

TAG Unit 3.3.12 – Physical Fitness

Baseline Conditions

- 1.1. It is recognised that people who use public transport tend to walk further, which has a beneficial effect on physical fitness. Relatively small amounts of regular walking and cycling can lead to significant improvements in physical fitness and overall wellbeing.

Impact of Do Minimum

- 1.2. The impact of the Do Minimum scenario on physical fitness is likely to be minimal and has therefore been assessed as **neutral**.

Impact of Preferred Scheme

- 1.3. The impact of the Preferred Scheme on physical fitness is considered to be **slight beneficial** due to a predicted increased modal shift from private vehicle to public transport and overall improvements in cycling facilities.
- 1.4. **Effects during Construction:** Construction works for the Preferred Scheme may result in some short term adverse effect on cycle facilities.
- 1.5. **Effects during Operation:** The operation of the Preferred Scheme is expected to have a beneficial effect on the number of people using public transport, influenced by a modal shift from private vehicle use to public transport. This may result in an increase in cycling and walking between the starting point to the NGT stop and from the NGT stop to the final destination which would increase the level of physical fitness.
- 1.6. The Preferred Scheme includes the provision of segregated cycle facilities along the segregated Scheme lanes which would have a beneficial effect on physical fitness. However, there are adverse effects on the existing cycle route on the North Line as it is anticipated that approximately 1 kilometre will be potentially lost. Mitigation/replacement for this section is currently under consideration. Overall improvements to the cycle routes for the Preferred Scheme are expected to provide beneficial effects on physical fitness.

Impact of Next Best Alternative

- 1.7. The effect of the Next Best Alternative on physical fitness has been assessed as **neutral to slight beneficial** due to increased modal shift from private vehicle to public transport. However, this modal shift is expected to be less than for the Preferred Scheme, although with overall improvements in cycling facilities.

- 1.8. **Effects during Construction:** Construction works for the Next Best Alternative may result in some short term adverse effect on cycle facilities.
- 1.9. **Effects during Operation:** The Next Best Alternative would include the provision of new hybrid buses, increased level of priority at signal junctions and dedicated bus lanes along sections of the Scheme option. The Next Best Alternative is expected to encourage modal shift from private vehicle to public transport and therefore increase the level of physical fitness, however, the modal shift is expected to be less than for the Preferred Scheme.
- 1.10. The Next Best Alternative includes the provision of segregated cycle facilities along the segregated Scheme lanes which would have a beneficial effect on physical fitness. However, there are some adverse effects on the existing cycle route on the North Line and appropriate mitigation is currently under consideration. The overall improvements to cycle routes are expected to provide beneficial effects on physical fitness.

Impact of Lower Cost Alternative

- 1.11. The impact of the Lower Cost Alternative on physical fitness has been assessed as **neutral** due to limited expectations in significant modal shift and lack of enhanced cycle routes for this option.
- 1.12. **Effects during Construction:** Construction works are expected to have a minimal effect on existing cycle facilities as there are only minimal improvements and construction required to existing bus lanes with the Lower Cost Alternative.
- 1.13. **Effects during Operation:** The Lower Cost Alternative would include a new fleet of diesel buses, with minimal improvements to existing bus lanes and no enhancement of existing cycle routes. It is not anticipated that the Lower Cost Alternative would encourage considerable modal shift from private vehicle use to public transport. This lack of modal shift reflects the lack of expected change in physical fitness.

TAG Unit 3.3.12 - The Physical Fitness: Worksheets

Benefits of physical fitness resulting from modal shift onto public transport which encourage walking or cycling to the stop may include:

- Reduced stress and improved health which all lead to lifestyle improvements;
- Reduced demand for car parking enabling land previously used for parking to be put to more profitable use;
- Overall reduced traffic levels which result in less pollution and improve air quality in the local area; and
- Reduced traffic levels resulting in reduced road traffic accidents.

The Scheme is for a new public transport service rather than a specific walking and/or cycling scheme which is not expected to result in significant changes in physical activity. However, there are two areas to be considered being:

1. Change in pedestrians and cyclists between the starting point with the destination, with one of these being the transit stop; and
2. Change in cyclist movements due to the enhancement of cycle facilities associated with each Scheme option.

Modelling of changes in walking and/or cycling as a result of the Scheme has not been undertaken and therefore a full quantitative assessment for the WebTag physical fitness worksheet cannot be carried out. TAG Unit 3.3.12, Paragraph 1.2.10 states that where the Scheme is 'demonstrated to have a relatively insignificant impact on physical activity ... it will be satisfactory to enter a qualitative indicator in the AST, showing separately the forecast changes in the numbers of cyclists and pedestrians'.

Surveys of existing pedestrian and cyclist movements and modelling to predict movements when the Scheme has been undertaken and these are summarised below. Across the Scheme, any level of upgrade of the public transport system would be expected to attract more passengers, therefore resulting in a modal shift from private vehicle use to public transport which would increase physical activity between the starting point and the transit stop or the stop and destination from current movements. However, the likely level of shift varies widely between Scheme options and is discussed further for each specific option as qualitative comments in the worksheets below.

Furthermore, the options include varying levels of enhancements to cycle facilities including segregated sections of the routes including cycle provisions.

Reference Sources

- Mott MacDonald (2009), NGT Project Preferred Route, Drawing nos. 236834/PRF/001 and 236834/PRF/002.
- Mott MacDonald (2009), NGT Project Next Best Alternative (NBA), Drawing nos. 236834/NB/001 and 236834/NB/002.
- Mott MacDonald (2009), NGT Project Low Cost Alternative (LCA), Drawing nos. 236834/LC/001 and 236834/LC/002.
- Steer Davies Gleave (August 2009), Leeds New Generation Transport – Interim Consultation Results.

Scheme: Preferred Scheme

Activity Duration per day	Change in Number of People	
	Pedestrians	Cyclists
Less than 30 minutes	Slight increase	Increase
Greater than 30 minutes	Neutral	Increase

Summary assessment score:

N/A, qualitative score only.

Qualitative comments:

The trolleybus transit mode is associated with a number of actual or perceived benefits which would influence modal shift from private vehicle use to public transport. These benefits are:

- A high quality aspirational system;
- Reduced journey times due to the majority of the route running in offline sections and with priority at signalised traffic junctions;
- Significantly enhanced reliability due to control over the service by NGT;
- Perception of permanence due to the OHL infrastructure;
- Reduced crowding due to high service frequency; and
- Higher quality provision and maintenance of vehicles and stops.

Along the South Line, the Preferred Route differs considerably from the existing route for the Next Best Option and Lower Cost Alternative. This brings the route closer to the industrial area along Balm Road/Church Street and residential area but further away from the residential area along Low Road (A61). It is unknown how well these areas are/will be serviced by other public transport modes than those considered under this proposal.

The proposal includes Park and Ride facilities at Bodington Park with provision for approximately 800 spaces and another at Stourton with provision for 2,200 spaces. These would be approximately 25% larger than the Park and Ride for the Next Best Alternative and 50% larger than the Lower Cost Alternative. Both Park and Ride centres would include provision for covered cycle storage relative to its size. An adequate volume of facilities would accommodate a higher volume of cycles and therefore encourage cycling. However, the fact that there is a considerable quantity of vehicle spaces may encourage private vehicle use for a short journey to the Park and Ride rather than encouraging physical fitness.

The Preferred Route includes provision for many new or upgraded pedestrian crossings and is likely to include some new footway and cycle links. Cyclists should benefit from enhancements to facilities including segregated cycle facilities along segregated trolleybus lanes, more bus lanes, plus Advanced Stop Lines and cycle crossings. Along the North Line, however, there are adverse impacts on the existing cycle route, and at this stage of the Scheme design, an appropriate solution has not been identified. It is anticipated that there would be an overall improvement to the corridors for cyclists. The Scheme would also result in fewer emissions generating buses (thereby improvements to local air quality). The significant improvements to cycle conditions and routes are expected to increase physical fitness levels from cycling.

Scheme: Next Best Alternative

Activity Duration per day	Change in Number of People	
	Pedestrians	Cyclists
Less than 30 minutes	Neutral	Slight increase
Greater than 30 minutes	Neutral	Slight increase

Summary assessment score:

N/A, qualitative score only.

Qualitative comments:

The Next Best Alternative includes provision of new hybrid buses. Furthermore, dedicated bus lanes would be provided along sections of the route and increased level of priority at signal junctions. These measures would enhance the services in terms of improved mode quality, reduced congestion and a minor reduction in travel time. However, the Scheme is not aspirational in design and there is no perception of improved performance so it is anticipated that this Scheme would encourage a greater modal shift from private vehicle to public transport than the Lower Cost Alternative, but considerably less than the Preferred Scheme. This lack of modal shift reflects the lack of expected change in physical fitness due to this Scheme.

The Park and Ride facilities at both Bodington Park and Stourton are expected to be 25% smaller than proposed for the Preferred Route, and a third larger than the Lower Cost Alternative. The provision of cycle racks is expected to be relative to this figure. This could work either for or against encouraging physical fitness through cycling.

The Scheme offers provision for segregated cycle facilities along the segregated route lanes and enhancement of existing facilities and connections would also be undertaken. This is less than for the Preferred Route but more than the Lower Cost Alternative. There are adverse impacts on the existing cycle route along the North Line, and at this stage of the Scheme design, an appropriate solution has not been identified. It is expected that physical fitness through cycling would increase as a result of the improved cycle routes.

Scheme: Lower Cost Alternative

Activity Duration per day	Change in Number of People	
	Pedestrians	Cyclists
Less than 30 minutes	Neutral	Neutral
Greater than 30 minutes	Neutral	Neutral

Summary assessment score:

N/A, qualitative score only.

Qualitative comments:

The Lower Cost Alternative is for operation of a diesel bus and improvements to existing bus lanes. The Lower Cost Alternative involves less bus lane provision than the Next Best Alternative. The vehicle improvements are considered minimal, the Scheme is not aspirational in design and there is no perception of improved performance. It is not anticipated that the Lower Cost Alternative would encourage considerable modal shift from private vehicle use to public transport. This lack of modal shift reflects the lack of expected change in physical fitness resulting from the Lower Cost Alternative.

There is also the risk that during the construction stage of improvements, inconvenience caused may shift existing bus users from public transport to private vehicles who may not be encouraged to shift back to public transport. This may result in a short-term or permanent modal shift and reduced physical activity due to reduced transfer time (i.e. between the starting point and the transit stop or the stop and destination).

The Park and Ride facilities at both Bodington Park and Stourton for the Lower Cost Alternative are expected to be half the size compared to the Preferred Route and a third smaller than the Next Best Alternative. Provision of cycle racks is also expected to be less. This could work either for or against encouraging physical fitness.

The Lower Cost Alternative does not provide any enhancement of cycle routes along this route.

WebTag Physical Fitness Worksheet Supplementary Information

<p>Assumptions in undertaking this assessment</p>	<ul style="list-style-type: none"> • In undertaking the qualitative assessment for the physical fitness worksheet one worksheet was completed for each option – ‘Preferred Scheme’, ‘Next Best Alternative’, ‘Lower Cost Alternative’. • The specific theme assessed is physical fitness as a result of the Scheme option. This takes into account the modal shift, journey to reach the Scheme option and the enhancement of cycle facilities.
<p>Limitations of the Assessment</p>	<ul style="list-style-type: none"> • The assessment is based on desk-top material only, a site visit has not been undertaken to view the route. • Modelling of changes in walking and/or cycling as a result of the Schemes has not been undertaken and therefore a full quantitative assessment for the WebTAG Physical Fitness worksheet cannot be carried out. TAG Unit 3.3.12, Paragraph 1.2.10 states that where the Scheme option is ‘demonstrated to have a relatively insignificant impact on physical activity it will be satisfactory to enter a qualitative indicator in the AST, showing separately the forecast changes in the numbers of cyclists and pedestrians’.
<p>Summary of Assessment</p>	<ul style="list-style-type: none"> • There are greater physical fitness benefits associated with the Preferred Scheme as the high quality aspirational trolleybus and provision of Park and Ride facilities with adequate cycle parking would encourage passengers to travel on this transit mode. • The Preferred Scheme includes provision of segregated cycle lanes which would encourage more cycle journeys. To a lesser extent, the cycleways for the Next Best Alternative would be enhanced. • The Lower Cost Alternative demonstrates the least physical fitness benefits as there would be lesser modal shift and fewer enhancements to the existing cycleway.