

LEICESTER PARK AND RIDE PROJECT

FEASIBILITY REPORT

23rd September 2005

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Purpose of Report

To present the findings of, and recommendations arising from, the feasibility work undertaken during Stage 2 (Feasibility) of the project.

Recommendations

It is recommended that:

- Site 35 and Route 1 (terminating at St Nicholas Circle) are the preferred site and route options to be taken forward to the design stage.
- Outbound bus priority measures as indicated in Table 2.2 and alterations to traffic signal timings at existing junctions be included in the bus route improvement works.
- Stakeholder and public consultation is carried out to identify issues to be considered during the design stage of the project.
- Further assessment work, outlined in Part 6 of this report, be carried out during the design stage.

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PART 1: Background

- 1.1 In a report published in May 2002, MVA Consultants identified 29 possible park and ride sites located within 4 km of the M1/M69 motorway junction. The report also set out the conclusions following a 4-stage assessment, which considered location, land cost, site development cost, traffic impact, environmental issues and planning issues. The report recommended the use of either site(s) 27/29 (Aylestone Meadows) or site 34. Site 35 was discounted at the second stage assessment, on the grounds of a risk of archaeological discovery in proximity to the Fosse Way Roman Road which borders the site, and a perception that the location would be unattractive to motorists coming from the motorway. Site 29 was included as part of the major scheme bid submitted jointly by the County and City Councils in March 2004 that failed to secure government funding. In addition a City Council local plan inquiry report failed to support proposals at Aylestone.
- 1.2 Following reassessment of this MVA report we have concluded that the merits of both sites 34 and 35 should be investigated as part of our feasibility study. For site locations refer to fig. 1.
- 1.3 Based on the decision to investigate these sites, 3 bus routes were approved for investigation by the Project Board. The routes, shown on fig. 1 are:
 - Route 1 Lubbesthorpe Way and A47
 - Route 2 Narborough Road and Upperton Road
 - Route 3 Narborough Road and A47

PART 2: Summary of Recommendation

The following tables summarise the findings of the site and bus route option analysis.

Table 2.1: Summary of sites evaluation

Criteria	Para. No. for detail	Preferred Site	Comment
Land Acquisition	3.1 to 3.3	Site 35	Site 34 will require compulsory purchase and likely public inquiry. Site 35 is owned by City Council.
Planning	3.4 and 3.5	No preference	Both site proposals are located in Green Wedge (designated in Blaby Local Plan) and seen as departures to the Local Plan and Structure Plan that may result in requirement for a public inquiry.
Environmental Impact	3.6 and 3.7	Site 34	Site 34 preferable for landscape impact. No other differences in environmental impact, including archaeological survey, identified between sites at this stage.
Site Capacity	3.9 to 3.11	Site 35	1000 spaces can be provided at both sites. No expansion capability at Site 34 due to River Soar flood plain and Police HQ exclusion zone. Expansion capability of 10-15% at Site 35 .
Land Drainage	3.12	Site 35	Sustainable drainage system can be provided for Site 35 but not for Site 34 .
Estimated Site Construction Cost	3.14	Site 35	Site 34 £3.3m Site 35 £2.9m. Additional cost of site 34 due to floodplain related earthworks.
Linkage to Bus Route Proposals	3.20 to 3.22	Site 35	Provides best access to Route 1.

Table 2.2: Summary routes evaluation

Criteria	Para. No. for detail	Preferred Route	Comment
Journey time to city centre	4.1	Route 1	In am peak hour, route 1a journey time is 14 minutes, route 2a is 33 minutes.
Maximum number of buses required	4.2	Route1	To provide a 10 minute frequency, route 1 will require 4 buses, route 2 will require 6 buses.
Destinations served	4.3	Route 1	Both provide links to St. Nicholas circle terminal. Route 1 also provides link to Grove Park.
Identified bus priority improvements	4.8 and 4.9	Route 1	Route 1 2 lengths of outbound bus priority identified (estimated cost £340k) Route 2 No acceptable bus priority proposals identified.

Analysis of route 3 was discontinued as it replicates elements of routes 1 and 2 without providing any additional benefit.

PART 3: Detailed Site Feasibility

Land Acquisition

Site 34

- 3.1 Initial negotiations with Everards, the owners of site 34, have identified strong resistance to the purchase of this land by agreement. Acquisition of site 34 would almost certainly require a Compulsory Purchase Order (CPO) and subsequent public inquiry. A protracted CPO public inquiry process may incur delay to the project programme and financial costs beyond the purchase of the land itself. Whilst legal advice indicates that Leicestershire County Council does have the power to purchase the land by CPO, for park and ride, (under the Road Traffic Regulation Act 1984), a positive outcome of the inquiry could not be guaranteed.

Site 35

- 3.2 Site 35 is owned by Leicester City Council. It was originally acquired by the City Council, in 1972, for use as a cemetery and crematorium in the longer term. In 2004 the City Council Cabinet resolved to market the site for crematorium usage, if and when planning consent for this use was granted. The City Council would need to resolve to use the land for a park and ride car park.
- 3.3 The possibility of acquiring a plot of land to the west of Site 35, possibly by means of a land-swap arrangement, which would result in much of the car parking being located further from residential properties on Narborough Road South, has been investigated during the feasibility study. See figure 2. Land swap negotiations will continue into the design stage of the project.

Planning

- 3.4 Both Sites 34 and 35 are designated as part of the Sence and Soar Green Wedge within the Blaby Local Plan. This designation is unlikely to change as part of the preparation of the Local Development Framework for Blaby; a document which will ultimately replace the Local Plan. PPG 13 and the County's Structure Plan allow development of Park and Ride within the green wedge, subject to certain conditions, and that so far as possible the scheme must preserve the openness and visual amenity of the green wedge. As such, it is accepted by planning officers at the County Council and Blaby District Council that a planning application will represent a departure from the Blaby Local Plan and the County's Structure Plan and therefore will be referred to the Secretary of State. Based on the extent of local opposition, the Secretary of State may decide to call in the application and instigate a public inquiry.
- 3.5 It is the opinion of officers that the County Council will be the determining authority for the planning application.

Environmental Impact

- 3.6 An initial landscape impact assessment has concluded that Site 34 is preferable in having a reduced impact upon the surrounding landscape character compared to Site 35. Site 34 is an isolated example of the "Enderby Fields" landscape character, whereas Site 35 forms a component part of a block of such fields, and therefore of greater impact to the landscape if developed.

3.7 Desktop archaeological and ecological studies have indicated no significant risk of detrimental impact in either site, but that further intrusive and non-intrusive study is required before the full impact of development can be ascertained. This is despite the presence of the Fosse Way roman road immediately adjacent to site 35. (See further areas of work below.)

Site Capacity

3.8 Based on the preliminary design work completed to date a 1000 space park and ride facility can be delivered at either site. (Figures 3 and 4)

3.9 Future expansion in parking capacity at site 34 is precluded by the operational flood plain of the River Soar, and by the 8 metre physical exclusion zone on the perimeter of the Police HQ to the south of the site. A 1000 space site at Site 34 also requires substantial ground works to overcome both the flood risk and the level difference between the site and Soar Valley Way. This is reflected in the additional site construction costs for Site 34.

3.10 Site 35 provides the opportunity for up to 10-15% expansion in capacity, space for which has been accommodated in the site layout design.

Land Drainage

3.11 Adequate drainage systems have been identified for both sites. Site 34 precludes the use of Sustainable Drainage Systems (SUDS) due to the proximity to the flood plain and the assumed soil conditions, and relies upon traditional gully, pipe and discharge into the local water course. Additional hydrology and soil testing has been commissioned in order to finalise the proposed drainage systems for both sites. Consultation with the Environment Agency, a statutory consultee in the planning process, has indicated that both drainage systems would be acceptable, but that the implementation of SUDS, possible on site 35, is preferred where possible.

Landscape Design

3.12 Outline landscape designs have been prepared for both sites, in consultation with officers responsible for reviewing landscape impact during the planning process. Perimeter landscaping required for site 35 is comparatively more extensive, largely due to the presence of perimeter screening of site 34 from landscaping planted when Soar Valley Way was constructed. For this reason, proposals for perimeter landscaping are only shown for site 35 (see Figure 4).

3.13 Site interior landscape proposals are consistent for both sites. Illustrative internal landscape proposals for site 35 are shown in Figure 4. Similar proposals for site 34 are included in the project estimate but are not shown in figures.

Estimated Site construction cost

3.14 The estimated cost of construction based on the feasibility and preliminary design work completed to date is:-

Site 34:	£ 3.34 M
Site 35:	£ 2.94 M

- 3.15 This cost includes all civils, earthworks, drainage, landscaping, amenity buildings and site security measures including CCTV. A full cost estimate for all elements of the project is included in Part 5.
- 3.16 Earthworks associated with flood accommodation can be identified as the principle difference between the cost of the two sites.

Site Access and Layout Arrangements

- 3.17 Consultants MVA have been commissioned to conduct detailed computer traffic modelling work carried out by Halcrows to confirm estimated patronage levels, catchment areas and traffic generation, associated with the two sites. The outcome of this work will be available in mid December 2005. Preliminary design work has been based on assumptions made of traffic generation, informed by data available from the Meynells Gorse service, in order to assess the feasibility of various access arrangements to the two sites.

Site 34

- 3.18 Use of site 34 (fig. 3) requires the construction of an additional arm onto the existing signal controlled junction of Grove Way/Soar Valley Way, and a priority "left in-left out" junction on Narborough Road South. The total cost for these elements, excluding any costs associated with the diversion or protection of statutory undertaker's plant, is approximately £420K.

Site 35

- 3.19 Use of site 35 (fig. 4) requires the construction of a new signal controlled junction permitting all movements into and out of the site on Narborough Road South and a new signal controlled junction at the junction of Leicester Lane and Smith Way. The total cost for these elements, excluding any costs associated with the diversion or protection of statutory undertaker's plant, is approximately £500K. This arrangement assumes that the buses leaving and returning to the site do so via Smith Way and Penman Way.
- 3.20 Alternative access arrangements that segregate buses from general traffic but do not make use of this Grove Park route were investigated.

Park and Ride Bus Service:

- 3.21 Public Transport officers have been involved from the outset in the preliminary access and layout design for the sites in order that operational concerns are integrated into the design.
- 3.22 The access arrangement provides the best link to bus route 1 (see below), as the bus service could use Smith Way and Penman Way through Grove Park, to join Lubbethorpe Way (outer ring road) northbound, avoiding both the Everards and ASDA signal controlled junctions.

Materials Selection and Engineering Design Assumptions

- 3.23 Conventional non-porous asphalt is recommended for areas accommodating vehicles. This material provides excellent value for money, both to install and maintain. Alternatives, including an unbound material, porous asphalt and permeable block paving, were considered and rejected on the grounds of either higher installation cost or increased maintenance requirements. Permeable

surfaces require regular maintenance jetting (every 2 to 5 years) to remove silt, and also require renewal more frequently than conventional asphalt.

3.24 Conventional asphalt, together with blockwork around amenity buildings and central bus facilities, is recommended for pedestrian areas. By selectively using block paving for central “feature” areas near amenities, with standard asphalt on pedestrian routes around the site, a balance of good aesthetic value and ease of maintenance can be struck for pedestrian areas. The use of blockwork throughout the site is not recommended, as this increases both initial installation and future maintenance costs.

3.25 A central amenity structure is proposed which includes security, toilet and baby changing facilities with a bus shelter. It is intended that this building be designed as a central feature of the site, combining value for money with eye catching design.

3.26 Site design includes:

- 950 spaces for general traffic.
- 45 disabled badge-holder parking (allocated according to Department for Transport/ODPM advice on provision for access).
- Cycle lockers.
- Motorcycle parking
 - exact provision for cyclists/motorcyclists to be confirmed through consultation.*
- CCTV coverage to be viewed by on-site security staff and police HQ.
- Perimeter fencing with lockable gates on all vehicle and pedestrian access points.

PART 4: Route Feasibility

Route Analysis

Journey Times

4.1 Journey times recorded for the three defined routes are shown below.

Route number	AM			PM		
	In	Out	Round trip total	In	Out	Round trip total
1	14	14	28	16	14	30
2	20	23	43	28	37	65
3	18	19	37	18	22	40

minutes

Vehicle Requirement

- 4.2 The recorded journey times assume that the terminal for this service is at St Nicholas Circle or at St Nicholas Place. Based on return journey times in the peak periods and the time required for passengers to board and alight, it is possible to establish the number of vehicles required to provide a 10 minute service. Based on the feasibility work completed to date, Route 1 will require 4 vehicles compared to 5 and 6 vehicles for routes 3 and 2 respectively.
- 4.3 Based on the Journey time and the number of vehicles required to provide a 10 minute service, Route 1 is the recommended route.

City Centre Routes

- 4.4 Investigation into the routing of the service within the City has established the need to determine whether it is viable to provide stops at additional locations. Such locations include, The Leicester Royal Infirmary, De Montfort University, The Railway Station, The City Commercial Quarter, Charles Street and a stop located within the new bus hub adjacent to the Shires extension. Any increase in the journey time in order to serve additional stops within the City will increase the required number of buses and therefore the cost of providing the service. It is recommended that the likely increase in passenger numbers using the service as a result of providing stops at these additional locations is investigated before a decision on this route extension is taken. Further analysis of these issues will include liaising with the Royal Infirmary regarding the Pathway Project to identify the possible scope for addressing their transport related issues and possible involvement in the park and ride service.
- 4.5 The possibility of increasing the route in the City does not affect the recommendation of route 1.

St Nicholas Circle Terminal

- 4.6 A terminal location at either St Nicholas Circle or St Nicholas Place will require the reallocation of a proportion of the City Council owned car park resulting in the loss of approximately 20 spaces from an existing total of 79 spaces.

Current occupancy levels of the car park are being investigated. The cost of accommodating archaeological issues could be significant in this location and will require investigation when an outline design of the terminal arrangements is prepared.

Grove Park

- 4.7 A further advantage of Route 1 is the possibility of providing a dedicated stop within Grove Park. This has been discussed with Grove Park management who viewed this proposal as beneficial to the site and would assist in alleviating the existing on-street parking problems. Such a service would create a contra-flow revenue stream. Surveys through Grove Park indicate that the journey time is similar to using Narborough Road South and Soar Valley Way.

Controlling misuse of the Car Parks

- 4.8 It is recognised that the locations of both sites may result in the use of the car park by those not using the park and ride service. During peak shopping periods demand for parking at Fosse Park exceeds capacity, a situation that could result in the misuse of site 34. Similarly, demand for parking within the Grove Park complex is exceeded, a situation that could result in the misuse of site 35. Methods for addressing this issue will be developed during the design stage.

Bus Priority Measures

- 4.9 An assessment of further bus priority measures to be implemented as part of the scheme, along Routes 1 and 2, has identified several measures. These are summarised in Tables 2.2 and 2.3. The locations of those recommended for implementation are shown on fig. 1.

Table 2.2: Bus Priority Measures on Route 1

Location	Length	Impact	Cost	Action
Amendments to police HQ junction	-		£80k	Not recommended if Grove Park route used.
Narborough Rd South. Site access to Lubbesthorpe Way	400m	Within highway boundary, loss of verge and relocation of footway.	£160k	Not recommended if Grove Park route used.
Lubbesthorpe Way. Approach to Meridian Rd	200m	Loss of general traffic lane.	£60k	Not recommended due to loss of lane
Hinckley Rd. Wyngate Drive to King Richard's Rd.	150m (inbound)	Loss of on-street parking, adjacent to businesses	£90k	Not recommended as part of this project
Hinckley Rd. Oswin Rd to Railway bridge.	250m (outbound)	Within highway boundary, loss of 3 small trees and verge	£120k	Recommended
Hinckley Rd. Railway bridge to King Richard's Rd.	340m (outbound)	Within highway boundary, loss of 9 small trees and verge	£230k	Recommended
TOTAL			£740k	

Table 2.3: Bus Priority Measures on Route 2

Location	Length	Impact	Cost	Action
Amendments to police HQ junctionj	-		£80k	Recommended
Narborough Road South Police HQ junction to Everards R/B	150m	Amendments to central reserve	£10k	Recommended
Narborough Road South Everards R/B to ASDA R/B	150m	Loss of general traffic lane	£80k	Not recommended due to loss of lane
Amendments to Everards R/B	-	Within highway boundary, loss of verge	£85k	Recommended
Narborough Rd Fullhurst Rd to Imperial Ave	200m (inbound)	Loss of general traffic lane	£20k	Not recommended due to loss of lane
Narborough Rd Imperial Ave to Upperton Rd	260m (inbound)	Loss of general traffic lane	£20k	Not recommended due to loss of lane
Narborough Rd Fullhurst Rd to Imperial Ave	200m (outbound)	Loss of general traffic lane	£20k	Not recommended due to loss of lane
Havelock St to Walnut St	150m (outbound)	Within highway boundary, loss of on-street parking	£15k	Not recommended due to loss of parking
TOTAL			£330k	

Costs of Route Improvements

4.10 The above costs do not include costs associated with the diversion or protection of statutory undertaker's plant and are at this stage only approximate. Further

design work would be required to establish more accurate costing. No cost is assumed for the construction of a terminal at St Nicholas Circle/Place.

PART 5: Project Costs and Delivery

Estimated Cost

- 5.1 The estimated outturn cost following the completion at this stage is £9.2m.
- 5.2 This assumes:
- a. Site 35
 - b. Route 1 running through Grove Park and terminating at St Nicholas Circle
 - c. 2 lengths of outbound bus route on the A47 and signal improvements at junctions along the route.
- 5.3 The summary of costs, at today's prices, and based on the completed feasibility and preliminary design work is:

Site;		
<i>civils</i>	£1.50m	
<i>landscaping</i>	£1.40m	(includes planting, fencing, CCTV and amenity building)
Site Access	£0.50m	
Underground services	£0.75m	
Route;		
<i>bus priority</i>	£0.35m	
<i>traffic signals</i>	£0.50m	
Design fees	£1.40m	
Contingency	£1.00m	
Total	£7.40m	

Project Programme

- 5.4 Based on the recommendations included in this report, the anticipated key dates for the project delivery are:-

Event	Date
Submission of preferred scheme to Cabinets	March 2006
Submission of Planning Application	Autumn 2006
Possible Planning Public Inquiry	Winter 2008
Planning Permission	Summer 2009
Site Opens	Summer 2010

PART 6: Areas of further assessment work to be taken to the preliminary design stage.

- 6.1 Archaeological geo-physical survey and trial trenching on site 35. This will establish the risk and associated cost of archaeological remains being found with greater certainty and identify the requirement for a full archaeological excavation prior to the submission of a Planning Application. This work would cost in the region of £5,000 to £10,000 per site.
- 6.2 Soil survey work including hydrology for Site 35 to confirm the assumptions made on ground conditions during feasibility study drainage design.
- 6.3 Further consultation with the owner of the land adjacent to Site 35 to pursue a possible land-swap arrangement involving part of Site 35.
- 6.4 Review of route proposals, site traffic generation and access arrangements following completion of traffic model.
- 6.5 Establishment of patronage levels of Grove Park route sub-option.
- 6.6 Establishment of likely patronage levels generated at the Leicester Royal Infirmary, De Montfort University, Railway Station and the Commercial Quarter of the City in order to justify an extension to route 1 that would serve additional destinations.
- 6.7 Completion of preliminary design for terminal arrangements at St Nicholas Circle/Place and the assessment of archaeological impact.
- 6.8 Investigation into possible measures that will address the issue of misuse of site 35 resulting from insufficient parking provision on the Grove Park complex.