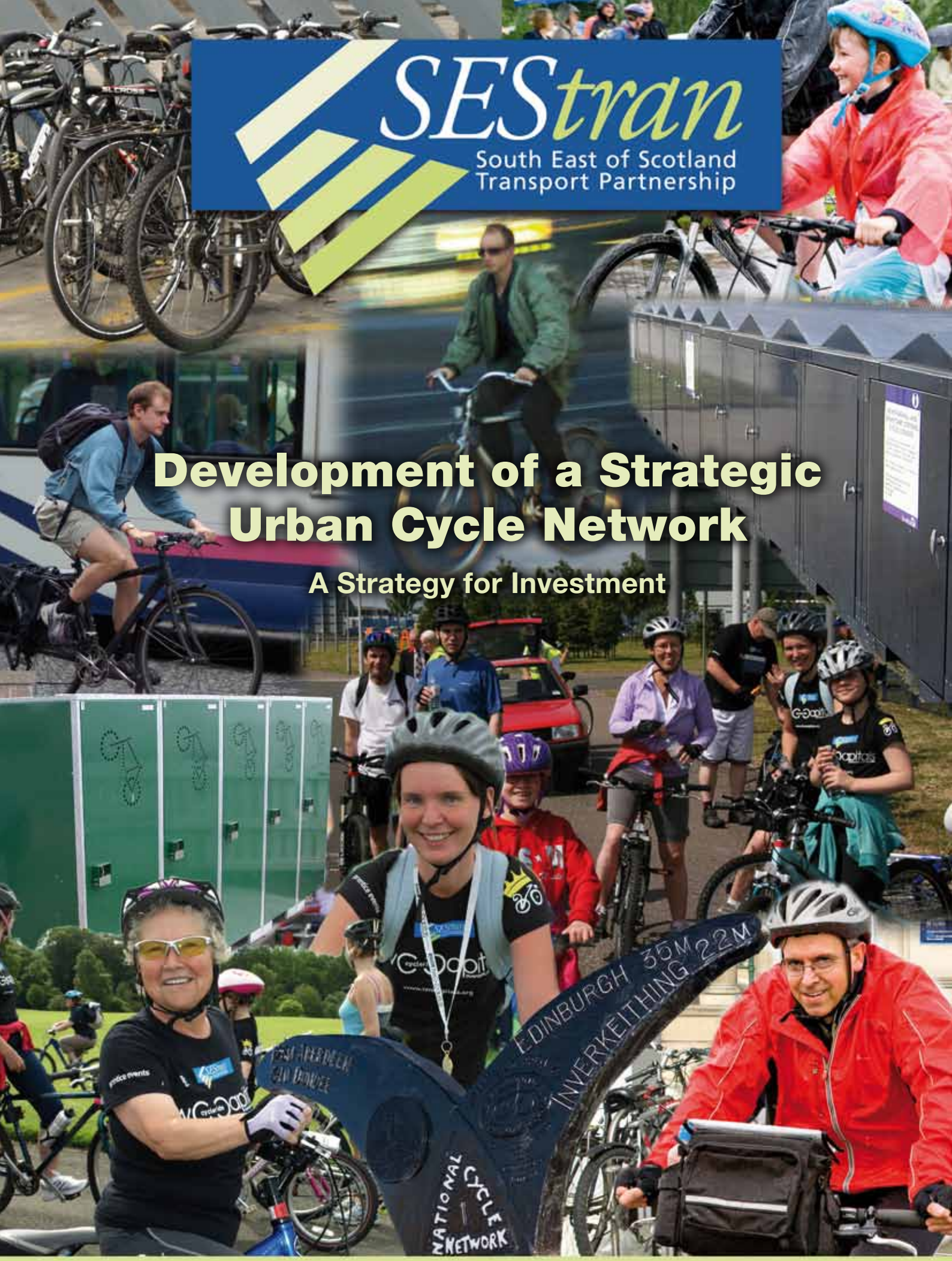
SEStran
South East of Scotland Transport Partnership

Development of a Strategic Urban Cycle Network

A Strategy for Investment



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1.1 Background

1.1.1 This study was commissioned by SEStran in order to address a number of strategic objectives relating to sustainable travel as set out in the Regional Transport Strategy (RTS) as follows:

- to promote more sustainable travel, and,
- to increase the proportion of trips by walk/cycle.

1.1.2 More specifically Section 6.8 of the RTS deals with a number of priorities relating to cycling including:

- **Topic 16 – Action:** SEStran to support the development of urban cycle networks as a **high priority** – these cycle routes would in the main parallel the major transport flows identified in the RTS;
- **Topic 17 – Action:** In SEStran, key links in this category [rural cycle networks] would be developing a continuous round-the-Forth cycle route, and national cycle network routes. These should be implemented as a **medium priority**; and,
- **Topic 18 – Action:** Building on work previously undertaken by City of Edinburgh, SEStran will collate best practice on cycling infrastructure, as a resource available to local authorities, as a **medium priority**.

1.1.3 Work on the Action Point from Topic 18 was completed in May 2008 and provides comprehensive guidance on the design and construction of cycling infrastructure. This study provides recommendations on the strategies and actions required for the development of a strategic urban cycle network (Topic 16)

1.1.4 This work has involved:

- a review of cycling provision associated with the main transport corridors in urban centres (defined as having populations over 10,000) both for commuters travelling directly to areas of employment and to railway stations and other transport interchanges.
- A consultation exercise with key stakeholders
- a Best Practice review indentifying issues relating to promoting modal shift and the types of improvements that are required to provide high quality and user friendly urban cycle networks.

1.1.5 This Strategy for Investment seeks to combine the lessons learnt from the review of existing provision, consultation and best practice into a series of recommendations for the development of a strategic cycle network across the region.

1.1.6 It is accompanied by a separate study report which provides details on the study methodology, desk top review, review of best practice, cycle audits and consultation.

1.2 A focussed approach

1.2.1 Improving facilities for all cyclists is important but if improvements are to be effective it must be recognised that cyclists are far from being a single homogeneous group. Previous work for SEStran in preparation of the "Cycling Infrastructure: Design Guidance and Best Practice" led to the definition of four major groups of cyclists.

- A – Leisure cyclists including families
- B – Risk-averse and child utility cyclists
- C – Risk tolerant/experienced utility cyclists including many commuters
- D – Sport cyclists

1.2.2 Group A "leisure" cyclists are those who make at most one or two trips a week, for the specific purpose of cycling or exercising rather than to make a specific journey. Group B "risk-averse and child utility" cyclists are those adults and children who make everyday journeys by bicycle but lack the confidence or expertise to tackle busy, congested urban routes and large junctions. Group C "risk tolerant/experienced utility" cyclists are those making everyday journeys who have sufficient confidence and experience to feel comfortable with riding in standard traffic conditions. Group D "sport" cyclists are those who take part in mountain or road biking activities as sports. Such cyclists may or may not also cycle on an everyday basis and can potentially fall into either Group B or C if they decide to do so.

1.2.3 The achievement of a noticeable increase in the number of trips and overall level of cycling in the urban areas across the region can only be achieved by encouraging those people not currently cycling to get on their bikes and help existing cyclists move through the classifications to become Group C cyclists.

1.2.4 The recommendations made in this report provide a strategy for investment to improve the urban cycling network and develop supporting systems that will result in improved facilities and result in people having the confidence and experience to regard themselves as regular utility and commuter cyclists.

2.1 Cyclists as equals

2.1.1 SEStran's vision is that the provision of new cycling infrastructure will be given a status equal to that of the provision of new infrastructure for other road users, particularly motor vehicles. When considering some streets and areas in relation to space and movement, such as residential streets and town centres, it will be appropriate in line with current design philosophy, to consider the needs of pedestrians and cyclists before motor vehicles. In addition to this, the improvement and maintenance of existing cycle facilities will also be afforded the same consideration as given to improving conditions for other road users.

2.2 Cycling – The first choice for urban travel

2.2.1 Cycling as an urban travel mode has the potential to be quick and efficient, competing very effectively with urban public transport and also with cars in congested situations. Cycling is environmentally friendly with zero emissions; it is cheap with both the necessary equipment modestly priced and parking free. Cycling has health benefits and is a sustainable mode of travel.

2.2.2 In order to maximise the benefits of cycling and to ensure that as many people as possible are able to access them then there is a need to create high quality and well maintained routes and facilities for all levels of cycling ability. In addition where routes can accommodate such provision it is recommended that they are installed to meet criteria that provides for the needs of young unaccompanied child riders, inexperienced and less confident cyclists alike. These being:

- well signed and coherent routes;
- smoothly surfaced;
- free of steep gradients (if possible);
- free of features likely to require rapid evasive action or braking; and,
- wide enough and with sufficient visibility to allow faster cyclists to pass without unsettling less confident users.

3.1 From vision to reality

3.1.1 SEStran's vision for cycling provision was set out in the previous chapter. From this a set of key objectives has been derived in order to address concrete aspects of urban cycling provision and the encouragement of all groups to use this mode. These objectives are as follows:

- Improve cycle facilities and infrastructure aiming to meet the five infrastructure objectives on cycle routes (see below)
- Improve cyclist safety
- Improve cyclist security
- Promote a cycle friendly culture
- Integrate cycling with other policies and objectives

3.1.2 Overall the aim of these objectives is to promote urban cycling and encourage modal shift achieving an average of 6.3% of journeys to work by bicycle by 2023.

3.1.3 Improving cycle facilities and infrastructure means providing both more and better infrastructure which meets the needs of all cyclists.

3.1.4 European research (CROW; The Centre for Research and Contract Standardisation in Civil and Traffic Engineering) has offered a clear identification of cyclists requirements for cycle routes and this work is referenced in both the Scottish Government publication "Cycling by Design" and in SEStran's publication "Cycling Infrastructure: Design Guidance and Best Practice". Essentially cyclists wish to see routes which are:

- **coherent:** forming a coherent, continuous and consistent unit and linking origins and destinations;
- **direct:** providing direct links based on known or modelled desire lines and lacking delays and detours;
- **attractive:** complementing and, where possible enhancing the area through which it passes and allowing for the total experience of the cyclist on the journey;
- **safe:** minimising actual and perceived risks;
- **comfortable:** smooth, well maintained, properly surfaced and with gentle gradients and curves, convenient to use and lacking complicated manoeuvres

3.1.5 SEStran's publication "Cycling Infrastructure: Design Guidance and Best Practice" outlines the different priorities of different groups of cyclists with regard to these five key route features. Group A "leisure" cyclists (as described in Section 1.2) value coherence firstly followed by safety. They are also encouraged by route attractiveness but place a lesser importance on comfort and directness. Group B "risk averse/child utility" cyclists also value safety and coherence most highly but place more emphasis on comfort and directness and are not overly concerned about attractiveness. Group C "experienced utility" cyclists value directness above all other factors followed by comfort. They are concerned that routes should be safe but have concluded that the risks they run are acceptable and will ignore slow "safe" facilities in favour of direct routes. Coherence also has some importance but does not mean that routes cannot include on road sections where they are exposed to traffic. Attractiveness is desirable but not particularly important.

3.1.6 In order to meet the needs of all cyclists, route designers need to work to maximise provision of all these five route features within the limits of what is appropriate for a given route. For example where a route has more than one possible variant then it may well be appropriate to improve facilities on the less direct, more attractive option in order to meet the needs of Group A cyclists while also improving provision on the more direct, main road option in order to accommodate Group C cyclists.

3.1.7 Cyclist safety, and more importantly the perception of safety is a key factor in attracting and retaining new cyclists. Cycling is not, inherently, a particularly dangerous activity and several studies have indicated that, statistically speaking, the overall health benefits of cycling considerably outweigh the potential health risks to individuals resulting from injury and accidents.

3.1.8 Though the genuine risks to cyclists in absolute terms are low it is clearly advantageous to minimise them as when they are involved in incidents they do run a regrettably high risk of severe injury and most cyclists have experienced the unsettling increase in the awareness of the possible consequences to themselves which follows any near miss.

3.1.9 As important however, if not more important, than the minimisation of the actual risks to cyclists is the minimisation of perceived risks. Non cyclists frequently cite the "dangerous" nature of cycling as a major barrier to their attempting it. While the level of risk described by non-cyclists is demonstrably false in comparison with the experiences of Group C "experienced" cyclists this is not because the risks themselves do not exist and cannot be addressed.

3.1.10 Cyclist security is related to safety and covers such aspects as the risk of attack on individuals as well as the theft and vandalism of bicycles and cycle facilities.

3.1.11 Cycling and cycle provision is a key feature of the RTS as well as Local Transport Strategies (LTS) throughout the region. It is addressed within National, Regional and Local Planning and in the Scottish Government document "Designing Streets" (consultation draft January 2009). Consideration of the needs of cyclists at all stages in the development, redevelopment and redesign process can make a key contribution to the provision of cycle friendly infrastructure and conditions.

4.1 Introduction

4.1.1 The following sections provide general principles and recommendations that will guide and direct the development, maintenance and promotion of urban cycling and the of the strategic urban cycle networks in the SEStran region.

4.1.2 This will be followed in chapter 5 with a Guide to Investment for delivering infrastructure improvements on the strategic urban cycle network. The action plan provided is the result of issued identified during the review and audit process.

4.2 Identification of key routes

UCN – 1 Identify key routes

4.2.1 The starting point for any cycle network is establishing routes that provide access to will key destinations, particularly key commuter destinations, stations and other transport interchanges. Key routes into these destinations are then likely to run along or parallel to major road approaches though, notably there may be potential for short cuts for cyclists through residential areas or across rivers for example and these should also be identified.

4.2.2 The study report which accompanies this Strategy for Investment provides an identification of key routes on the main transport corridors and local networks related to the larger urban areas within the SEStran region. It is however expected that local authorities will seek to review these routes in line with other policies and local objectives.

4.2.3 It is recommended that local authorities provide appropriate infrastructure on these key routes to highlight the presence of cyclists and improve conditions for these road users whenever physically possible through a prioritised action plan.

UCN – 2 Identify routes for future intervention and improvement

4.2.4 It is recommended that busy routes and underused routes be prioritised for intervention. Usage counts on key approaches should allow those routes which are most heavily used to be identified. In combination with knowledge on the locations of residential areas, possibly combined with more detailed information on where employees are concentrated derived from workplace travel plans it should be possible to identify underused routes to the point where further investigation can be undertaken.

4.2.5 At present SEStran in conjunction with the local authorities gathers data on cycle usage at 58 key locations throughout the partnership area. Following a recent study it has been found that the amount and accuracy of information coming from these counts could be improved. This leads to a general concern that the data gathered to date may not be relied upon in certain areas or for certain time periods either to monitor cycle use or be used to justify future investment plans.

4.2.6 It is recommended that the existing cycle data collection system be improved and maintained to ensure reliable data is available to assist in making evidence led decisions in relation to the identification of priority routes where future improvements would be most effective on the urban cycle networks.

4.2.7 In addition to these permanent sites, other cycle counts should be undertaken to measure usage on other key routes and also to help identify new routes or increased levels of cycling so that further improvements can be made to the networks.

4.3 Identification of barriers to cycling

UCN – 3 Standardise identification of physical barriers on cycle routes

4.3.1 There are as many barriers to cycling as there are trips not made by bicycle but there a number of common themes to these. Putting aside the issue of absolute journey length and also the various soft and psychological barriers, Transport for London use seven categories of barrier as follows (some barriers can fall into more than one category):

- **A** – Access/permeability issues preventing direct passage for cyclists
- **C** – Corridors with adverse moving motor traffic conditions and/or and Kerbside/amenity complexities
- **G** – Busy/complex *gyratories* with poor conditions for cycling
- **J** – Busy/complex *junctions* with poor conditions for cycling
- **L** – Legal restrictions preventing legitimate access for cycling
- **S** – Severance causing discontinuity or long deviation to cycle route
- **W** – Width/space restrictions preventing good conditions for cycling

4.3.2 The categorisation of barriers on formal or informal cycle routes allows for an organised approach to addressing these barriers.

4.3.3 It is recommended that these seven categories of barrier be used by local authorities when undertaking assessments of their urban cycle networks. This will help to introduce a standard approach across the SEStran region that can be understood by practitioners and users alike.

UCN – 4 Provide cyclists with a forum for reporting barriers and maintenance issues

4.3.4 While those responsible for the management and maintenance of road and cycle networks may be aware of the above types of barrier there is often no substitute for a "cyclist's eye view" of such barriers and the best approach is likely to be to test routes by cycling along them. However, in practice this approach is time consuming and can only be applied to a selection of the total possible routes. In addition it can often be difficult to predict the precise routes which cyclists will take.

4.3.5 It is recommended that all local authorities ensure that their customer care and maintenance reporting systems includes an interface that encourages comment and input from cyclists with regard to reporting barriers and maintenance issues on the urban cycle network.

UCN – 5 Investigation of the reasons underlying individual barriers

4.3.6 While most of the barriers to cycling will fall into one or more of the above categories outlines in 4.3.1 there can be a number of causes of barriers. For example there can be missing links on routes or routes can be discontinuous. Poor design of facilities in general or a lack of specific facilities for cyclists can introduce barriers. One-way streets can present cyclists with major detours as can banned turns and these should generally only be applied to cyclists if there are safety considerations which cannot be easily addressed. Missing dropped kerbs can be an issue where off-road cycle provision shifts to on-road provision and a lack of cycle bypass facilities on busy junctions where cyclists cannot be easily accommodated is a further consideration. Maintenance issues such as overhanging foliage on a path or a rutted and potholed cycle lane may be enough to discourage some people from cycling. Failure to protect cycle facilities with appropriate parking and/or loading restrictions can continue barriers even if facilities have been provided.

4.3.7 It is recommended that further work be undertaken with regard to establishing an understanding of what type of barrier creates the most problems for cyclists in each local authority area so that improvements and maintenance works can be targeted at removing those barriers that most discourage or prevent cycling. This understanding can be developed through a continual review of best practice and communication with local cycle groups.

4.4 Prioritised route improvements

UCN – 6 Use of CRISP approach to carry out route improvements

4.4.1 Transport for London follow on from barrier identification with the CRISP (Cycle Route Implementation and Stakeholder Plan) approach. This is an enhanced feasibility study approach that supports the planning, programming, design and implementation of improvements along a cycle link.

4.4.2 The main aims of the CRISP Process as it may apply in the SEStran region are to:

- raise the profile of cycling;
- substantially increase levels of cycling;
- improve the quality of the network;
- provide a cohesive network and a coherent approach to implementation;
- provide the optimal route for cyclists;
- include stakeholders at an early stage;
- provide a costed programme and encourage long term project planning;
- prioritise work along links; and to,
- tackle 'tough' issues along a link (along with potential funding).

4.4.3 There are three basic stages to the CRISP process. First a pre CRIM (Cycle Route Inspection Meeting) report is prepared for a route. This examines base information on a route such as traffic and cycle flow data, accident records, developments on the link, trip generators and potential alternative routes.

4.4.4 The second stage is the CRIM itself which brings together the relevant stakeholders and examines the Pre-CRIM report along with the on site conditions, barriers to cycling and route options. Finally a CRISP report is prepared that includes the output information from the earlier stages along with a clear identification of the barriers/constraints, the stakeholder feedback, route opportunities and potential costs. This report should also highlight any key safety or security issues. From this a programme for implementation can be identified, costed and prioritised.

4.4.5 Use of the barrier identification and CRISP systems allow a degree of standardisation of the types of facilities and measures being provided along all routes and allows facilities to be developed with the support of all relevant stakeholders.

4.4.6 To this end the full spectrum of provision outlined in SEStran's document "Cycling Infrastructure: Design Guidance and Best Practice" including on street and off street provision as well as general speed reductions should be considered and the measures best suited to the location selected.

4.4.7 When published the guidance in the Scottish Government publication "Designing Streets" should also be followed.

4.4.8 While it is appreciated that the CRISP approach may not be suitable for all situations, for larger networks or longer cycle routes it is recommended that local authorities use these 'best practice' principles for reviewing, prioritising and improving their urban cycle networks.

4.5 Signing strategy

UCN – 7 Develop a signing strategy

4.5.1 It is recognised that given the freedom available to cyclists in relation to route choice and the ability to make multiple route choice decisions on a single journey it not possible to signpost all possible combinations of routes and destinations. It is however the case that key routes can be identified, especially in relation to some urban routes and those heavily used for commuting, and these can be provided with appropriate signing.

4.5.2 The signing of routes not only helps in relation to demarcation of a route and the provision of destination and distance information, it also provides a further visual signal to other road users that cyclist will be present on the route or in a particular area. This is a key feature not only on roads but also on off-road paths where at times there can be conflicts between different user groups.

4.5.3 In line with current urban design philosophy the issue of singing and street clutter has to be considered carefully, however the signing of cycle routes and facilities is of key importance in encouraging modal shift and more cycling. One new cyclist's frustration at loosing their way or coming into conflict with a pedestrian on a shared use path can be a cyclist lost for all time.

4.5.4 Signposting is generally most important for Group A "leisure" cyclists and for Group B "risk averse/child utility" cyclists. Signs directing cyclists onto off-road and dedicated cycle routes are also important as is signing on these routes as it can be harder to identify one's location than is the case on street. High priorities for signing are then:

- dedicated leisure cycle routes
- routes onto and along dedicated routes
- routes to key destinations

4.5.5 Key on-road routes are also likely to require signposting, particularly where they will not otherwise be obvious to users but on street destinations are unlikely to need signposting unless the routes into them differ from the traffic routes.

4.5.6 The provision of appropriate cycle markings and the use of coloured surfacing also need to be considered in relation to an overall signing strategy as these measures provide other road users with more information with regard to the cycle facilities and the presence of cyclists.

4.5.7 Standard traffic signs including those provided for cyclists show distances to destinations. To take account of the variance in cyclist's abilities, there may be some merit in some signs showing average journey times, given that for inexperienced cyclists 5 miles may provide a psychological barrier that appears greater than say 30 minutes travel time. There is a precedent in England where approval has been given for the use of journey times on cycle signs. It may however be the case that journey time information to destinations and perhaps the provision of comparable journey times by other modes is provided where possible on supplementary signs or information boards.

4.5.8 It is recommended that local authorities review the current signing provision relating to the key routes as identified within the study report which accompanies this strategy. This will assist in providing a standardised and well understood signing regime.

4.5.9 It is recommended that local authorities continue to review and update their cycling information and promotional materials to provide cyclists with up to date information with regard to cycle routes in their areas. At key entrances to off road routes vandal proof information boards should be provided both to inform cyclists of activities but also to attract non-cyclist attention and promote interest in cycling. Web based mapping should be available on all local authority web-sites highlighting cycle routes and activates. Consideration also requires to be given to the recommendations outlined in UCN – 12 below.

4.6 Cycle Parking

UCN – 8 Provide cycle parking in line with identified best practice

4.6.1 SEStran's "Parking Strategy" provides guidance on the amount of parking which should be provided at new and existing developments. Local authorities should work to identify areas of under-provision. Where such areas are identified then new parking should be provided according to the best practice guidelines and the advice offered in SEStran's document "Cycling Infrastructure: Design Guidance and Best Practice".

4.7 Integration with Public Transport

4.7.1 While many of the towns examined as part of the review of urban cycle networks are small enough to assume that it would be reasonable for a cyclist to make a cross town journey by the one mode, it was recognised that, especially in terms of commuting, there is the ability for many cyclists to make multi-modal trips using public transport both across towns or between towns and employment destinations.

UCN – 9 Maintain consistent on vehicle cycle provision

4.7.2 On train and on bus provision for cycle carriage is currently limited across the SEStran area. For example it is noted that most Scotrail trains have a small amount of space available for cycles, however these can often be blocked by passengers and luggage, especially at peak commuter times. It is also understood that when completed the Edinburgh Tram will undertake a trial of carrying bikes on board.

4.7.3 SEStran are endeavouring to ensure that existing provision is consistent. Most Scotrail trains have a small amount of space available for cycles SEStran will continue to work with the train operator to ensure that this provision is consistently available.

4.7.4 SEStran continue work alongside public transport operators, firstly to ensure that the existing provision of cycle carriage facilities is maintained and steps taken to stop the misuse of the facilities and secondly, investigate where improvements in provision in on board cycle carriage can be made.

UCN – 10 Provide cycle parking at stations, park & ride and bus stops in line with best practice and promote usage

4.7.5 The rail stations and park & ride sites in the SEStran area are generally provided with cycle parking and/or cycle lockers. However, it is understood that usage of the facilities by cyclists can vary and that at park and ride sites can be minimal. There are still notable gaps in provision and more emphasis could be made to highlight that these interchanges can be reached by cycling not just by motor vehicle.

4.7.6 It is noted that some local authorities have taken steps to provide more on-street cycle parking facilities in relation to streetscape and urban design projects. These can often lead to cycle parking being provided in the centre of towns where there is a main traffic corridor or crossroads containing bus services. It is in these areas where people may be more inclined to leave their bikes while continuing the remainder of the journey by bus, given the passive surveillance provided by development and on-street activity. In addition to this many of these areas are likely to be provided with CCTV coverage.

4.7.7 It is considered more difficult to provide cycle parking at more isolated bus stops and other locations without adequate security. However it may be that there are some locations where cycle parking could be considered.

4.7.8 It is noted that designs for Edinburgh's tram network currently indicate that all non-central stops will be provided with cycle parking.

4.7.9 It is recommended that local authorities review key bus stops on major bus corridors, where multi-modal trips could be encouraged with a view to providing or improving cycle parking facilities.

4.7.10 It is further recommended that SEStran, in conjunction with the local authorities, examine ways in which to promote cycling to stations and park and ride sites.

4.8 Maintenance of cycling facilities

UCN – 11 Maintain cycle facilities to a high standard

4.8.1 "Cycling Infrastructure: Design Guidance and Best Practice" advises that cycling facilities require effective management and maintenance. Poor surfaces, overhanging vegetation, ponding, worn markings, broken glass, poor lighting and so on all affect cyclists more quickly and more seriously than motorists and are a continuous source of complaint. It is therefore essential that cycle tracks, both on and off road, are inspected and maintained on a similar basis to the rest of the road network.

4.8.2 To maintain on-road conditions for cyclists, attention should be focused on the condition of the strip of carriageway within 1.5-2m of the kerb. Off-road paths may be particularly susceptible to fly-tipping and can be rendered impassable to cyclists by broken glass.

4.8.3 After any prolonged period of inclement weather such as heavy rain, strong wind and snow, extra maintenance may be required. In particular cycle facilities are often afforded a low priority when conditions are icy and although it may not be possible in practice to grit off road cycle paths as regularly or as promptly as major roads they should not be forgotten.

4.8.4 The barrier and maintenance issue reporting system described in UCN – 4 is also relevant here.

4.8.5 It is recommended that SEStran, in conjunction with the local authorities, develops a monitoring and maintenance procedure for the strategic cycle networks and specific infrastructure. This should include agreed levels of condition in relation to surface condition, signing & markings, clearance of foliage & vegetation, lighting provision along with recording the level of vandalism and other anti social behaviour. In addition to this a regular inspection programme should be agreed and implemented. Consideration should be given to utilising the assistance of volunteers such as Sustrans Rangers, who are aware of maintenance standards, and are able to report problems as they arise.

4.9 Promotion, education, encouragement, incentives and enforcement

UCN – 12 Promote cycling and encourage a cycle friendly culture

4.9.1 The existence of good cycle infrastructure is not enough in itself, to attract large numbers of new cyclists. There are however, a large number of initiatives that are already being pursued by local authorities that have been shown to be successful and which SEStran should encourage.

4.9.2 Examples of these initiatives are shown below:

- **School and workplace travel plans** – under the guidance of a keen and committed travel planner and with support from senior management there are numerous examples of schools and workplaces which have achieved dramatic increases in the proportion of pupils and staff cycling to work.
- **Personalised travel planning (PTP)** – this is a targeted marketing technique which provides travel advice and information to individuals and can help them to identify a cycle route. In the SEStran area Falkirk Council (Larbert & Stenhousemuir area) is part of the Scottish Government's Smarter Choices, Smarter Places project which includes PTP and the provision of measures to encourage cycling. The outcomes of this project will be of interest to others in the SEStran region.

- **Cycle training** – cycle training for school children is offered by most councils and cycle training for adults is offered by some councils and/or various charitable organisations. Cycling Scotland offer specific Cycle Commuter Training that would help meets SEStran's aim of encouraging more commuter cycling (info@cyclingscotland.org).
- **Mentoring/"bike buddy" schemes** – these allow novice commuter cyclists to be paired with experienced commuter cyclists who can either offer advice or can accompany novice cyclists on their first commutes to help them build up confidence.
- **Special events** – councils or charities can work together to arrange and sponsor special events to promote the advantages of cycling and to suggest options to individuals. For example Spokes, the Lothian Cycle Campaign group, run a number of events throughout the year, including their annual Bike Breakfast which is supported by the city of Edinburgh Council
- **Information provision** – this may take a range of forms including maps showing on street and on segregated cycle paths, leaflets, posters and information online.

4.9.3 Related to the promotion of cycling and provision of information is the encouragement of a cycle friendly culture. This consists of ensuring that the facilities which have been provided are not made unusable by the inconsiderate behaviour of other road users. This applies particularly to the enforcement of waiting, loading and traffic speed restrictions. However, it must be recognised that considerate behaviour must cover all road users and cyclists themselves should be discouraged from discourteous and dangerous activities like ignoring red lights, riding on footways and riding with inadequate lights at night.

4.9.4 Given that the issues raised above are generally the responsibility of local authorities, the following recommendations are made relating to the use of existing systems and technologies.

4.9.5 It is recommended that in conjunction with examining the provision of cycle parking facilities at large centres of employment on and in the vicinity of the strategic cycle routes. Local authorities could also, through their travel planning efforts, seek to have businesses sign up to the Cycling Scotland's Cycle Friendly Employer Award scheme, where there are grants available to assist employers encourage cycling. It is proposed that local cycling officers and travel plan co-ordinators work with Cycling Scotland to identify potential local employers who could be approached over a period time to investigate per year. For larger employers SEStran should play a more strategic role in exploring how large organisations may be able to encourage cycling through a number of means, including; becoming cycle friendly employers; sponsoring routes; reviewing issues of employee health, environmental issues and corporate responsibility.

4.9.6 It is recommended that investigations are undertaken with regard to developing a similar facility to the web-based Transport for London Journey Travel Planner. This facility provides travel plan information for all modes of public transport but also provides users with map based information on walking and cycling routes along with indicative journey times. It is possible that SEStran may be able to assist with enhancing and upgrading existing similar web based systems, such as Traveline Scotland, to provide information on cycle routes and journey times. (See – http://journeyplanner.tfl.gov.uk)

4.10 Policy integration

UCN – 13 Integrate cycling policy into other policy

4.10.1 Cycling policy should be fully integrated at an early stage into all policy to which is has relevance. In addition the needs of cyclists should be considered from the outset in all planning applications and new building designs.

4.10.2 In relation to new streets and roads the proposed Designing Streets document will help elevate the position of cyclists within the user hierarchy where they will be only second to pedestrians in relation to the order in which designs consider all road users.

4.10.3 The Designing Streets document will become statutory government planning policy and therefore local authorities will have to take on board its contents. In relation to cycling the document aims to encourage cycling on road where possible, especially on low trafficked routes. Design standards are proposed that will improve road geometry for cyclists and there is an overall philosophy of removing the barriers to cycling during the design and quality audit process.

4.10.4 As discussed above there is also a need for cyclists to be given higher priority in relation to maintenance issues and local authorities should review how cyclists are catered for in terms of overall maintenance procedures.

4.10.5 In relation to other policies being pursued at both a national and local level, it important that SEStran and local authorities explore connections and access to potential funding through other sources. Cycling provides an obvious link to other areas such as Health, Sport & Leisure, Tourism, Environment and Sustainability issues. The improvement of infrastructure and the promotion of cycling do not necessarily always have to be funded or promoted solely through the use of local authority transport budgets. There will be opportunities where joint working between different local authority departments and other agencies will be able to achieve more benefits in terms of securing funding and applying resources to meet strategic aims.

4.10.6 It is recommended that local authorities examine the contents of the proposed Designing Streets document and review their own development guidelines and other policies in relation to cycling in accordance with the new design philosophy to ensure that cyclists are placed near the top of the road user hierarchy. This change in planning policy will ensure that the needs of cyclists are considered from an early stage in the design process and that appropriate infrastructure and facilities will be provided to develop new routes and create links into existing cycle networks.

4.10.7 It is recommended that local authority departments responsible for cycling ensure that other departments, agencies and stakeholders are contacted on a regular basis to investigate potential joint working on projects and initiatives that help develop and encourage cycling in the urban environment.

5.1 General

5.1.1 The following chapter provides an overview of ongoing works being undertaken in relation to urban cycling and there relationship with the underlying principles and recommendations outlined in chapter 4. In addition to this an action plan for investment has been provided for each local authority area based on the outcomes of the review and audit process undertaken as part of this study.

5.2 Ongoing work

5.2.1 Table 5.1 identifies the work which has been undertaken either as part of this study or currently being undertaken by some local authorities in the development of their strategic urban cycle networks.

Table 5.1: *Ongoing work within SEStran area*

Principle	Measure	Action
UCN – 1	Identification of key routes	Routes have been audited (high level) across all of SEStran's urban areas with populations over 10,000. Some local authorities are currently in process of upgrading or reviewing routes within their area.
UCN – 2	Identification priority routes for intervention	Routes identified and initial issues identified. Review of cycle count data ongoing to ensure evidence led decisions can be made using accurate data.
UCN – 3	Identification of physical barriers on cycle routes	Key routes identified and some major issues identified. Some local authorities undertaking barrier investigation work.
UCN – 4	Provide cyclists with a forum for reporting barriers and maintenance issues	Local authorities all have a maintenance reporting system although not specifically for issues relating to cycling
UCN – 5	Investigate the reasons underlying individual barriers	Key routes identified and some major issues identified. Some local authorities undertaking barrier investigation work.
UCN – 6	Use of CRISP approach to carry out route improvements	pre-CRIM work on key routes undertaken as part of route audits.
UCN – 7	Develop a signing strategy	Basic signing strategy developed as part of this study. Some local authorities investigating signing schemes and strategies

Table 5.1: *Ongoing work within SEStran area – cont*

Principle	Measure	Action
UCN – 8	Provide cycle parking in line with identified best practice	Cycle parking being provided in line with guidelines for new developments. Good provision at railway stations.
UCN – 9	Maintain consistent on vehicle cycle provision	SEStran continually working with transport operators
UCN – 10	Provide cycle parking at stations and stops in line with best practice	Cycle parking provision good at railway stations and new interchanges such as bus stations and park & ride sites.
UCN – 11	Maintain cycle facilities to a high standard	Standard maintenance activities are ongoing in each local authority.
UCN – 12	Promote cycling and encourage a cycle friendly culture	Promotion work is occurring in local authorities
UCN – 13	Integrate cycling policy into other policy	Currently undertaken but more work required.

5.3 Action Plan for Investment

5.3.1 In relation to the review and audit of the existing cycle network and facilities, Tables 5.2 to 5.9 provide details of areas that require to be addressed by SEStran and relevant local authorities.

5.3.2 The measures proposed are intended to address a list of key objectives relating to urban cycling. These objectives have been condensed into 7 main headings.

- Promote existing facilities to potential users
- Promote alternative and quiet routes to new/inexperienced cyclists.
- Promote/Develop new routes
- Improve existing facilities (physical improvements, safety improvements)
- Improve routes to transport links (stations, park n ride bus stops)
- Improve routes to centre of employment (encourage commuter cycling)
- Provide missing links between existing routes (connectivity)

5.3.3 Priorities for the action plan have been identified as;

- S – short term (0 to 2 years)
- M – medium term (2 to 5 years)
- L – long term (5 or more years)

Table 5.2: *City of Edinburgh*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
Edinburgh North	North Edinburgh Cycleway	Limited signing offering directional information or indication of off road cycle route.	Promote existing facilities	Review of existing signing, provision of new signing and entrance features to route. Approx 40 number	**£40,000**	M
		Some access points are provided with steps. No easy access for cycles. Wheel channels required.	Improve existing facilities	Provide Wheel channels Approx 20 number	**£20,000**	M
	Crewe Road South	Lack of cycle lanes on route linking major employment centres	Improve link to employment & provide missing link between routes	Provide cycle lane where width available 2km of cycle lane plus signing	**£3,000**	S
	East Fettes Avenue	Lack of cycle lanes on route linking major employment centres plus links to leisure routes and centres of attraction	Improve link to employment & provide missing link between routes	Provide cycle lane where width available 2km of cycle lane plus signing	**£3,000**	S
Edinburgh East A1 Links to Musselburgh & Newcraighall	A1 Links to Musselburgh & Newcraighall	Issue of cycling on Portobello Promenade still unresolved.	Promote existing facilities, Improve route to employment & school	Ongoing consultations, Promotion of traffic orders, Provision of signing	**£5,000**	M
	Daiches Braes	Off road/quiet street route available Linking Brunstane Station to Edinburgh Road	Improve existing facility	Upgrade of path from eastern end of Daiches Braes to link at Brunstane Mill Road	**£35,000**	M

Table 5.2: *City of Edinburgh – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
Edinburgh South East	A701 Liberton Corridor, A722 Gilmerton Corridor. A7 Dalkeith Road Corridor	Roads provided with extensive advisory cycle lanes or bus lanes. However, routes have been in existence for some time. Some issues with on-street parking	Improve existing facility	Review potential improvements to routes and measures to remove on street parking where possible.	**On going review**	S
	A701 Liberton Corridor, A722 Gilmerton Corridor. A7 Dalkeith Road Corridor	Edinburgh University is a major cycle trip generator with sites in the City Centre, Pollock Halls, Kings Buildings and Easter Bush	Improve existing facility and routes to employment (university)	Provision of signing strategy highlighting key routes to and between university sites	**Total - £5,000**	S
	George Square Area	The George Square/Bristo Square are has undergone recent redevelopment and as such the traditional road layout could be altered to provide more shared space area and priority for pedestrians and cyclists	Improve existing facility	Develop pilot project to introduce a bike boulevard through the area linking Chapel Street and Teviot Place to the Middle Meadow Walk and other cycle routes	Scheme can be progresses in tandem with universities master planning works. **£15,000**	M-L
Edinburgh South	Comiston Road Morningside Road	While Morningside Road is relatively narrow and has a high demand for parking. Long stretches of Comiston Road appear to be similar to other routes on the south of the city and cycle lanes could be provided.	Improve (extend) existing facility	Provide advisory cycle lanes. 4km of cycle lane plus signing	**Total - £5000**	S

Table 5.2: *City of Edinburgh – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
Edinburgh South West	Lanark Road	Lanark Road is relatively congested during peak times. The corridor does however benefit from two off-road routes. NCN75 (Water of Leith and Union Canal and the western section of the Union Canal	Promote alternative/quiet routes	Review of existing signing, provision of new signing and entrance features to route. Approx 30 number	**£30,000**	M
Edinburgh West	A8 Corstorphine Road	A8 corridor provided with bus lanes for most of its length. Can still be intimidating for some cyclists. Signing and promotion of adjacent routes combining off road paths and quiet streets required	Promote alternative/ quiet routes	Provide signing for alternative route. Approximately 20 sign locations. 10 requiring entry features	**£10,000**	M
	Calder Road	A71 provided with bus lanes but also caters for relatively high speed traffic. Provide cycle lanes at roundabouts. Promote adjacent routes at Broomhouse and Union Canal	Improve existing facility Promote alternative/quiet routes	Cycle lanes for east-west movements on A71 at roundabouts. Provide signing and entrance features for alternative routes.	**£20,000**	M

Table 5.2: *City of Edinburgh – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
Edinburgh North-West	A90 Queensferry Road	Route has been identified as having potential to improve upon existing bus priority and therefore providing benefits for cyclists on this busy route	Improve existing facility	Providing cycle facilities on the A90 possibly in conjunction with bus priority measures.	**>£30,000**	M
	A90 Queensferry Road	If bus priority not implemented. Signing of alternative off road and quiet routes should be improved	Promote alternative/ quiet routes	Provide signing for alternative routes	**£2,000**	L
Edinburgh Orbital	A720	No clear signing for cyclists other than follow 'Ring Road' signs	Promote existing facility/routes	Review existing signing with view to adding	**£3,000**	S
	Arterial routes crossing A720	Limited facilities for cyclists negotiating junctions at city bypass. (Calder. Lothianburn, Straiton, Lasswade, Gilmerton & Sheriffhall)	Improve routes to transport links and centre of employment	Review existing junctions in more detail. However measures could include improved signing and provision of cycle lanes.	**£10,000**	S
	Frogston Road	Existing road layout has central hatching but could be altered to provide cycle lanes	Provide/improve routes	Review width with view to providing cycle lanes. 4km of cycle lane plus signing	**£5,000**	S
A90, A8000	A90	As cyclists are now banned from A90 dual carriageway there is not alternative to the route provided between Edinburgh and South Queensferry. Sections of the route next to the dual carriageway are narrow and cannot accommodate more that one user at a time	Improve existing facility	Provide wider path with associated protection from main line traffic	**Cost unknown due to potential need for land take.** **Total sum likely to be in excess of £100,000**	M

Table 5.3: *Clackmannanshire*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
A985 & Stirling to Alloa Railway Line	Stirling to Alloa	Route between Manor Powis and Stirling still incomplete due to land negotiations	Provide missing link	Combination off-road and on-road route.	**Unknown**	M
	A907, A908, B9096	No obvious on-road cycle routes identified outwith NCN 76 and Devon Way	Promote new routes	Provision of cycle route signing and directions signs where appropriate	**£5,000**	L
	Izatt Street	Cycle links to NCN can be improved	Improve existing facility	Upgrade existing crossing to Toucan where local routes cross Izatt Street	**£20,000**	S
	NCN 76/Broad Street	Cycle links at NCN can be improved	Improve existing facility	Provide dropped kerbs where there are currently high kerbs and central reserve to be negotiated.	**£5,000**	S

Table 5.4: *East Lothian*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
A1	A1, A199	Long Distance advisory lane terminates at an 'off set' roundabout where bypass could be provided	Improve existing facility	Cycle Bypass with 'jug handle crossing points New cycle path and associated signing.	**£3,000**	S
	Heugh Walkway, Tranent to Prestonpans	Good off road facility but signing incomplete and no promotion of cycle usage	Promote existing facility	Develop signing strategy for route to encourage use by cyclists.	**£1,500.00**	S
	Meadowmill to Prestonpans Railway Station and Station to Prestongrange Road	Road width of B1316 would appear to be able to accommodate cycle lanes to improve access railway station	Promote new route. Improve routes to transport links	Provide advisory cycle lane where width allows. 4km of cycle lane plus signing	**£5,000**	S
	Musselburgh	Limited information on how cyclists are to access some of the existing cycle routes.	Promote existing facility	Signing strategy for key routes, including Pinkie Road, Inveresk Road and High Street.	**£3,000**	S
	Musselburgh	Good off road facilities provided to west of town but still some links required to tie into existing networks,	Develop new routes. Provide missing links	Continue to pursue links from Musselburgh Station to the Newcraighall area and the path network at Gilbertstoun Loan	Unknown – can be pursued though developer contri-butions	L

Table 5.5: *Falkirk*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
M9 Corridor	Bo'ness – Grangemouth A904	While some signing provided there appears to be some gaps in signing and improvements can be made to sign a cycle network	Promote existing facilities	Provide additional signing to existing key routes on A904 corridor	**£2,000**	S
	Grangemouth – Falkirk	Cycle facilities and route not clearly defined from Earls Gate Roundabout to Westfield Roundabout	Provide missing links	Provide improved signing on route, especially at Earls Gate. Also provide cycle lanes and crossing points to protect cyclists when negotiating large high speed roundabout with M9.	**£10,000**	M
M9/M876	Bellsdyke Road	Existing cycle facility not continuous.	Provide missing links	Provide new cycle lanes on western section of Bellsdyke Road	**£3,000**	S
	East – West route following River Carron	Well developed route provided to the east side of Falkirk. However from Corran Avenue to Carronvale Road the existing path network needs upgrading.	Improve existing facility	Improve quality of surface and develop signing strategy at access points and for route as a whole	**>£50,000**	S

Table 5.5: *Falkirk – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
M9/M876	Carron Road – Graham's Road	Falkirk appears to benefit from good east –west running route but limited links running north-south.	Promote and Improve existing facility	Provide signing indication north-south cycle network and associated direction signs. Provide Advance Stop Lines at 4 signal controlled junctions	**£10,000**	M
	Falkirk Wheel and adjacent Park n Ride site	Lack of suitable cycle facilities to link the two towns to the Larbert and the western edge of Falkirk	Provide missing link	Review ideal routes for inter-town links.	Costs likely to be extensive as existing road network not ideally suited for cycling. Therefore solution will relate alterations to existing road and possible new off road routes and the need for land negotiations.	L
	Bonnybridge & Denny to west side of Larbert/Falkirk Area	Limited signing for existing path networks. Lack of suitable cycle facilities to link the two towns to the Larbert and the western edge of Falkirk	Promote existing facility Provide missing link	Provide signing and where appropriate and review ideal routes for inter-town links.	Costs likely to be extensive as existing road network not ideally suited for cycling. Therefore solution will relate to new off road routes and the need for land negotiations.	L

Table 5.6: *Fife*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
A92, Fife Costal Route	Buckhaven	A range of cycle facilities, such as shard paths and advisory lanes provided but in some locations these facilities end and cyclist left with unclear message on how to proceed.	Improve existing facilities	Undertake more detailed audit work to identify barrier to cycling and improvements in signing with a view to developing a programme of small improvement works.	**£10,000**	M
A92, Fife Circle Line	Cowdenbeath	Unlike the other towns in Fife there does not appear to be the same level of cycle network or general signing in Cowdenbeath.	Promote new routes Improve existing facilities	Sign key routes within the town and promote as a cycle network Improve cycle facilities on key routes to town centre including to railway station	**£10,000**	S
M90, A907, Fife Circle Line	Dunfermline	Well developed cycle network with good signing, however some routes can be confusing where lanes and quiet streets provide short links between routes. Areas where width is a barrier and other locations where review of facilities, such as guard railing and the provision of dropped kerbs could improve facilities for cyclists.	Improve existing facilities. Improve routes to transport links & centres of employment	Undertake more detailed audit work to identify barrier to cycling with a view to developing a programme of small improvement works. Main issues relate to lack of signing and dropped kerbs at some locations.	**£20,000**	M

Table 5.6: *Fife – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
A92	Glenrothes	Well developed cycle network with good signing. Maximum use made of path network and good linkage on most routes.	Improve existing facilities. Improve routes to transport links & centres of employment	Undertake more detailed audit work to identify barrier to cycling with a view to developing a programme of improvement works. Unclear designation of path status at western section of Leslie Road and Queensway. Designate as cycle path to provide off road access to major employment area and links to NCN 766 Link up existing sections of path to provide route along the Formonthills Road/ Cadham Road corridor.	**£30,000**	M
A92, East Coast & Fife Circle line	Kirkcaldy	Well developed cycle network with good signing.	Improve existing facilities. Improve routes to transport links & centres of employment	Undertake more detailed audit work to identify barrier to cycling with a view to developing a programme of improvement works.	**£15,000**	M
Town of >10,000 with Potential large cycle population	St Andrews	Routes into town provided with cycle lanes where possible given width restriction. Limited opportunity in town to provide on road facilities due to road width and levels of parking. Some improvements in overall signing strategy required to highlight presence of cyclists to all users	Improve existing facilities. Improve routes to transport links & centres of employment	Undertake more detailed audit work to identify barrier to cycling with a view to developing a programme of improvement works.	**£15,000**	M

Table 5.7: *Midlothian*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
Dalkeith Area A7, A68	Dalkeith Town Centre	Some key routes within the town promoted as a cycle network (NCN1) but signing not obvious. Additional/ large cycle signs could assist in highlighting presence of cyclists where lanes cannot be provided. In other locations, (Lugton Brae) good facility ends but then no indication to cyclists on how to continue or positive signing of routes.	Promoter existing facilities Improve existing facilities	Review signing strategy for key routes, including NCN 1 and from Musselburgh Road to the A7 at Hardengreen. Provide ASL's at traffic signals. Providing signing on old A68 route and introduce and cycle lanes at refuges on Lauder Road.	**£10,000**	S
A701, A702	Penicuik	No obvious routes or facilities within town. Better promotion of a network required along with the links to commuting corridors and long distance leisure routes. (e.g Edinburgh and proposed Roslin to Peebles route)	Promoter existing facilities Improve existing facilities Provide (sign) missing links to long distance routes	Sign key routes within the town along with links to long distance facilities and A701 promote as a cycle network. Improve conditions for cyclists at junctions on A701 by improving sightlines and removing on-street parking.	**£10,000**	S

Table 5.8: *Scottish Borders*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
A7, A68	Galashiels Town Centre	Good signing provided for NCN1 and off road path networks. Very little provided on the road network to highlight the presence of cyclists, or to encourage and give confidence to new cyclists	Improve existing facilities – generally assisting with links to town centre and employment.	Sign key routes within the towns and promote as a cycle network. Improving conditions and routes for cyclists on the town centre gyratory, possible use of cycle lanes to guide cyclists through complex junctions. Promote use of existing off-road paths	**£20,000**	S-M
A7	Hawick Town Centre	No obvious routes or facilities within town with exception of some signing for local red and blue routes. Very little provided on the road network to highlight the presence of cyclists, or to encourage and give confidence to new cyclists	Improve existing facilities – generally assisting with links to town centre and employment.	Sign key routes within the towns and promote as a cycle network. Promote a cycle friendly town centre by encouraging slow traffic speeds and giving priority to cyclists.	**£20,000**	S-M

Table 5.9: *West Lothian*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
A89, A899	Broxburn A89, A899	Limited cycle facilities on A899 through town centre. Good facility on A89 but directional signing missing at key locations. Route also not overly clear in places due to ongoing development.	Improve existing facilities.	Clearly designate hard strip at A899 at Dechmont as cycle lane. Improve conditions for cyclists on A899 including provision ASL and examination of side junctions. Where appropriate remove on-street parking and improve sightlines Provide directional signing at A89/A899 roundabout to encourage use of good quality facility on A89.	**£25,000**	S-M
A89, M8 corridor. Airdrie Bathgate line	A89 & Bathgate town centre	Lack of any designated cycle network through town and limited indications of any cycle facilities or usage.	Promote new route/network Promote existing facilities	Provide signing on main routes through town centre. Improve conditions for cyclists at roundabout junctions and provide ASL at traffic signals. Promote path alongside Whitburn Road and Menzies Road for cycling.	**£15,000**	S-M

Table 5.9: *West Lothian – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
A89, M8 corridor. Airdrie Bathgate line	Armadale Town Centre	Lack of any designated cycle network through town and limited indications of any cycle facilities or usage. No assistance for cyclists to negotiate large roundabout at A89/A801, thus providing barrier to cycle commuting between Armadale and Bathgate	Promote new route/network Promote existing facilities Improve facilities/ provide missing link	Provide signing on main routes through town centre and improve signing for links to NCN 75 Provide short cycle lanes at refuges on West Main Street Improve conditions for cyclists by providing at ASL at traffic signals. Provide cycle facilities at A89/ A801 roundabout	**£50,000**	S-M
M9, A903	Linlithgow Town Centre	Lack of any designated cycle network through town and limited indications of any cycle facilities or usage.	Promote new route/network Promote existing facilities	Sign key routes within the town The network should include links to the Union Canal along with using the High Street, Mains Road and Falkirk Road, along with quiet streets such as Back Station Road, to Royal Terrace. North-South routes should Preston Road, Manse Road and Jordan Street.	**£5,000**	S

Table 5.9: *West Lothian – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
M9, A71, A899	Livingston	Good off road path network but little being done to promote its use by cyclists.	Promote existing facilities. Improve existing facilities. Provide missing link	Develop signing and promotional strategy to encourage cycling on paths. Key paths are North-south to west of A899. East-west routes through Dedridge, Ladywell/Eliburn and Knightsridge/ Deans railway path. Resolve issue of bridge parapet heights. Provide dropped kerbs at access points. Improve surfacing at missing links such as link to Nettlehill Road	Costs could be extensive, especially in relation to bridge parapet work. Signing and promotion of off road paths for cycling. **£20,000**	S-M
M9 A89	Livingston to Dechmont	Good cycle facility provided on A89 between Livingston and Bathgate and Dechmont to A8 and Edinburgh	Provide missing link	Pursue development of section of path between Deans Industrial Estate and Bangor Village Hospital Site	**£150,000**	L

Table 5.9: *West Lothian – cont*

Transport Corridor	Route	Issues Identified	Objective	Proposed Measures	Estimated Cost	Priority
M8	Whitburn Town centre	Lack of any designated cycle network through town and limited indications of any cycle facilities or usage. Improve conditions for cyclists at roundabout junctions and provide ASL at traffic signals. At side junctions car parking obscures sightlines.	Promote existing facilities. Improve existing facilities.	Provide signing on main routes through town centre. Improve conditions for cyclists at roundabout and side road junctions and provide ASL at traffic signals. Provide cycle lanes on sections of West Main Street and Longridge Road	**£15,000**	S-M

6.1 Provision

6.1.1 The provision of cycle parking in general will depend on the type of usage at any one location. "Cycling by Design" notes that cycle parking is generally required for 3 time periods:

short term: < 2 hours;

medium term: 2-12 Hours;

long term: > 12 Hours.

6.1.2 Short to medium term parking facilities are generally found and required at:

- public transport interchanges (railway stations, light rail stations, guided bus stations, coach stations, major bus stops);
- public buildings (central government, local government, health facilities);
- workplaces (public, private and voluntary organisations);
- education facilities (primary, secondary and further education);
- shops and shopping centres;
- parks and leisure facilities; and,
- places of entertainment.

At locations of this type a standard level of provision is perfectly acceptable.

Medium to long term parking facilities are generally found and required at:

- major transport interchanges (railway stations, coach stations, airports, ferry ports);
- student halls of residence;
- private residences;
- hotels and hostels; and,
- camping and holiday sites.

6.1.3 At these locations it would be anticipated that, in addition to the requirements for short to medium stay parking, designs should aim to provide:-

- a higher level of security;
- weather protection, and
- storage areas.

6.2 General principles

6.2.1 "Cycling by Design" recommends that, on general principles cycle parking should be:

- Conveniently located;
- Secure;
- Easy to use;
- Adequately lit;
- Well signed and, preferably,
- Sheltered.
- Each of these considerations is dealt with below along with a number of additional matters which should also be borne in mind.

6.3 Convenient location

6.3.1 Although the location of cycle parking will always be a compromise between the needs of cyclists and other users of a location, all sources agree that cycle parking should be located close to the entrances to buildings, preferably closer than the nearest car parking and absolutely not in dark corners or at the rear of car parks.

6.3.2 Transport for London (TfL) recommend that parking should be within 50m of a destination while the Cambridge Cycling Campaign (CCC) recommend a maximum of 25m for short stay uses (shopping for example) and 50m for long stay uses.

6.3.3 Finally TfL note that parked bicycles should not obstruct emergency exits or access to plant or equipment stores.

6.4 Security

6.4.1 Cyclists need to feel personally safe and secure as they approach cycle parking, lock up their bicycles and complete their journeys on foot. They also need to be confident that their bicycle will not be damaged or stolen while they are away from it.

6.4.2 All sources agree that the best, and most straightforward means of achieving this is through natural surveillance by positioning cycle parking so that people coming to and from the buildings walk past it and/or so that occupants of the buildings can see it from their windows. It should definitely not be tucked into out of the way corners or poorly overlooked areas of car parks.

6.4.3 CCTV may be necessary in certain contexts where natural surveillance is likely to be insufficient and if it is installed already then it should cover areas of cycle parking. Signposting of CCTV where it is present is a useful extra source of reassurance for users and deterrent to thieves.

6.5 Lighting

6.5.1 All sources agree that approaches to parking, the parking itself and routes from parking to any final destination should be lit.

6.6 Signage

6.6.1 If cycle parking is clearly and prominently located on the approach to a destination then signage to help cyclists find it may well be unnecessary. However, signs can still act as a valuable marketing and promotional tool. If parking is not immediately obvious on the approach to a building then signs to help users find it should be provided. However, if parking is hard to find because it is not conveniently located then relocation is a better approach than signposting.

6.7 Shelter

6.7.1 The amount of shelter from the weather which is required will depend both on the local climate and on the expected usage of the parking provided. For shared residential parking it would be anticipated that provision would usually be indoors in a location analogous to the garage in a private house. Covered provision would be the minimum required. For most commuter locations indoor provision would be good and covered provision should be more than adequate. For short-stay locations shelter is usually not required. At some locations providing a level of additional shelter may well increase levels of usage. Examples would include seafront, or other very exposed, spots.

6.7.2 Cover needs to be carefully designed to avoid limiting the natural surveillance of the site. Most modern designs incorporate bus shelter type clear panels and so do not limit surveillance. Indoor parking will be difficult to cover with natural surveillance and indoor parking would usually be combined with some system to ensure limited access.

6.8 Risks to other users

6.8.1 The most widely noted risk to other users from cycle parking is the potential risk to blind and partially sighted pedestrians and much of this risk can be avoided by placing cycle parking out of the way of direct pedestrian desire lines or other routes likely to be used by blind or partially sighted persons.

6.9 Level of Provision

6.9.1 SEStran's Regional Parking Standards provides local authorities with details on the level of provision of cycle parking at new developments. It is however more difficult to apply these levels of provision to existing streetscapes and developments given the design of the existing infrastructure.

6.9.2 Transport for London provide a rough guide for offices and work places that could be applied to larger offices and places of employment currently without or having a limited amount of cycle parking. These recommend parking for everyone who already cycles to work plus another 50 per cent (over-provision seems to attract cyclists so be prepared to keep an eye on the levels that result). After that, a good rule of thumb is to add another 20 per cent every time occupancy levels reach 80 per cent.

6.9.3 It may be that for some places of employment these spaces can be contained within the building in car parks or other areas, such as basements, however it is recommended that there still be an element of cycle parking being provided at the main entrances or on approaches to buildings to help highlight the presence of cyclists and promote cycling as a first choice travel mode.

6.9.4 In relation to shopping areas and high streets the level of cycle parking will be dictated by the streetscape and space available. However it is not unreasonable to expect that short stay cycle parking, such as two or three Sheffield racks, cannot be provided at intervals of around 200m. As mentioned earlier in the report, cycle parking of this nature could be located in conjunction with bus stop locations to assist in promoting both cycling and multi-modal trips.

7.1 Monitoring – cyclist numbers

7.1.1 Although it would be possible to measure the success of the Action Plan in terms of the amount of work done on various cycle routes the real measure of its success will be in the numbers of people actually using facilities to cycle.

7.1.2 SEStran wishes to achieve an increase in the proportion of people travelling to work by bicycle of 5% by 2023. Taking the 2001 census as a baseline this approximates to an average value of 6.3% across SEStran's urban areas. Census data is likely to provide the only definitive measure of the proportion of people cycling to work but data from the Scottish Household Survey could also provide some useful indications.

7.1.3 SEStran currently have 58 cycle counter sites across the partnership area. In addition to these some counts are already carried out by charitable organisations on a regular basis and it may be possible for SEStran to access this data, possibly by supporting the charities in their collection of the counts.

7.1.4 While fixed counter sites provide a very useful indication of cycle usage on existing routes there is limited work being undertaken on capturing data on other areas of the road and cycle network to both measure existing cycle use and monitor any increase when physical improvements or promotional activities are implemented.

7.1.5 Counts collected in the near future can be assumed to represent the level of cycling to work as reported in the 2001 census though, where more recent data is available, mainly for the City of Edinburgh, it may be advantageous to take the higher proportions reported in this more recent work. From this it will be possible to work out what overall level of cycling is likely to correspond to the desired increase in journeys to work and to obtain a measure of the ongoing success of the strategy.

7.1.6 Other methods of monitoring cycle numbers could be through surveys of a defined range of cycle parking facilities both private and on-street at specific times of the year.

7.1.7 A further method would be through collating and monitoring results from various organisations travel plans and travel surveys to examine if modal shift is occurring and where there may be potential to target more promotion and encouragement.

7.2 Monitoring – cyclist safety

7.2.1 A key measure in the assessment of cyclist safety is the number of cyclists killed and seriously injured each year. However, if the number of cyclists is rising it is possible for the number killed and seriously injured to rise as well even if considerable progress is being made to reduce the rate of incidents.

7.2.2 Data from "Road Accidents Scotland – 2007" indicates that there has been a reduction of around 60% over 10 years in the number of child cyclists killed or seriously injured on Scotland's roads. The corresponding figure for adults is 30%. It is generally recognised that there has been considerable progress made in reducing road accidents in recent years and it is likely that these rates of improvement cannot be maintained. It is suggested that a suitable measure might be the number of cyclists killed or seriously injured in SEStran's major urban areas per 1000 commuter cyclists. The population of these areas in 2001 totalled 1,085,850 suggesting that there were probably around 14,000 commuter cyclists. The number of cyclists killed or seriously injured per 1000 commuter cyclists can therefore be established and used as a baseline figure.

7.2.3 It is suggested that a rate of reduction in the number of cyclists killed or seriously injured per 1000 commuter cyclists of 20% per 10 year period is likely to be realistic.

7.3 Monitoring – cyclist security

7.3.1 Levels of cyclist security are difficult to monitor as the vast majority of incidents go unreported. Serious incidents are reported however and it is likely that these can be used as a proxy measure for the total level of security related incidents. Like accidents it is likely that incidents relating to cycle security (bicycle thefts and the like) will increase if the total number of cyclists increases. Personal security problems like muggings and personal attacks are probably more closely related to the incidence of similar events in the community as a whole and it would be hoped that improved security measures, lighting and levels of usage of the cycle network would help to alleviate any security problems and prevent any increase in the number of such incidents with increasing cyclist numbers.

7.3.2 It is suggested that suitable targets might be an overall decrease in the reported number of incidents relating to personal security and a decrease of 1% per year on the rate of security related incidents reported per 1000 commuter cyclists.

7.4 Monitoring – policy integration

7.4.1 Integration of cycling and other policy should occur on an ongoing basis. However, as it is easy to overlook possible avenues of integration it is suggested that every five years a more substantial review is undertaken to ensure that cycling policy is fully integrated into other policy areas. Regional Transport Strategies, Local Transport Strategies and SDPs and LDFs should tie in to the review of these.

7.5 Review of Action Plan

7.5.1 It is suggested that the progress on the Action Plan is reviewed on a five yearly basis. The first of these reviews will be in 2014 by which time data from the 2011 census should be freely available.

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