

The Co-operative Group
Response

Draft Planning Policy
Statement: Eco-towns

Document 12

Eco-town for Leicestershire Smarter Choices Company

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(From a Report prepared for The Co-operative Group by MRC Hazel
McLean)

an **ECO-TOWN**
for **LEICESTERSHIRE**

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1 Executive Summary

The Co-operative Group (the promoter) has put forward an innovative transport solution as part of their proposals for an Eco-town for Leicestershire. The promoter proposes to establish a Smarter Choices Company (SCC) as part of these proposals. This will be ground-breaking and innovative with the primary aim of assisting people to optimise their use of public transport, walking and cycling: a vital and central element of the proposed eco-town.

The proposed Eco-town for Leicestershire is on the edge of the Leicester conurbation, and thus able to be connected to the existing Leicester transport network, by means of fast buses or trams, as well as by cycle and walking. The proposals include a rapid transit route into the city centre as well as links to other nearby district centres and employment centres, a community bus, and further cycle and walking exemplary infrastructure. The strategy also includes a park and ride site and a high quality transport interchange. Further details are set out in the Eco-town for Leicestershire Transport Assessment (October 2008).

Encouraging people to use their cars less and to travel by public transport, walking and cycling is a key challenge for the promoter in the delivery of the proposed transport solution, which aims to achieve a modal split of 55% public transport, 20% walk and cycle and 25% private car for journeys out of the town. It is recognised by the promoter that new infrastructure on its own may not deliver the optimum shift from car use to public transport use and that innovations are required to encourage this shift.

The promoter has commissioned MRC McLean Hazel, who has extensive experience of modal shift measures and new organisational models within which to achieve this change to provide an outline business plan for the SCC in order to provide a realistic estimate of what the SCC can achieve and what it will cost. The business plan produced by MRC McLean Hazel is summarised in this document with the exception of the financial details, which are commercially sensitive.

The SCC will have a large and complex range of products and services. These include travel plan creation, liaison with public transport operators, management of interchanges and parking, design and implementation of ticketing mechanisms, improving the cycling and walking offer and reducing the impact of essential car travel. Most of these services need to be in place early, and remain very visible and respected, at least throughout the development period. Some services can be developed over time. The organisational structure proposed focuses upon performance management of mobility and its funding will reflect this role. If a high intensity SCC is committed to now, it will be able to achieve improvements in the expected levels of modal shift as well as in the transport customer experience.

The SCC will be run as a community mutual organisation and its customers and staff will be able to have a say in its operation. It will be manage 5 priority areas: policy and performance, quality management, financial services, travel advice and promotion and

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tram development. Key skills required in its employees will be relationship building and community involvement; performance and contract management; policy, travel advice and transport planning; marketing and finance and accounting. The SCC must be relevant to the various eco-town communities and must be able to be scrutinised as it will have a degree of regulatory and enforcement powers and will be responsible for some allocations of funds. It needs considerable capacity and capability to manage complex contracts as well as being sensitive to customers' needs. It needs to be able to grow as the town develops. It must be accountable to the Eco Town Community Company, but also have an objective of becoming self financing over time.

2 Introduction

The Co-operative Group (the promoter) have put forward an innovative transport solution as part of their proposals for an Eco-town for Leicestershire. The promoter proposes to establish a Smarter Choices Company (SCC) as part of these proposals, in order to assist in meeting this challenge. This will be ground-breaking and innovative, with the primary aim of assisting people to optimise their use of public transport, walking and cycling.

The promoter has commissioned MRC McLean Hazel, who has extensive experience of modal shift measures and new organisational models within which to achieve this change, to provide an outline business plan for the SCC in order to provide a realistic estimate of what the SCC can achieve and what it will cost. The key elements of the Smarter Choices Transport Company are set out in this report to give a clearer picture of how it will operate. The financial elements of the plan have not been included, as these are commercially sensitive at this stage.

The report is organised into 6 sections: context; the Smarter Choices Company vision and objectives; products and services; governance; organisational structure; and parking management,

The three key premises of the report relate to performance, openness and complete mobility.

Performance:

This report focuses on how the SCC might be organised as well as an analysis of the effectiveness of the various activities it could undertake. The SCC described here is based on the premise that it will be expected to achieve specified modal shift targets, and its performance will be assessed. Therefore measurement of performance indicators will be a vital requirement, and the SCC offers a groundbreaking framework to ensure ongoing performance management of required modal shift and other indicators;

2. Openness: This report follows the recommendations for community governance set out in the Eco-town for Leicestershire Vision Document. This means that the SCC must operate on a co-operative model, providing its members with an opportunity to influence its operations. It must also be transparent in its operation and accounts, and its recommended form and structure takes this into account.

3. Complete mobility: Although the SCC will be held responsible for achieving some modal shift targets, it will also be responsible for ensuring that the activities it undertakes present a co-ordinated and valued offer to the eco-town communities. It will be important that the SCC is not seen as an abstract and distant regulator, but as an easily accessible and responsive organisation that is actively helping the community with any travel issues.

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By way of background, the eco-town is on the edge of the Leicester conurbation, and thus able to be connected to the existing Leicester transport network by means of fast buses or trams, as well as by cycle and walking. The proposals include a rapid transit route into the city centre as well as links to other nearby district centres and employment centres, a community bus, and further cycle and walking exemplary infrastructure. The strategy also includes a park and ride site and a high quality transport interchange. Further details are set out in the Eco-town for Leicestershire Transport Assessment (October 2008).

Detailed land use plans have not yet been drawn up but the developing plans show a compact development area surrounded by green space, with main traffic accesses to the main A47 and A6, and with dedicated bus, cycle and walk ways into the city. Importantly, parking is planned to be at about 0.5 spaces per dwelling, with employment parking at city centre levels, both acting as major restraints on car use.

A transport modelling exercise was undertaken jointly by Leicestershire County Council, Leicester City Council, the Highways Agency and the promoter to assess the feasibility of the proposals. The results demonstrated that the proposed transport solution was viable, having only a minimal impact on the transport network.

Encouraging people to use their cars less and to travel by public transport, walking and cycling is a key challenge for the promoter in the delivery of the proposed transport solution, which aims to achieve a modal split of 55% public transport, 20% walk and cycle and 25% private car for journeys out of the town. It is recognised by the promoter that new infrastructure on its own may not deliver the optimum shift from car use to public transport use and that new innovations are required to encourage this shift.

3 Context

This section sets the Eco-town for Leicestershire within local, national and global contexts, summarises the various forces and people influencing the eco town. It also includes some comments about the effectiveness of modal shift measures and suggests a vision and objectives for the SCC. It concludes with a list of potential Key Success Factors.

Global Issues and Trends

Environmental issues are an ever increasing concern on global agendas. The importance of issues such as carbon or greenhouse gas emissions, pollution and sustainability are clearly evident and has impacted, and will continue to have a bearing, on the policies surrounding eco-towns.

There are eight Millennium Development Goals (MDGs). The MDGs include aims, such as reducing the number of people suffering from hunger and eliminating gender disparity in primary and secondary education. There is also a goal to ensure environmental sustainability of which one target is to “integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources”. Sustainable development is clearly a goal which is likely to have different relevance in developed and less developed countries. This goal, however, is of no less importance in either type of country. In more developed countries, such as the UK, sustainability in the urban environment is a primary issue. The European Union set out four goals in “Sustainable Urban Development in the EU”. The third was to improve the urban environment – a task which included the management of transport, waste and energy. Eco-towns are a significant means by which the UK can play its part in ensuring improvement and sustainability in the urban environment.

There are also practical implementations of international urban developments from which confidence may be gained and lessons learnt. Although most of the following examples do not have the exactly the same aims or purposes as the UK’s eco-towns, they can still demonstrate what can be achieved. International examples include Augustenborg (Malmo), Freiburg (Baden-Württemberg), Groningen (the Netherlands), Nieuw Terbregge (Rotterdam) and Hammarby Sjostad (Stockholm). Each of these developments has implemented a mix of measures and initiatives to create a more sustainable transport system. In addition there are developments such as GWL-Terrein (Amsterdam) which are car-free; the core of the development is dedicated to open space with cars restricted to the periphery only. Many of these areas have achieved very good mode-share figures for public transport, walking and cycling and provide good examples of what can be achieved.

The US Government is promoting the idea of ‘Transit Oriented Developments’ (TODs) as potential areas for mixed income housing and employment development where transportation costs can be minimised. This has recently received more emphasis with rising oil prices, the impact of the credit crunch and the realisation that the suburban

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form is very car dependent. Suburban America is hardest hit by the current economic problems, while some TODs are thriving (Realising the Potential: Expanding Housing Opportunities Near Transit, Center for Transit-Oriented Development, April 2007).

Given the large increases in fuel prices, widespread public environmental concerns, and ongoing work to develop a post-Kyoto agreement, there is a powerful momentum behind sustainable urban mobility.

National Policies

The development of eco-town proposals has been influenced and guided by a number of governmental and national policies.

The UK Government has recognised the need for more homes to meet the rising demands of an increasing and ageing population. It has set a target to provide three million more homes in England by 2020. Ensuring that this growth is sustainable is a primary concern. The UK government set out its sustainable development strategy in the report “Securing the Future” (March 2005). One of the four agreed priorities within the document was the creation of sustainable communities. This built on the earlier 2003 “Sustainable Communities Plan”. Sustainable communities were defined as *“places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all.”*

“Homes for the Future: More Affordable, More Sustainable” (July 2007) developed these proposals further and launched the invitation for local authorities and developers to propose new eco-town schemes with the primary aim of an entire zero carbon community. Following on from this the Communities and Local Government (CLG) Government department were responsible for the creation of an “Eco-Towns Prospectus” which outlined the features of and criteria for eco-towns. A primary concern within these criteria is in ensuring that each eco-town becomes an “exemplar green development”. This clearly creates a key role for transport within eco-town development. As such the ‘Department for Transport’ (DfT) have been strongly involved in providing guidance for both eco-towns and growth points more generally.

“Building Sustainable Transport into New Developments: A Menu of Options for Growth Points and Eco-Towns” sets out specific recommendations for transport strategies including:

1. promotion of cycling and walking;
2. reduction of car usage;
3. provision of access to public transport; and
4. consideration of the needs for goods and emergency vehicles.

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This fits within other DfT aims and work promoting initiatives such as ‘Sustainable Travel Demonstration Towns’ and ‘Smarter Choices’. More recently the DfT produced “Towards a Sustainable Transport System”, a report which described the Government’s responses to the Eddington Report and the Stern Review. Eddington highlighted the importance of transport to economic growth and productivity whilst Stern demonstrated the importance of reducing CO₂ emissions for both social and economic reasons. The Government accepts both the importance of congestion management and the threats of climate change. Both factors are clear influences in eco-town policies.

Local Policies

At the local level there are more specific concepts and policies which have a role to play in The Eco-town for Leicestershire’s policies.

Leicestershire’s Local Transport Plan (LTP) for 2006-2011 sets out six primary challenges and objectives:

1. Tackling congestion
2. Improving access to facilities
3. Reducing the number and severity of road accident casualties
4. Providing better air quality
5. Reducing the impact of traffic
6. Maintaining all our transport assets in good condition.

The eco-town must clearly follow this set of objectives. The Leicestershire 2006-2011 LTP only suggests a 1% decrease in car mode share and a 1% increase in public transport mode share. The Leicestershire LTP does include a reasonable, although perhaps not excellent, package of measures to tackle congestion.

The 6Cs Congestion Management Study was led by a partnership of three city councils and three county councils from the East Midlands - Leicestershire County Council, Derby City Council, Derbyshire County Council, Leicester City Council, Nottingham City Council and Nottinghamshire County Council. The study identified high congestion levels on radial routes running into and out of Leicester and on its ring road during peak periods. The total vehicle delays and consequent costs were found to be highest in Central Leicestershire and Greater Nottingham.

The Eco-town for Leicestershire

The Eco-town for Leicestershire is setting itself challenging and ambitious targets, yet ones which are both in line with global and individual trends, as well as being capable of becoming a national and international exemplar.

The promoter has recognised the importance of considering the external impacts of the eco-town - clearly transport capacity will need to increase as the population of The eco-town increases. Further to this, however, the Co-operative Group’s Consultation Paper - “Transport: Making Better Choices” - explains how they hope to create wider positive

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impacts; they aim to “*manage the transport demand we create but also look to play our part in delivering better transport around Leicester and in the region*” by becoming a “*catalyst for a new approach to transport provision in the area*”.

The site has an aim of a maximum of 25% of journeys to be made by private car in accordance with the guidance for eco-towns in the Town and Country Planning Association’s (TCPA) “Transport Worksheet”. Putting this in context: at the 2001 census, for all of Leicester’s commuting trips, 71% of people travel to work by car or van (65% driving and 6% as passengers) and only 17% of journeys were made by more sustainable travel modes (9% walking, 5% bus, minibus or coach and 3% cycling). The proposed modal shares are public transport 55%, cycling 20%, car 25%.

Effectiveness of smarter choices

There is currently some debate about the value of smarter choices in managing demand for car travel by use of methods such as incentives, travel plans, marketing and awareness raising techniques, as opposed to the easily quantifiable benefits of providing physical infrastructure: there is no doubt that research in this area needs to be extended and improved. A research project was undertaken for the Department for Transport in 2004 (‘Smarter Choices: changing the way we travel’, Cairns, Goodwin, Sloman, Newson, Kirkbride) which summarised evidence on the impacts of smarter choices and concluded that a high intensity smarter choices programme would:

- Cost in the region of £5 per citizen per year
- Have a benefit to cost ratio of 10:1 or more
- Result in a reduction in traffic of 21% in urban areas in peak times

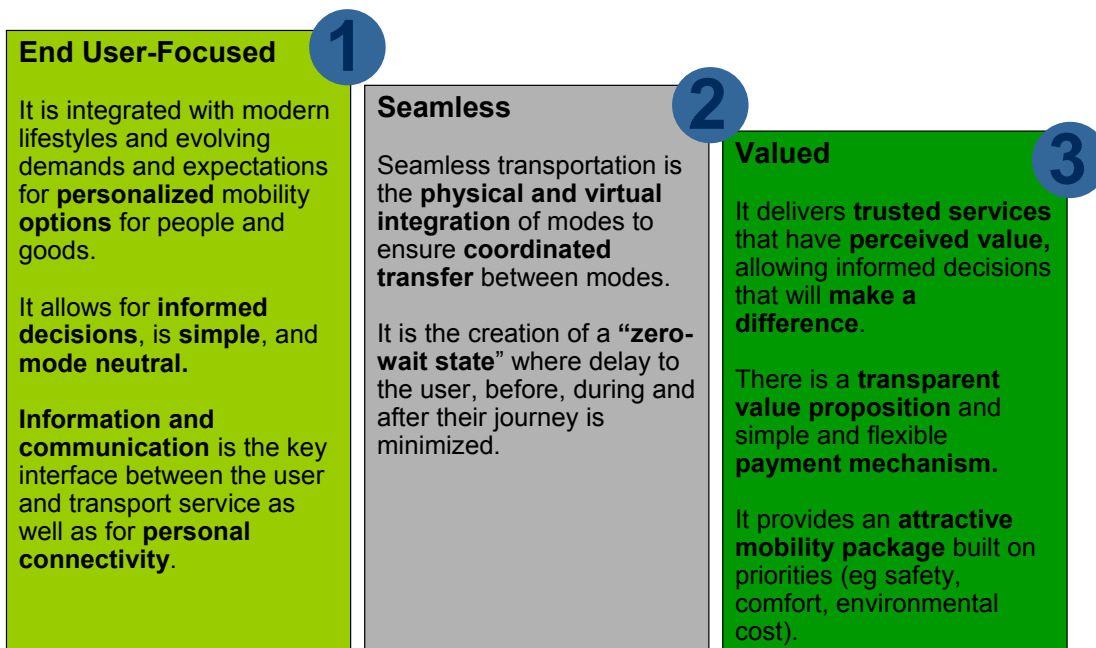
These results have all since been challenged, but it is fair to say that research on smarter choices is definitely demonstrating that packages of measures are effective, but that the individual contribution of demand management is difficult to disentangle from that related to the provision of infrastructure, new public transport services or car restraint measures.

Some selected statistics on mode shift achieved by smarter choices are included in Appendix 1. These show that impacts can be very significant with the The eco-town SCC providing the perfect vehicle to realise the optimum synergy between these measures.

4 Smarter Choices Company – Vision and objectives

The Smarter Choices Company will be an integrated travel company that residents and those working in the town can associate with and own. Its services and products will be designed specifically to a modal shift away from car use by working towards ‘complete mobility’ – this is an customer focussed, easy to use, high quality seamless and valued transport system. It will do this by building on existing best practice examples of smarter choices work. It will managing the infrastructure to be provided for public transport, cycling and walking, car movement and parking, and interchange and introduce individualised ways of managing travel, such as personalised travel plans and smart cards pre-loaded with incentives to encourage people to behave sustainably..

Diagram 3: Elements of complete mobility



The SCC will also manage quality. It will establish quality standards for services matching the best in Europe. Key elements will be:

- frequency
- punctuality
- cleanliness
- public transport stop infrastructure
- information
- vehicle comfort
- emissions.

Table 1 sets out the promoter's vision for the Smarter Choices Company.

Smarter Choices Company Vision

The SCC is a vital and central element of the eco town.

The SCC will be a responsive, performance oriented, accessible delivery vehicle.

The SCC will provide a 'high intensity' smarter choices regime – more services and co-ordinated combinations of services, to an extent that has not yet been achieved in a new development.

It will be the natural place for new residents, workers, developers and other stakeholders to manage their mobility, whether they want to buy bus tickets, rent a parking space or a bicycle, start a walking bus for school children, complain about trains to London or influence transport policy in Central Leicestershire.

The SCC will work from Day 1 of construction: it will provide as important a service to potential occupiers visiting show homes and commercial estate agents as information about the house or unit itself.

It will have a physical presence in the centre of things (the hub) and will have a dynamic and interactive presence on the web.

The SCC will be easily recognised: all travel initiatives undertaken by the SCC will have a common brand, so that occupiers and residents will understand the benefits it has to offer.

The SCC will be a co-operative run as part of the eco town community governance and will be seen as a community resource. It will be 'owned' by the community.

The SCC will be a national and international exemplar, building and extending best practice in Smarter Choices. It will attract national and international interest and funding and will exploit this to the benefits of the local community and stakeholder.

The SCC will have a costed delivery plan and aim to be financially sustainable.

Smarter Choices Company Vision Objectives

The objectives fall into four groups that must be balanced by the SCC:

- To actively provide better quality transport services for eco town residents, employers and employees than elsewhere
- To meet requirements for modal shift from car to public transport, walking and cycling

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- To work with partners, other agencies, community organisations and others to promote innovation
- To publicise the eco-town's successes

Smarter Choices Company Key Characteristics

The SCC will have the following characteristics in order to optimise its success at facilitating a modal shift away from car use.

- The SCC will be located at the transport hub and at show homes and estate agents to catch people and give them personalised or company travel plans **before they decide to move in**
- The SCC will have a **substantial physical presence at the transport hub and/or town centre** and make best use of the web, community portals and other distribution methods
- The SCC will be well resourced **from the start** and able to add functions and scale as the eco town develops
- The SCC will be **completely transparent in its operations**, to get the support of residents and other stakeholders
- The SCC will have a **clearly defined relationship with the Eco Town Management Company** and any other governance arrangements in The eco-town, and will have a governance structure which facilitates community and customer (member) involvement
- SCC must be responsive to its members (eco-town residents) and provide opportunities for its members to voice their opinions about transport services
- The promoter is committed to achieving a **clearly defined relationship between the SCC and** local authorities, transport providers, government agencies, developers and customers
- SCC will be set up and promoted as a **user focussed** facility to help save people time and give them full range of choices: it will not be seen as a watchdog to force them to change their ways.

5 Products and services

The SCC will have a large and complex range of products and services and these are summarised in this section. Appendix 1 summarises evidence of their effectiveness to date in achieving modal shift. Some elements, for example parking hubs and park and ride, represent significant operational challenges; others, such as travel plans and cycle promotion, will need careful attention to customers' needs; and yet more will require an appreciation of the wider picture – these include marketing, developing policy and managing performance. The SCC will provide the 'glue' that brings together many of the infrastructure, transport and planning projects in the eco-town. It will act to optimise the benefits from these projects and as a result it will be in a position to improve customer responsiveness.

Travel Plans

The SCC will identify the travel needs of employers, schools, other traffic generators and individuals, in order to encourage them to consider using alternatives to the car and this will be worked up into a travel plan. Travel plans advice and support will be a core activity throughout and after the build period. It will include:

- advising on and undertaking travel surveys
- monitoring travel survey results
- assisting with travel plan publicity materials and marketing,
- providing support to travel plan champions,
- providing a range of support services, such as personalised travel plans for each new resident and employee, research and dissemination of best practice, and links with local authorities and bus operators.

Travel plan advisors will use a combination of methods, but will be focussed on providing face to face personal advice and support. It will be important for them to contact and influence new residents and occupiers early, so that decisions about travel options can be made at the same time as decisions about relocation. The travel plan advisors will be able to provide information and incentives on a full range of travel options, and will also feed back to transport operators and policy makers.

Advisors will be based at the SCC centre but will be expected to make themselves available wherever they are needed. They will use available data to tailor make materials for each travel plan, and will commission new surveys when necessary. They will also provide performance information to the Eco Town Board (see Section 6).

Improving the public transport offer

The SCC will liaise with public transport operators and will set policy for commissioning and subsidising bus and later options, which may include a tram. The aim will be to ensure that public transport services are easily accessible, reliable, safe, affordable, comfortable, fast and friendly, and that they serve the places, and cover the times that the eco-town's residents and workers need. The SCC will regularly review services to assess how far they are meeting demand from the eco-town's residents, and will have the ability to commission further services should they be needed. They will also negotiate service improvements with bus operators, linking travel plans with appropriate transport provision, and will add value by promoting integrated ticketing and use of smart cards. Bus monitoring, planning and commissioning will be a core SCC service. This will complement the public transport infrastructure already being planned to create a public transport-friendly climate that will encourage use. The SCC will work with partners to ensure high profile and visible security on public transport to and from the eco-town, and establish and enforce standards of on board behaviour by passengers.

£5m funding will be provided by the promoter, following shortlisting for a sub-regional transport study, to include provision of a city-wide tram solution. From Day 1, of its inception, the SCC will play a key role in this initial study and in further development of a tram proposal if this proves to be the best solution for the wider area. , Phase 1 activities (see section 7 for phasing) will be preparation to approval stage, Phase 2 will consist of detailed design with construction starting with Phase 3.

Managing interchange and parking

An important role for the SCC is the management of facilities including residential and employment car parks, park and ride and the eco town transport hub(s), bus stops, cycle facilities and car clubs. These facilities will be the 'front doors' of the SCC and will be branded and managed according to common guidelines together with the community intranet, so that they will be understood as part of a co-ordinated transport offer. Income from parking will be used to support other elements of the transport strategy with top-up contributions from the proposed service charge – therefore the integration of the various elements will be vital, as will the marketing of the overall transport offer.

Hubs will be more than transport interchanges – they will be 'sustainable travel' centres with tailor-made information, ticket incentives, smart cards, cycle booking and parking arrangements. Each visitor will be able to come away from the hub having received personalised advice and travel information, incentives, timetables, booking forms and any other resource required to manage their travel needs.

The central hub should be in an accessible location in the town centre, which will be the SCC's main location, though there may be the opportunity for satellite hubs in, for example, employment areas. Hubs may also be suitable centres for other activities, and the SCC will be able to consider the possible added value of services such as health, other community ventures, leisure and childcare as possible complementary uses.

Residents will also be able to access the SCC virtually through the community intranet portal in all homes and business premises.

These are large scale core services that will need to start on Day 1, but will be increased and improved over time. In the very long term, the SCC might face the challenge of increasing resources from elsewhere if demand for parking reduces so much that income is also reduced.

Improving co-ordination of smarter choices items

Leicester already has a satellite positioning real time information system (Startrack) that will form the basis of a high quality information system. Further co-ordination measures will include personal carbon measurement and advice; multi application smart cards that can be incentivised to encourage use of non-car modes, often on a personalised basis; working with partners on safety and security on transport; and marketing the whole transport vision for the eco town as well as for the individual elements listed here. The emphasis will be on 'complete mobility' as described in Diagram 3 above, and will be presented as a valuable benefit to eco town users.

Phase 2 items will include negotiation with relevant authorities on the expansion of these and other functions outside the eco town, as well as the consideration of guarantee schemes that will pay compensation to passengers if their journey is delayed.

Improving the cycling offer

The SCC will mainstream cycle initiatives by providing accessible local services to complement large-scale safe cycling infrastructure. This will include information and maps, cycle training for adults and children, a cycle repair service, cycle hire, cycle loans (sometimes tax free), promotional events, guided rides and other incentives for purchase and use of bikes. Links will be made with local and national cycling promotion organisations and the SCC will pilot new initiatives where appropriate. Potential cyclists will be segmented, with marketing and publicity oriented to the likeliest new recruits. Transport for London found that 70% of cyclists 'only cycle occasionally' and these might be a good target for smart interventions. School and employer travel plans will also provide exemplary cycling services, including potentially paying mileage for cycling on business travel. Personal travel plans will include an optional health assessment and fitness programme. The SCC will work with other transport providers to ensure integration or interchange with public transport.

A Paris-style 'velib' scheme (where bikes can be hired from convenient locations, including interchange points, and left at destinations) will be considered as a Phase 2 item.

Improving the walking offer

Walking initiatives will also be developed in partnership with health organisations. The SCC will organise healthy and guided walks to complement the improved crossings,

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footways, rights of way, maintenance, lighting, and road safety. The SCC will also monitor conditions on important walking routes and will report problems to the relevant authority. Personal travel plans will include an optional health assessment and fitness programme, and the SCC will develop packages of incentives that can be used in travel plans – for example, free pedometers, fitness assessments, a public realm maintenance complaint reporting service, guidance on personal safety, personal attack alarms, ‘walk to work’ buddies, school walking buses.

Improving the car offer

The SCC will focus on avoiding unnecessary car travel and on providing more flexibility so that cars can easily be hired or shared (car clubs and car share databases); encouraging lower emission vehicles (managing plug in points and electric vehicle maintenance); increasing efficient delivery of goods (by liaising with retailers and providing drop-off points) and charging a reasonable fee for parking. As part of their travel advice activities, employers and employees will also be able to get information and advice on working from home or flexible hours to enable off-peak travel to work. The SCC will work with travel plan ‘owners’ to provide incentives for not using cars for specific purposes – for example, a personalised smart card could include payment for parking at the workplace 4 days a week with a returned ‘cycle bonus’ on the fifth.

A Paris-style ‘autolib’ scheme (where electric cars can be hired from convenient locations and left at destinations) could also be considered.

6 Parking management and charging strategy

A key element of the sustainable transport plan for the eco-town is the low levels of parking provided. Residential parking will average only one space per two homes and commercial parking standards are on the same basis of Leicester city centre. Control of parking is one of the principal means of achieving an exemplary modal share of only 25% of journeys being by car, against 70% plus in Central Leicestershire.

It is also the intention to charge residents and employers for parking as an integral part of service charges. The service charges will therefore be variable to reward green travel. Service/car parking charges will underwrite high quality public transport for the eco-town including subsidising fares to make public transport a more attractive option. Central to this strategy is a sophisticated and comprehensive multi-functional smartcard.

A comprehensive parking management strategy will be required. This will define a road hierarchy, roads to be adopted as highways, private roads, as well as the organisation with responsibility for each. It will also look at enforcement, spillover parking, unauthorised parking on verges, arrangements for delivery vehicles and people with disabilities, and opportunities for shared spaces. For the purposes of this report, it is assumed that the highway authority, Leicestershire County Council, will be responsible for adopted roads and the SCC will be responsible for unadopted roads.

This section deals mainly with issues around charging for parking. Possible charging mechanisms are assessed in Table 2 below. It is likely that a 'mix and match' solution would be most appropriate.

Table 2: Parking management and charging mechanisms

Possible charging method	Issues and options for eco town
Purchase of off-street spaces outright by residents or employers	SCC could own and/or manage spaces and charge a market price for selling them. First come first served, or basic allocation policy. Low operational cost, but also low demand management potential.
Long-term renting ('season tickets') of off-street spaces or unadopted on-street spaces by residents or employer	Again SCC could own/manage spaces. More flexible and subtle, could incorporate allocation policy eg to complement car-free areas. Some enforcement issues could potentially be resolved by technology eg smart cards.
Inclusion of additional charge for allocated parking space in service charge	For those off-street spaces that are within the curtilage of the dwelling, or are recognised to be attached in some way. Could be used for on-street spaces if unadopted.
Short term charging of on or off-street spaces (unadopted roads only)	Charging hourly, daily, weekly based on standard on-street model. Considerable operational and enforcement requirements. Most flexible and perhaps easiest understood.
Short term charging of on-street spaces on adopted roads (requires Special Parking Area designation or similar)	As above but has to abide by parking legislation – strict requirements and high operational and enforcement costs. Would have to be introduced by highway authority (Leicestershire County Council) unless functions could be transferred. But could fit in with other on-street charging regimes in Leicester.
Workplace Parking Levy, as enabled by Transport Act 2000	Would have to be introduced by highway authority, unless functions could be transferred, applies only to commuter spaces, and bureaucratic procedure.
Australian parking licencing model	Combination model, used in Perth and Sydney CBDs, but might be applicable to eco town as depends on good ownership data. This is a parking levy for privately-owned non-residential off-street parking spaces.

Setting parking charges

Table 3 below assesses possible methods for setting parking charges. Although the options are listed as if separate, many could also be used together to develop a more complicated formula that could integrate the best parts of each option.

Table 3: Options for parking charge formula

Option	Strengths	Weaknesses
a. Matching existing parking charges in Leicester and Leicestershire (on and off street, and/or park and ride)	Integrates eco town, perhaps perceived as fair. May be required on adopted roads anyway.	Low demand management potential
b. Relating parking charge to land value and maintenance of space involved	Might be better understood by employers than householders	Low demand management potential
c. Matching parking charge to required expenditure on alternatives to the car	Pragmatic but also makes benefits to car users transparent	May not be robust if challenged if used without other support
d. Setting the parking charge as a proportion of the service charge or rent	Easily understood and managed	Does not clearly relate to demand management
e. Matching parking charge to public transport fares	Maintains principle of balancing public transport with car accessibility	Complex and arguable calculation required
f. Set market prices	Easily understood	How to start? By auctioning spaces?

A proposed parking charge formula using elements from Table 3

The formula has five parts, depending on the nature and purpose of the parking place, and for simplicity, assumes a complete development of 15,000 houses and a similar number of jobs, with a total of 10,000 parking spaces (exclusive of park and ride provision):

a. Incorporated into service charges (off-street)

Using option a. above, as current park and ride fares are £2.60 per person return (for bus travel plus a day's parking), a comparable formula for The eco-town could be:

Approximately 5000 spaces

Residents with a parking space within their curtilage would pay an amount for this space as part of their service charge. This would be managed by a sophisticated smart-card entitlement.

b. Long term rental or parking season tickets (off-street and unadopted on-street)

Those residents without a parking space within their curtilage (and who wanted to rent one) would be able to use a smart card to access both enclosed or otherwise managed parking areas and unadopted on-street parking via meters or similar technology. Spaces would be guaranteed to be available but not allocated. Only one space per household would be allowed.

Approximately 2500 residential spaces

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Employers and commercial organisations could have their parking rental added to their premises' lease, again with guaranteed availability within a specified distance. Each employer would have a maximum cap on parking available for rent established within their lease, and employees would be able to use smart cards or similar to access the spaces. Employers could also use travel plan initiatives to manipulate the availability of parking to match their employees' personal circumstances – for example, if the employee wanted to use public transport three days a week but drive in two days a week, this could be accommodated and managed. It would be up to employers whether they charge employees for the spaces used or not, but the travel plan advisors would work with employers to secure the best benefit in terms of the core requirements of the company itself as well as the demand management impacts.

Approximately 2000 employment spaces

c. Public, town centre and informal visitor parking (off-street and unadopted on-street)

Charges would be comparable with the city centre. Special arrangements would be made for people with disabilities and residents' visitors – this could be done using smart cards which would allow these special arrangements to be organised by the SCC working directly with residents.

It is suggested that any surplus income made from this source is invested directly back into the public realm of the town centre and residential areas. This is a sort of 'natural justice' that might appeal to residents and others affected.

Approximately 500 spaces

d. Public, town centre and informal visitor parking (on-street adopted)

This regime could be operated by the SCC if the streets were unadopted or by the highway authority if the streets were adopted, probably as part of a Special Parking Area, targeted at preventing unauthorised resident and employee parking, unofficial park and ride to the city centre and managing visitor parking, and would consist of selected areas, for example close to shops and tram or bus stops. The same charging regime would be applied as in c above.

e. Park and Ride

1000 spaces

The park and ride sites are planned on the A6. Initially each will provide 500 spaces with the capacity to increase to 1,000. It is assumed that this will be operated by the SCC but will match the current Leicester park and ride pricing system. Timing of

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development will be important so that these sites can be brought on stream at the most financially secure moment. The park and ride sites, although normally not catering directly for the eco-town residents (although they could include some provision for visitors) will also be good opportunities for advertising and promoting the SCC and its activities.

Conclusions on charging for parking

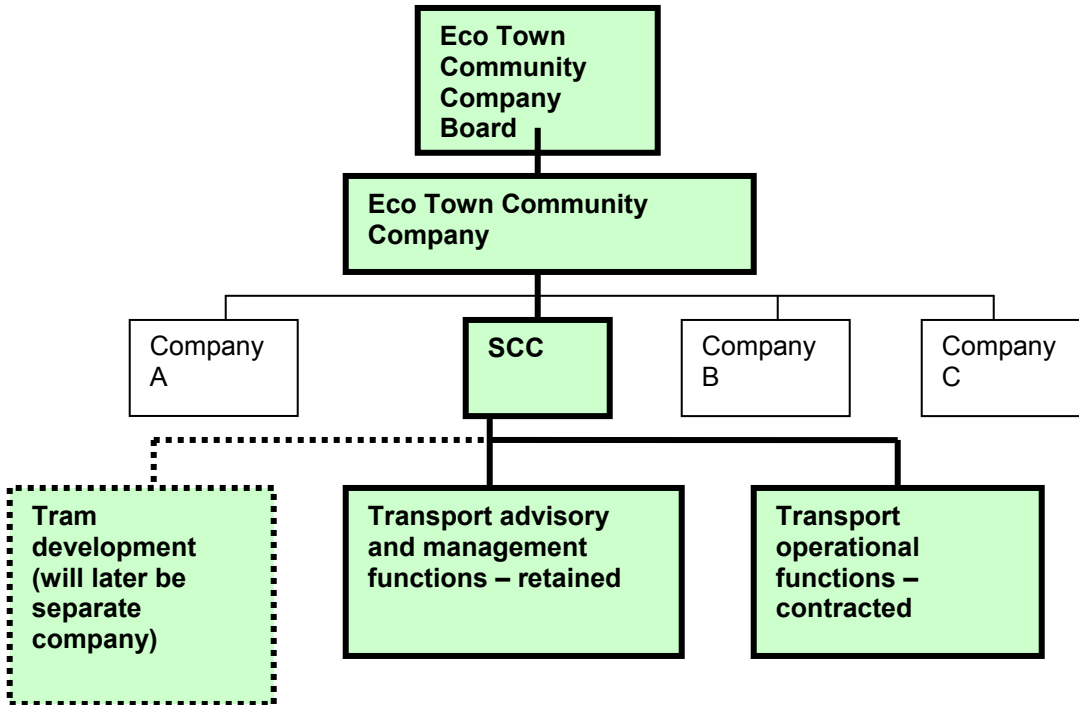
- a. Charging for parking is a feasible method of funding travel demand management initiatives in The eco-town. It is estimated that sufficient revenue would be generated to cover the costs of the SCC with some potential to also contribute to bus subsidy and tram development.
- b. Charging also contributes to travel demand management, but requires a customer-friendly management system (such as smart cards) that demonstrates alternatives to the customer, so that an informed decision can be made based on relative costs and availability.
- c. Parking income will not cover SCC costs in the early years. It is estimated that a break even point would occur 5 years into the town's development .
- d. Enabling legislation to charge for parking on adopted roads is complicated and restrictive. It is suggested that a parking policy for adopted roads is based on congestion management, not demand management. Conversely, parking policy for unadopted roads should be specifically planned to achieve a lower use of cars.
- e. Consideration should be given to the public acceptability of charging for parking and this should be a key part of the SCC marketing strategy. But users should also be able to see the direct benefit of the charge e.g. in public realm work, incentives to use public transport, use of smart cards, and transparent accountancy, so that they can see what the income is being spent on.

7 Potential Governance Models

This section looks at what type of SCC would work well within a previously proposed community governance model for the Eco-town for Leicestershire.

The Smarter Choices Company will be a separate company to the Eco-town Community Company (ETCC) but closely affiliated to it, and run along similar lines as a community mutual organisation,

Diagram 4: Relationship of SCC to eco town governance structure



Suggested Eco Town Board requirements for the SCC

Effectiveness – the purpose of the SCC is to manage travel demand to achieve a more significant modal shift away from the private car than would otherwise be the case. The Chief Executive or Managing Director of the SCC will be accountable on performance to the Eco-town Community Company Board. It is suggested that the SCC enters into an agreement to receive funds from the Eco-town Community Company Board and in return to take on the responsibility of achieving added value (in the likely form of an additional modal shift requirement) as well as managing elements of the modal shift strategy such as bus operations and parking restraint, but without being held responsible for the targets allocated to these items.

Efficiency – the SCC will be responsible for finding value for money ways to achieve its targets. One of the ways it can do this will have to be by using income gained from

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some functions to enable or subsidise other functions, in particular by recycling income from parking charges. Income gained from SCC activities must be retained by the SCC for other transport activities.

Probity – the SCC must be able to demonstrate fair and equitable procedures and expenditure to its members, who will include customers, residents, service providers and ETCC Board as well as auditors. This will be done by means of ‘open book’ accounting.

Sustainability – the SCC must have suitable capability and capacity internally to be able to achieve the targets, either by undertaking activities itself or by contracting them to other organisations. Most operational functions will be contracted out to specialist organisations, and the SCC itself will focus on policy and strategic direction, travel advice, marketing, performance, and contract management. This will enable new functions to be added. The SCC must also be able to accrue funds to finance expansion and new activities as the eco town gets bigger.

Innovation – the SCC will have the capacity to lead on technological initiatives and behaviour change opportunities to achieve the objectives. This will include a complete mobility strategy that is joined up by ICT, particularly use of information and incentives via the web and smart cards. This already presents new and efficient ways to operate and balance and incentivise users, and will potentially provide new revenue streams through stored value, percentages on transactions and value added services.

Proposed SCC organisational form

The SCC will operate as a co-operative with an elected Board and an Executive. Its customers will have the opportunity to become its members and to sit on its Board. The Board will agree the strategic direction for the SCC in consultation with the Eco-town Community Company and will test these against agreed eco-town priorities, values and principles. The Executive will enact the Board’s wishes and report to the Board on outcomes. Community member input below Board level will also be provided by the creation of a Smarter Choices Company Sounding Board’ for SCC members. This will not make decisions but will report back to the SCC Board for action. There will also be regular updates and consultation with all of its members and the community using means such as the Community Window interactive portal.

8 SCC Organisational Structure

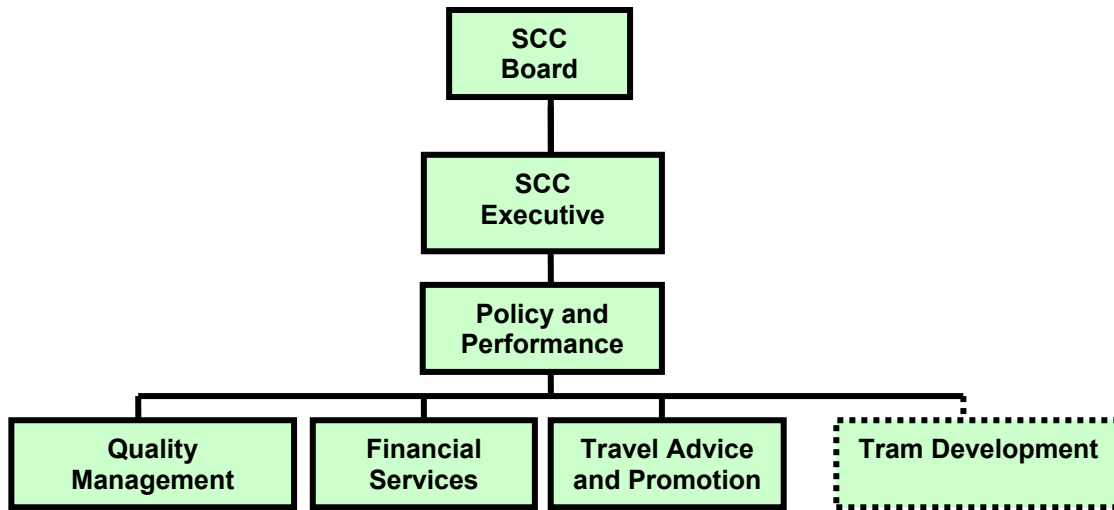
This section describes a proposed organisational structure for the SCC that will:

1. *meet the requirements of the SCC Board*
2. *efficiently provide the stated products and services*
3. *allow for SCC member and community involvement*

It also provides a short summary of the skills that will be needed to staff this structure.

To meet the requirements of effectiveness, efficiency, probity and sustainability the SCC will require a formal structure based around performance management, with a Chief Executive who will be charged with achieving the modal shift targets. The following diagrams represent hierarchies of functions, not necessarily teams of people.

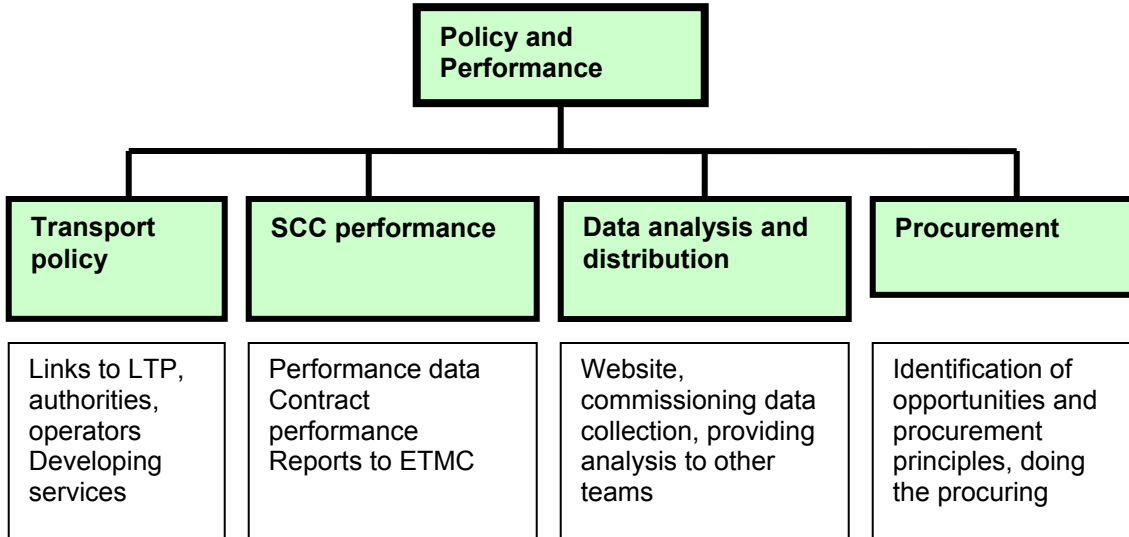
Diagram 5: Proposed SCC Executive organisational structure



Policy and Performance

This element of the SCC will include transport analysis and policy, as well as managing performance of the company itself, including the operational contracts. This section will provide the Board with information on progress, planned next steps and whether targets are being met.

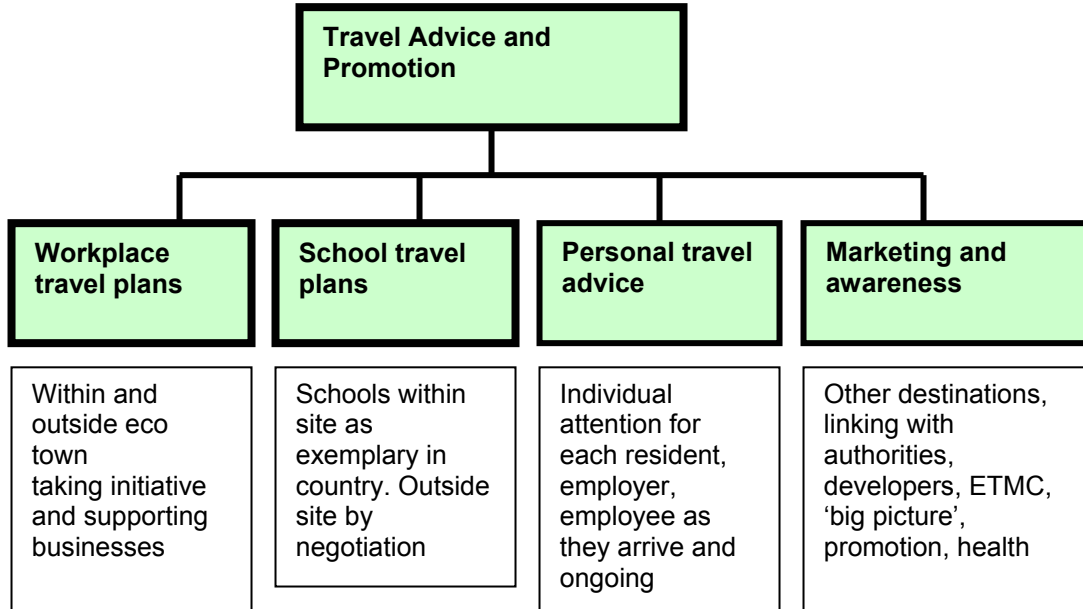
Diagram 5a: Policy and Performance



Travel Advice and Promotion

This will be the core service of the SCC itself, providing travel advice and information to all new residents, employers, schools, public transport operators, local authorities and other relevant stakeholders. It will include a significant marketing element, to ensure that the SCC and Central Leicestershire transport strategies are widely known and understood. This service must be available from the start of construction in order to be visible and active to all those considering moving in.

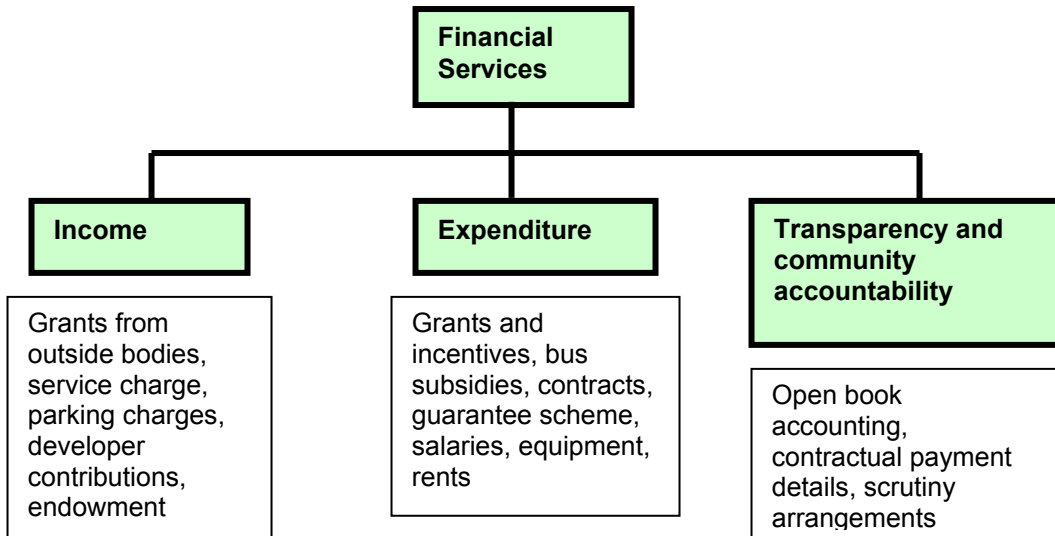
Diagram 5b: Travel Advice and Promotion



Financial Services

This will be a small group of key professionals responsible for the probity and transparency of financial transactions. They will however recognise the nature of resident and community involvement in the SCC, and be able to manage this in a professional manner.

Diagram 5c: Financial Services



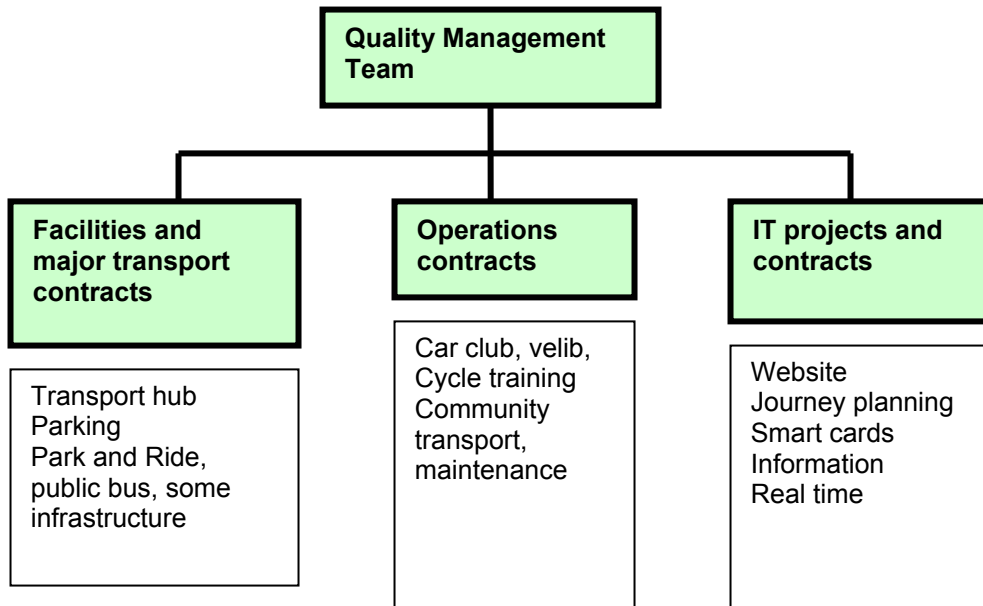
Quality Management

This function is the management of the various contracts within the SCC. It will be responsible for ensuring compliance with contract conditions, for meeting contract objectives and for ensuring value for money and quality (within the terms of the contracts as set by the Policy and Performance section). The contracts will be varied, including:

- Facilities such as the transport hub itself and Park and Ride sites
- Large scale operations such as parking management and commissioned public transport
- Small scale operations (some of which could potentially be contracted to community organisations) such as car club, cycle training and community bus
- IT projects and contracts such as real time information, journey planning, smart cards

The Quality Management function will include people with generic skills who will form a 'centre of excellence' for contract management, transferring best practice across the various contract types.

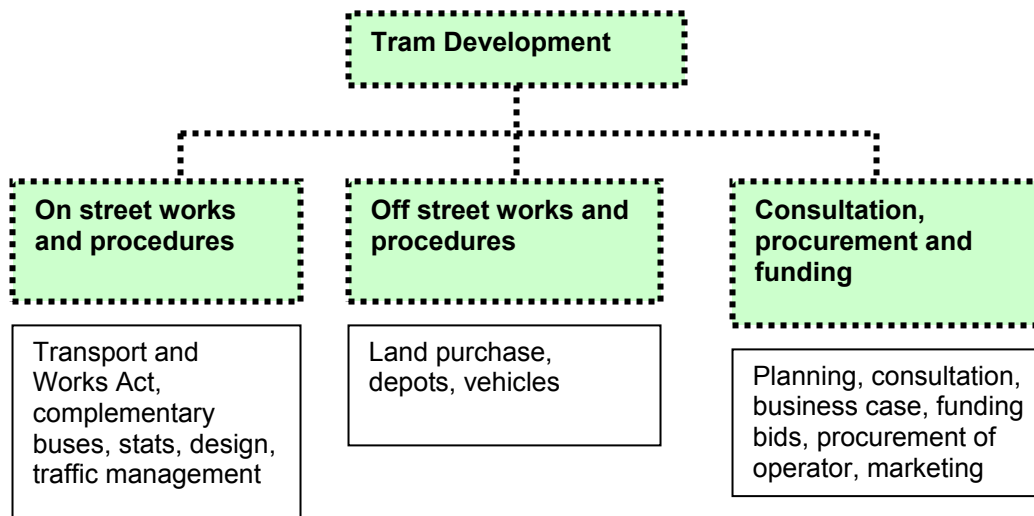
Diagram 5d: Quality Management



Tram development

The tram development function is shown here for completeness although it is possible that whilst the sub-regional transport study will be ongoing from Day 1, the outcome of the study, including whether the tram will form part of the transport solution, may not be known. Its detailed functions depend on the role the team will take in partnership with local authorities and the likelihood that a separate company will be developed at some stage to promote the tram.

Diagram 5e: Tram Development



Skills required

Recognising the range and complexity of services to be offered, three skill sets have been identified as key to the company's success:

- a. Relationship building, partnership and community involvement skills will be necessary to ensure that the SCC is seen as valuable by stakeholders and is supported by local authorities and operators. As the SCC will be managing both restrictions on freedom of action (i.e. parking charges) and incentives to change behaviour, there will almost certainly be tensions between different stakeholders and resolving these will require robust skills and capabilities.
- b. Performance and contract management skills will ensure that the right procedures are put into place to ensure that the company meets its targets within identified timescales. The SCC will be accountable to the Board based on the achievement of these targets.
- c. Policy, transport planning, and travel advice skills will enable the company to stay at the forefront of innovation, and to disseminate this knowledge to other professionals and interested parties

Two supporting skill sets are:

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- d. Marketing - to support the relationship building and transport planning activities
- e. Finance and accounting – to support the relationship building and performance and contract management activities.

9 Conclusions and next steps

The promoter aims to set a new standard of development and travel management in the eco-town. An SCC on the scale now imagined has not to our knowledge been done before, To make some progress, this report has developed the SCC concept into a more tangible model that can be further tested over time. It has demonstrated that the SCC will be an exciting and effective prospect, but that it will require considerable management input.

Next Steps

1 To make the following decisions:

- The contribution that the SCC has to make towards the required modal shift target;
- Detailed agreement on the scale of initial and ongoing funding required;
- The viability of and timescales for the tram project;
- Agree the Sources of funding for the SCC, particularly if parking charging is to play a significant role

2. **Detailed look at SCC activities and costs** with engagement with potential residents and/or workers from the local area. This will include more consideration of SCC phasing requirements to complement both development and infrastructure phasing.

3. **Explore the potential to achieve Complete Mobility.** This is a focus on what needs to be done to provide end-user focused, seamless and valued transport services for the eco-town. To the promoter's knowledge, this concept has not yet been used in reference to eco towns or growth areas, but has proved a popular and useful framework for describing an integrated approach to transport and planning in various world-wide examples such as Toronto and Brisbane. It uses a range of initiatives including co-ordinated IT, marketing, individualised incentives to provide frameworks for developing transport solutions, as well as giving attention to governance and management issues. The aim will be to provide refined objectives and activity plans for the SCC that focus more directly on complete mobility.

4. **Build on the concept of Transit Oriented Developments (TODs)** – there are already developments in the US, albeit on a smaller scale, that have successfully reduced predicted car use simply by virtue of maximising the benefits of being near a good transit link. This is an approach that provides for greater planning and transport integration which can be built on and extended for the eco-town's specific situation. Whilst accepting the cultural and legal differences, the following extract summarises the current view:

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“All neighbourhoods near transit are exhibiting the characteristics of high-performing TODs: the massing of significant density to create a “location-efficiency” that promotes walking, biking, transit use and low auto ownership; increased transit ridership and non-auto mode share; a rich mix of uses and consumer choices; significant value creation and value capture by both the public and private sectors; and the creation of a sense of place. Perhaps most significantly, the increases in traffic have been minimal.” (Platform: Building the New Transit Town, Reconnecting America, Summer 2006)

The following might be considered as ways of building on TOD ideas:

- Recognising the importance of a central transport hub from the start, locating the SCC there, and as far as possible, building out from the hub
- Similarly recognising the importance of the BRT/tram route and building out from that corridor
- Reducing bus subsidy costs by matching the provision of at least the BRT/tram to the development build out
- Recognising the potential of the higher land values around the hub and BRT/tram route to maximise densities and consider higher service charges (particularly if these can be recycled into incentives)
- Looking at the American examples of securing mixed income housing around hubs and transit lines to meet both housing and planning objectives
- Looking at American examples of successfully securing retail investment in district centre locations by emphasising proximity to transit as well as compact, attractive, walk-able and cycle-able shopping streets

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Appendix 1: Effectiveness of proposed SCC activities

Initiatives	Modal Change Achieved	Location	Source	Comment
Travel Plans				
Regional	4-13% reduction in car driver trips	Various, e.g. Darlington and Worcester	<i>Making Personal Travel Planning Work</i> – Department for Transport – Dec 2007	Review of PTP projects across the UK 6-20 Months after project
School	Car mode share -8%	Buckinghamshire	<i>Smarter Choices: Changing the way we travel.</i> Case Study Reports. July 2004. DfT	BucksCC has worked with nearly 2/3 of schools in the county. Focusing on walking buses and an incentive scheme called Go for Gold
Workplace	8-15% reduction in school run traffic Car trips in the inner and central area have reduced by 8% since 1996 Individual businesses have reported 8%-55% reduction in single occupancy vehicle trips.	Various Bristol – Various businesses	<i>Making Smarter Choices Work.</i> Publicity Booklet. DfT <i>Smarter Choices: Changing the way we travel.</i> Case Study Reports. July 2004. DfT	Bristol City Council's workplace travel plan programme currently involves contact with 85 employers and nearly 30,000 employees. The programme is assisted by a wide range of high profile transport initiatives being implemented in Bristol, including showcase bus routes, car clubs, car share schemes and a dense cycle network.
Public Transport Marketing	6% reduction in trips taken as car driver	South Perth	<i>Switching to Public Transport.</i> Werner Brog for Socialdata, October, 2000.	IndiMark (Individualised Marketing) concept. The strategy targeted a decreased share of driver-only trips, with a greater proportion of trips by other modes, specifically public transport, cycling and walking. It does this by establishing an individualised dialogue with potential users through direct contact and a step-by-step communication process. In Perth they used the banner "TravelSmart";

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					marketing, education and participation processes were used to influence travel choices made by individuals.
Cycle Schemes					
Vélib	Car traffic in Paris has dropped 20% since the introduction of Vélib	Paris		<i>Dossier de presse</i> , official Vélib website.	Currently there are 16,000 Vélib's in circulation while there will be 20,600 bikes by the end of 2008. Between 2001 and 2007, the number of bikers in Paris has increased by 94%. Today the bike accounts for 2 to 3% of all traffic in Paris. Further details of the scheme available at: http://www.velib.paris.fr/
Cycling Management (improving cycling facilities, security, servicing etc)	Increased cycled journeys by 4%	Strasbourg		<i>Cycling : The way ahead for towns and cities</i> . European Commission, 1999.	Strasbourg has 77 km of cycle paths and tracks, 12 km of restricted one-way streets and 15 km of pavements on which cyclists are authorised to travel. Some bus lanes are also open to cyclists. The overall plan for managing two-wheeled traffic and a cycling charter (including cycling facilities, an anti-theft campaign, communication, and service bicycles) have been adopted with the aim of reaching an ambitious target, namely 25 % of journeys to be made by bicycle.
Cycling Incentives	32% Reduction in trips by car	Aarhus, Denmark.		<i>Smarter Choices: Changing the way we travel</i> . Final Report. July 2004. DfT	175 participants. All daily-users of the car and living 2-8km from their workplace. Participants received: <ul style="list-style-type: none"> • the new bicycle of their choice (maximum value 5000 DKK), a child seat (if desired), unlimited free servicing and the option to buy the bicycle at the end of the year for 1000 DKK • a one-year pass for public transport in the municipality (worth about 5000 DKK), and free timetables • rain gear, an umbrella, gloves and a towel

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				<ul style="list-style-type: none"> • optional information meetings and a bimonthly newsletter (giving advice and enabling participants to exchange experience) • an optional health check <p>In return, participants had to sign a 'contract' promising to try and take the bicycle and bus as much as possible, and to participate in regular surveys.</p>
Dedicated School Transport	<p>Increase in proportion of pupils travelling by bus 3%-8% (the report intimates that this is a direct movement away from car trips, but does not state this explicitly enough)</p>	<p>Wrexham and Runnymede</p>	<p><i>Evaluation of First Yellow School Bus Schemes – Summary</i>, DfT.</p>	<p>Recent years have seen increasing concern about the rising proportion of pupils transported to school by car and the associated traffic congestion, environmental and social/health problems. As a result, there has been growing interest in the use of American style yellow bus schemes in the UK in recent years.</p>
Car Sharing	<p>Single occupancy vehicle trips modal share reduced by 8%-25%</p>	<p>Sowton Business Park, Exeter and Land Rover site at Gaydon</p>	<p>Case studies paper <i>Making Car Sharing and Car Clubs Work</i>, December 2004.</p>	<p>Focused on integrating car sharing schemes into larger company's travel plans.</p> <p>The 25% figure came from a partnership between MET Office and EON who were located on the same business site. Their larger % was possible because of the larger pool.</p>
Car Club	<p>Members reduce the %age of their trips taken by car by 42.6%</p> <p>Each car club car typically replaces 10 private cars</p> <p>Former car owners increase their use of non-car transport modes by 40% after joining a car club</p>	<p>UK</p>	<p>Carplus national car club member survey, 2008</p> <p><i>UK car clubs: an effective way of cutting vehicle usage and emissions?</i> Matthew Ledbury, Sept 2004, Environmental Change</p>	<p>The objectives of these schemes can be complex.</p> <p>For current car owners using the car as a second vehicle the scheme may result in an increase in number of trips by car.</p> <p>For non-car owners it usually leads to an increase in trips by car.</p> <p>However, for car-owners who give up their cars and use the scheme instead their trips by car and their Vehicle Miles Travelled are usually</p>

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			<p>Institute, University of Oxford.</p>	<p>significantly reduced. Hence, the scheme aims to persuade car owning drivers to give up their cars and rely solely on the car club, and also dissuade non-car owners from purchasing a car.</p>
<p>Parking</p>	<p>10% increase in parking charges reduces private vehicle trips by 1-3%</p> <p>Shifting from free to cost-recovery parking (prices that reflect the full cost of providing parking facilities) typically reduces automobile commuting by 10-30%</p> <p>Research shows that modal shift varies according to location and cost. For example, a \$1 cost in a low density suburb will only shift 6.5% of trips, but a \$4 charge in an urban CBD could shift up to 50% of trips to other modes.</p> <p>n/a</p>	<p>Various. United States.</p>	<p><i>Parking Pricing: Direct Charges for Using Parking Facilities</i>, TDM Encyclopaedia, Victoria Transport Policy Institute, July 2008.</p>	<p>Pricing that applies to commuter parking tends to be particularly effective at reducing peak-period travel</p> <p>Most effective if implemented with improved transportation choices and other complementary TDM strategies.</p> <p>However, pricing parking in just one area may simply shift vehicle trips to other locations with little reduction in overall vehicle travel.</p>
<p>Reduced car parking provision</p>		<p>Various.</p>	<p><i>Parking Spaces / Community Places Finding the Balance through Smart Growth Solutions</i>. U.S. Environmental Protection Agency, January 2006.</p>	<p>No explicit figures are currently available.</p> <p>New developments, such as the Stadium Station Apartments in Portland, are looking towards reduced parking developments. Here they have 115 affordable apartments, with parking at 0.6 spaces per unit.</p> <p>Of the 40 units already leased, only one-third of households own automobiles. Despite already low parking ratios, 50 percent of the parking remains unused at full occupancy. We can assume that this will consequently help reduce car trips in favour for public transport use.</p>

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<p>Park & Ride</p>	<p>11-26% uplift through modal shift</p> <p>3-9% reduction in city-centre bound traffic</p>	<p>Various.</p> <p>Oxford</p>	<p>Obtaining best value for public subsidy for the bus industry - conclusions & recommendations. UK Commission for Integrated Transport. 2005.</p> <p><i>Parking pricing and management.</i> Tom Rye, Napier University, Edinburgh, UK</p>	<p>Varies according to settlement size.</p> <p>Modal shift origin not stated. i.e. We do not know how many of these are switching from single occupancy vehicles.</p>
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Appendix 2

An example of parking charges in a residential/mixed area

Van Ness and Turk Development -- San Francisco, California

This development includes 141 residential units in a dense area of San Francisco, with only 51 parking spaces. The development was granted a substantial reduction in parking requirements—nearly two-thirds—from the city’s minimum of 1 space per unit, to 1 space per 2.8 units. The reduction was granted in large part because of the developers’ agreement to provide two parking spaces for car-sharing operator City CarShare, accessible to residents and all CarShare members. Strong community and organisational support, as well as proximity to major transit corridors, were also factors.

If the developers had been required to build the additional 90 spaces required by code, they would have been forced to add either subterranean levels or parking lifts, which save space by stacking vehicles on top of each other. These expensive options would have cost between \$1.35 million for lift technology (estimated at \$15,000 per space) or \$8.1 million for additional below-grade parking levels (estimated at \$60,000 to \$90,000 per space).

The developer also “unbundled,” parking costs, so that residents are charged for parking separately from rent. The current market rate for parking is \$280 to \$300 per space per month. By charging separately for parking and incurring lower construction costs, the developer is able to keep apartment rents lower.

Source: Thieophilos Developers, 2002.