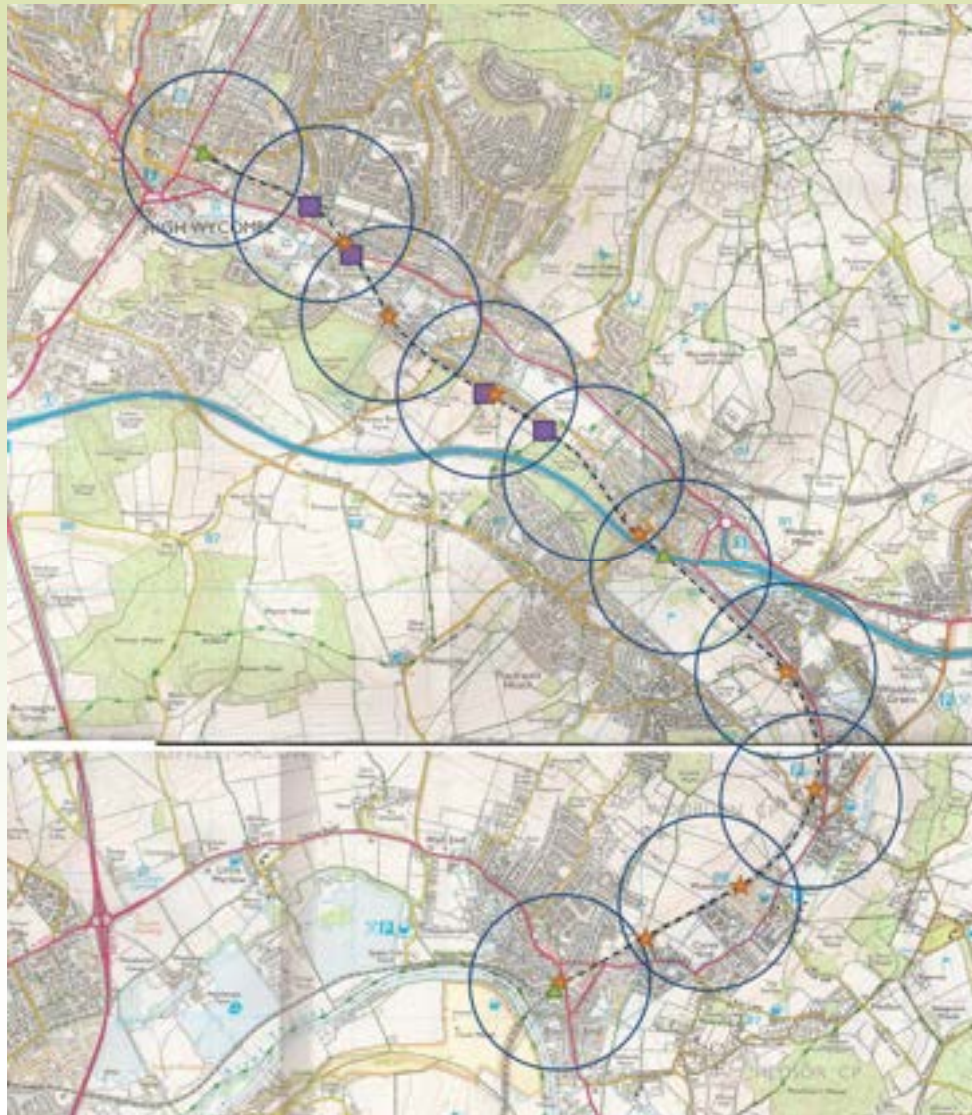


Environmental and Health Issues

- ▶ **13.9% of commuters on public transport (around 6 million people)**
- ▶ **Road charging and Zero Emission Zones**
- ▶ **Lung disease**
 - 153,000 deaths in 1999
 - 2.8 Million bed days per year
 - According NHS ï Bed day cost £2000 - £4000

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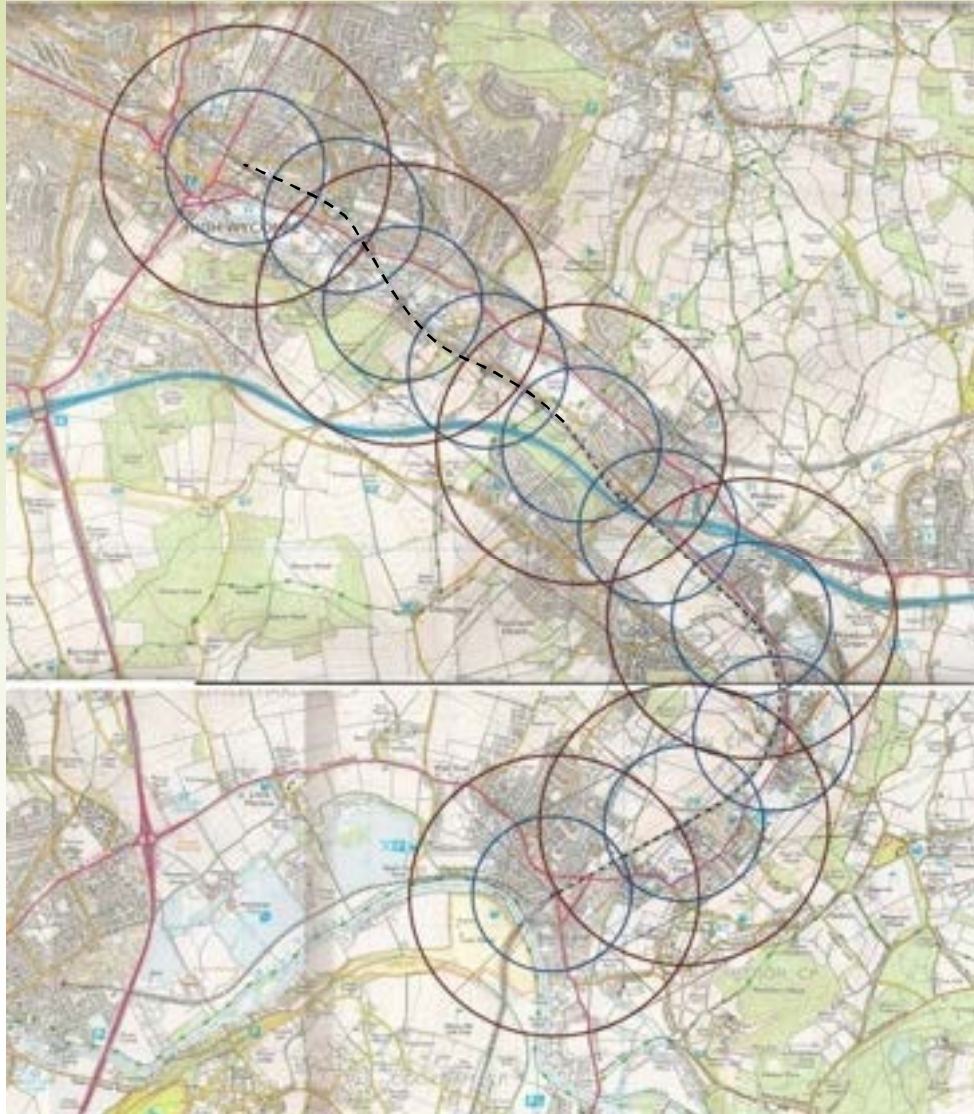
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-  Bridges / viaducts
-  Stop locations
-  Depot locations
-  Original track alignment
-  500 m walking distance
(10 to 15 minutes walk)

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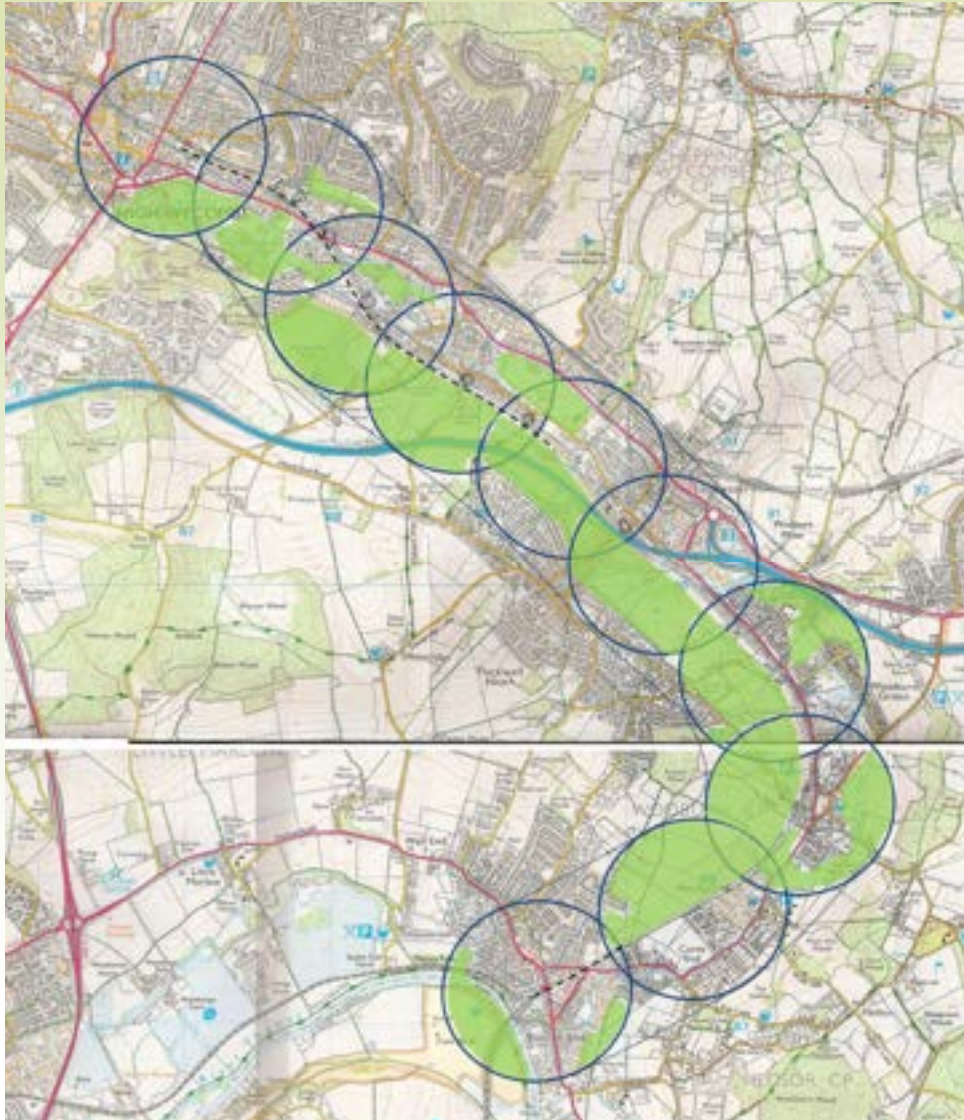
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- Original track alignment
- 500 m walking distance
(10 ÷ 15 minutes walk)
- 1000 m walking distance
(20 ÷ 30 minutes walk)

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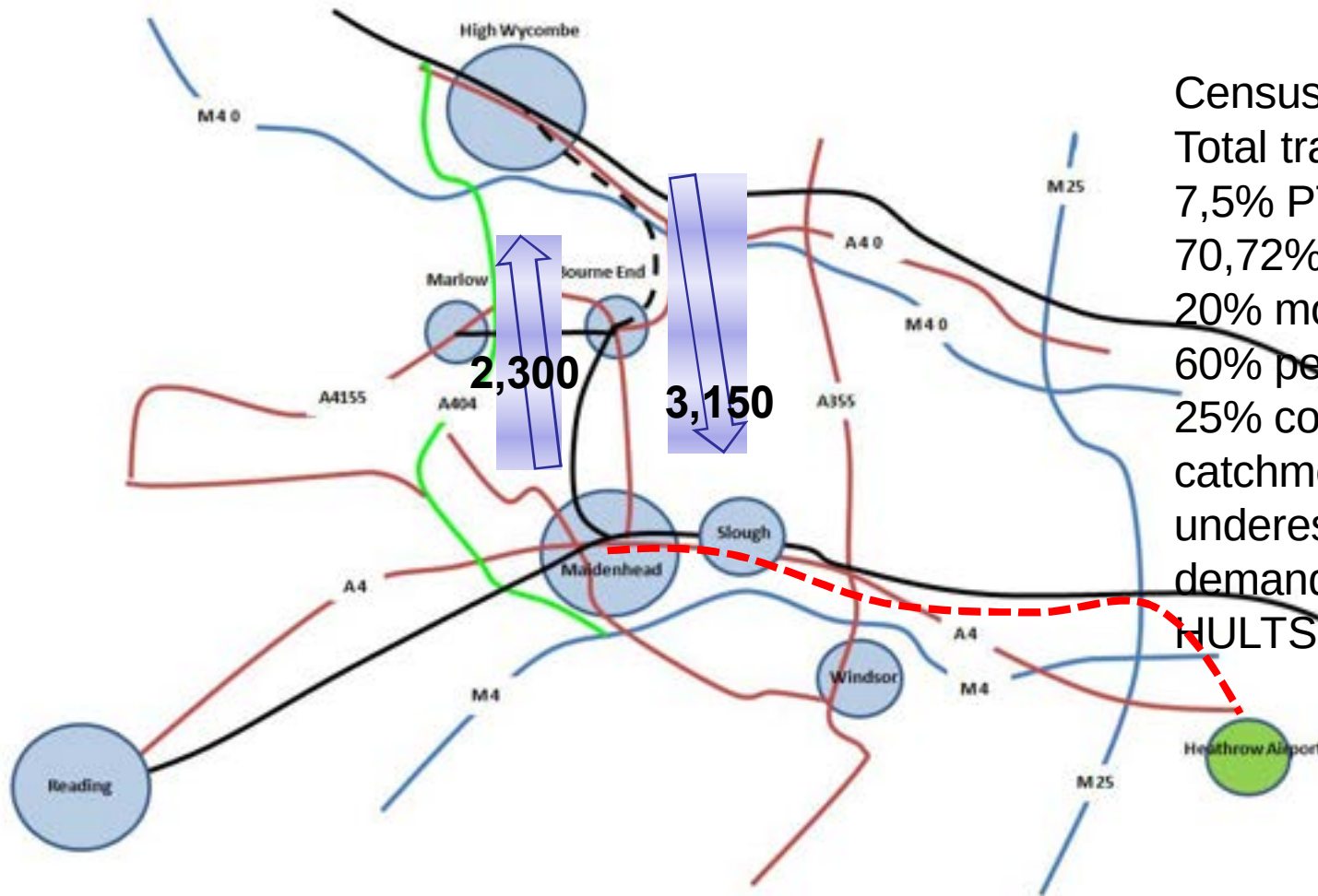
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- 500 m walking distance zone has:
 - 60% residential / employment
 - 40% green fields
 - Area of 78,5 ha
- Population:
 - High Wycombe is 92.307 people
 - Marlow is 13.962 people
 - Bourne End is 6.479 people
 - Maidenhead is 133.626 people
- Average population density is 34 people/ha
- Each zone has 1354 people
- Total route catchment is cca. 20.000 people
- 7,75% of people are using public transport
- 70,72 % of people are driving
- Commuters by PT+ 20% of possible modal shift from cars
- 60% will be the maximum peak demand
- 3295 people / trips**

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Census 2001

Total travel demand is 5,450 trips

7,5% PT is 409 trips

70,72% car driver is 3854 trips

20% modal shift is 771 trips

60% peak is 708 trips

25% compare to the HULTS

catchment potential,

underestimating the commuting

demand due not having the

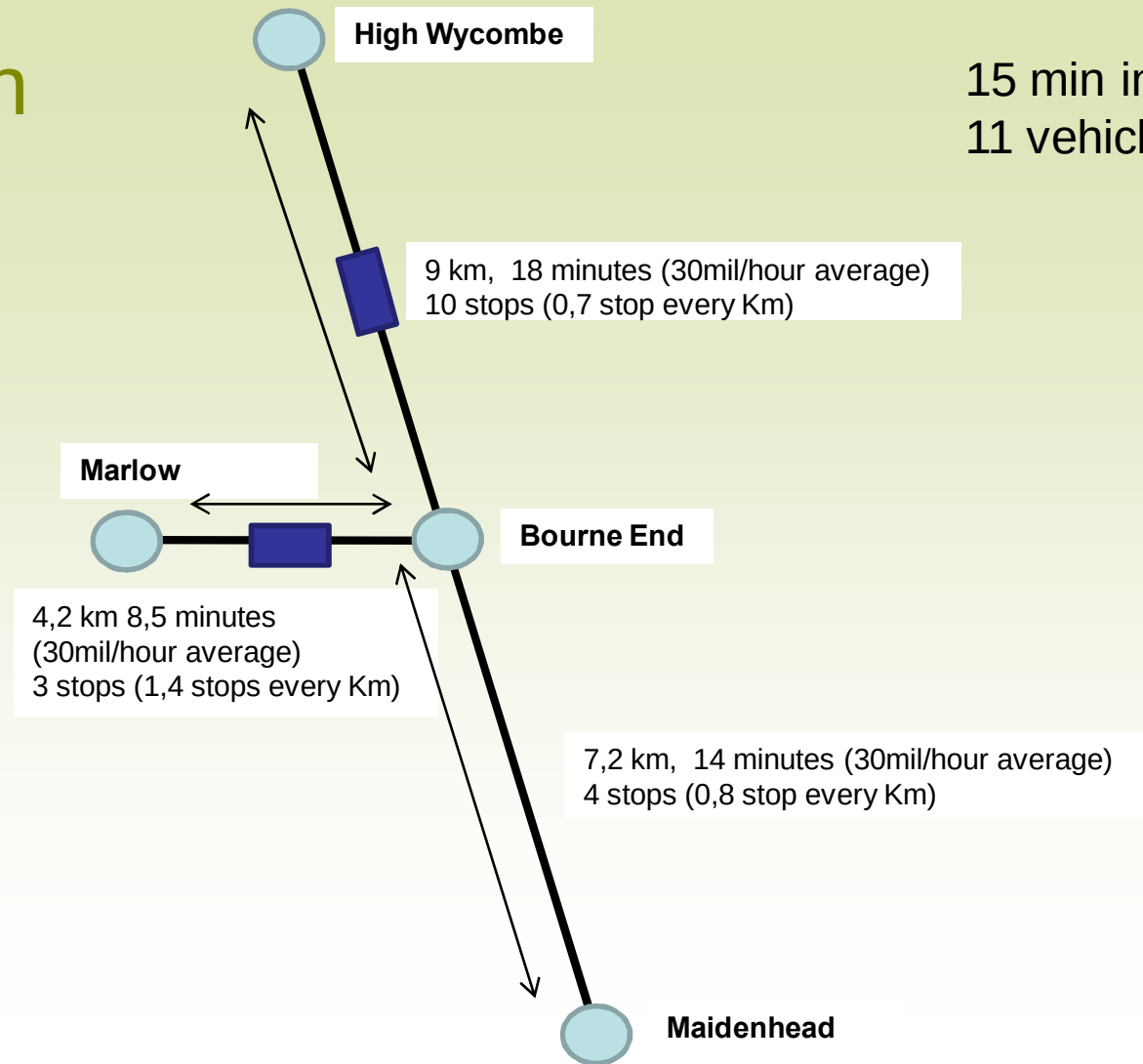
HULTS implemented etc.

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Operation



15 min interval service
11 vehicles (60 passenger capacity)

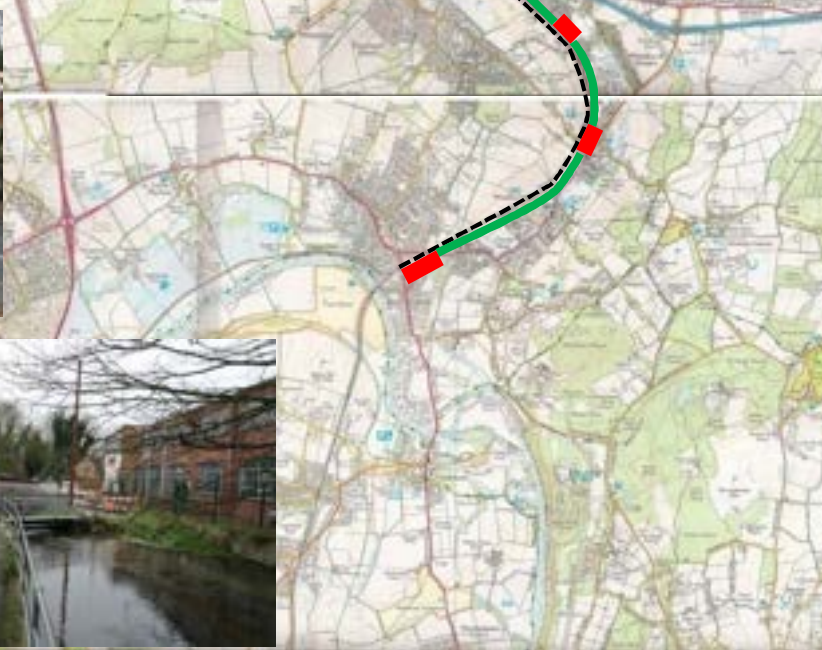


Preserved alignment



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Route options

[Route options](#)



Investment cost HULTS

Element	Investment cost GBP	Comments
Single track (1mil per kilometer + services)	9.580.000	With 1 kilometer for double track for passing
4 bridges (2.5 mil per meter)	10.750.000	Need to be build
2 additional bridges (2.5 mil per meter)	6.000.000	Could be level crossing
3 level crossings	600.000	Including traffic lights
Property purchase (500.000 GBP per property)	3.000.000	6 properties
Vehicle cost (60 people capacity)	5.000.000	10 vehicles will be required for 15 min interval
Depot and warehouse	1.500.000	Bourne End location is preferred
Total	36.430.000	4 mil per km



Investment cost Hybrid bus

Element	Investment cost GBP	Comments
Single track (0.8 mil per kilometer + services)	8.068.000	Includes road improvements
4 bridges (2.5 mil per meter)	0	No need to build
2 additional bridges (2.5 mil per meter)	0	No need to build
6 level crossings	1.200.000	Including traffic lights
Property purchase (500.000 GBP per property)	0	
Vehicle cost (60 people capacity)	4.000.000	10 vehicles will be required for 15 min interval
Depot and warehouse	1.500.000	Bourne End location is preferred
Total	14.768.000	1.6 mil per km



Opportunities

- ▶ High Wycombe District Council i Planning department
- ▶ Royal Borough of Windsor and Maidenhead i Planning department
- ▶ Buckinghamshire County Council (September 2008) backed the proposal for reinstatement and called upon a private operator to finance the rebuilding work.
- ▶ First Great Western
- ▶ Network Rail
- ▶ DAW Railway
- ▶ Transport Design International
- ▶ The High Wycombe Society



Next steps in phase II.

- ▶ **Sensitivity testing, patronage exercise, pricing policy recommendation**
- ▶ **Investment cost exercise, cost benefit analyses, operational cost analyses, investment return**
- ▶ **Funding and venture opportunities of construction and operation**
- ▶ **Price validation by liaison with private companies**
- ▶ **Liaison with private / public companies (e.g. Network rail etc.)**
- ▶ **Land ownership identification**
- ▶ **Outcomes presentations**
- ▶ **Negotiation with transport planning departments**

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Thank you for your attention

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