EssexWorks.
For a better quality of life

Essex Local Highway Panels (LHP): A Members' Toolkit

July 2012

Local Highway Panels Toolkit – contents

1. Foreword from the Cabinet Member for Highways and Transportation

As elected members, we all know that highways issues are of critical importance to our residents and communities. Local highways panels are a new way of better connecting the local area with the Highways Authority.

Local Highways Panels (LHP's) will be a new forum for members to come together to jointly consider and prioritise elements of highways spend within their local district or borough boundaries. They are being formed in recognition of the local role and knowledge of elected members and to promote greater partnership working between county and district/boroughs. LHP's will be an important mechanism for ensuring there is proper engagement with local bodies and representative groups.

We believe that members have an important role to play in representing their communities, defining and prioritising the schemes for investment, and in engaging with local bodies such as parish and town councils. LHP's will increase the voice of members at both county and district level and we believe this is a positive step forward for partnership working.

This document sets out how certain important services delivered by the County Council (as Highways Authority) can increasingly be programmed and prioritised through the governance and oversight of the new Local Highway Panels. This guide highlights key areas that will be relevant to LHP members. Through the operation of the panels it is foreseen that many elements of the Highways Improvements capital programme will be influenced and steered by the new localism agenda. This is intended as a live document that will evolve over time.

It should be noted that there is not a one size fits all solution for every part of the Highways Service. The individual characteristics surrounding service delivery, operation and procurement of Highways Services must be understood in order to appreciate the range of implications associated with operating at a community level.

I hope you find this guide useful.

Cllr Derrick Louis
Cabinet Member for Highways and Transportation
Essex County Council

2. Introduction and purpose of this toolkit

This toolkit is intended a guide to members on the general principles governing Local Highway Panels, the terms of reference, budgets and the delivery of schemes.

The guide contains a number of Topic Papers which are intended to be informative and to aid decision making by members. The Topic Papers are not definitive but provide general guidance on the types of measures that the LHP's will typically be required to consider for approval and prioritisation.

Officers will endeavour to provide detailed reports and data to support proposals that are put forward for the LHP's for consideration.

In setting priorities for local scheme selection, Members will need to have due regard to the responsibilities of the Council. These will include, amongst other things: its statutory duties, standing orders and financial regulations.

The scope of works that can be prioritised by the Panel is broad and will include the following service areas:-

- Traffic Management improvements
- Tackling congestion
- Safer Roads (including casualty reduction)
- Public Rights or Way improvements
- Cycling schemes
- Passenger Transport improvements
- Minor improvement schemes

Decision making through the Panel will rest with Members who will be responsible for engaging with district/borough/city Members; including inviting them to join the Panel and to work in partnership on prioritisation.

The Panels will need to determine the frequency of meetings to maintain momentum between formal meetings. Where possible, the Panel will need to approve design alternatives and they may choose to empower the Chairman to comment on the behalf of the Panel where decisions are needed between formal meetings.

Responsibility for parking schemes has been delegated by ECC to the 2 Parking Partnerships and the Panels will not therefore be able to promote parking restrictions unless they are intended to address a serious safety or congestion issue.

The collision reduction criteria used for both parking schemes and safety engineering schemes is 4 or more injury collisions within 100m and within a 3-year period.

This document will be periodically reviewed and approved by the Cabinet Member for Highways and Transportation.

3. Funding & Budgets

The overall budget for Localism will be approved and allocated to the Panel as part of the normal budget procedure. The budget allocations have been made on an equitable basis and therefore each District/Borough does not receive an equal amount. A formula has been used to divide the funding in such a way that it takes account of a number of influences including road length, population and road type.

The budgets available for 2012/13 are shown below:

Proposed allocation of Integrated Transport (Improvement) budget to the Highways Panel – 2012/13

	Percentage split (%)	Allocation per district (£)
Basildon	12.50%	£ 1,000,000
Braintree	10.19%	£ 815,578
Brentwood	5.62%	£ 449,876
Castle Point	5.72%	£ 457,351
Chelmsford	12.50%	£ 1,000,000
Colchester	12.50%	£ 1,000,000
Epping Forest	8.74%	£ 699,550
Harlow	6.09%	£ 487,315
Maldon	5.00%	£ 400,000
Rochford	5.35%	£ 427,808
Tendring	9.88%	£ 790,481
Uttlesford	5.90%	£ 472,041
Total	**100%**	**£ 8,000,000**

The new Local Highway Panels may be able to carry forward money from one year to the next. This recognises that it may not be possible to implement a full programme of schemes this year and also so that where a Panel wishes to implement a scheme that exceeds its budget, it can do so utilising budget from 2 years allocation.

In addition to the above, a revenue element that supports the Highway Rangers service (covered later) will be included within the Highways Panel prioritisation remit. For 2012/13 this equates to £130k per annum for each District/Borough area (c£1.56M County-wide).

Where the Rangers service can provided for less than £130k, the LHP will be able to reallocate any residual balance to other, revenue, schemes including traffic/speed surveys, ad hoc requests for minor items (signs and lines requests) and other traffic management schemes; subject to the same governance as the capital schemes.

4. Terms of reference and Governance

Terms of Reference

All local County members and an equal number of district/borough/city members, unless it is agreed otherwise, will:

- Prioritise and make recommendations for capital and/or minor revenue projects/schemes to ECC Cabinet Member for Highways and Transportation within the allotted budget.
- Have regard to the advice from ECC officers on relevant statutory/duty of care requirements.
- Oversee and set priorities for schemes funded through the localism process and the work of the Highways Ranger Service.
- Monitor the delivery of the agreed programme and raise issues and concerns through agreed procedures.
- Consider any other Highways and Transportation matter referred to the panel from time to time by other council constituted bodies, panels or groups.
- Make recommendations to ECC Cabinet Member for Highways and Transportation to amend targets or discretionary policies and/or amend budget allocations between programmes if necessary to meet local priorities.
- Take a lead role in liaison with town/parish councils

Governance

- The LHP will be chaired by a County Member, District, Borough or City Member, as agreed by the Panel members.
- Decision making to be agreed by LHP and clearly minuted to be actioned.
- Meetings may be in public or private but reports of each meeting must be presented to the Locality Board (or other standing locality arrangement) in that district/borough.
- ECC Cabinet Member for Highways and Transportation will be minded to accept the advice and prioritisation agreed by the LHP subject to the Highways Authority's

Statutory Duties/Duty of Care Obligations consistent with current legislative requirements and regulations.

- It is the expectation of ECC that all schemes promoted by the Panels will comply with ECC policies and standards and in the spirit of partnership working decisions will be largely reached by consensus or exceptionally by a clear majority vote.

5. Scheme Selection

A list of historical requests has been complied for each district and this forms the basis of the 5-year programme. The majority of these proposals have arisen from requests from Members (County and District), Parish/Town Councils, residents and local resident or action groups.

In most cases, there is some degree of justification for the request (e.g. to improve safety or facilities for road users) but in some cases the danger may be perceived rather than real. Officers can provide the Panel with information to aid the decision making process including up to date collision history and speed data.

In prioritising schemes for progression, the Panel will need to have due regard to a number of factors, including:-

- How does the scheme improve safety?
- Will the scheme reduce congestion?
- Will the scheme improve air quality (reduce CO_2 emissions)?
- Does the scheme represent good value for money?

This list is not exhaustive and Officers will provide more detailed guidance and advice for each scheme. A scoring matrix is being developed for this purpose to assist with the scheme selection process.

Once a scheme has been selected by the Panel, Officers will need to carry out a 'high level' validation to make sure that it is achievable. This will include things such as checking the highway boundary details and compliance with design guidance.

If a scheme passes the validation stage and there is budget available, the scheme will then be passed to the design team for progression. The Panel will then receive regular and realistic updates regarding progress and timescales.

Inevitably, it is the case with some proposals that there will be unforeseen circumstances that only come to light as detailed design progresses and the Panel will be notified as soon as possible where this occurs as it may impact on the design, timescales and overall cost. Similarly, schemes involving consultation will inevitably attract objections and, in some cases, it will not be possible to resolve these or they may delay delivery of the scheme.

The highways capital improvement scheme, which is prioritised and overseen by the LHP, forms part of the County Council's overall strategy as defined by the Local Transport Plan (LTP).

The LTP3 was approved by Essex County Council Cabinet in June 2011 and contains the aims and objectives for transport in Essex. The LTP is submitted to government as required by the Transport Act 2000. In return the government makes capital funding available to local authorities for maintenance and integrated transport. There is no set way in which the County Council is expected to spend the funding but it is expected to produce local implementation programmes which reflect countywide and localist agendas. The Local Highway Panel is one way of ensuring a strategic approach with regard to local priorities and acceptability.

The LTP3 sets out a number of high level outcomes for transport as follows:

- Connectivity – Provide reliable connectivity for Essex communities and international gateways to support sustainable economic growth, regeneration and wellbeing.
- Lifestyle – reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology
- Safety - Improve safety on the transport network & enhance & promote a safe travelling environment
- Assets - Secure and Maintain all transport assets to an appropriate standard ensuring the network is available for use
- Sustainable Communities - Provide sustainable access & travel choices for Essex residents to help support strong & sustainable communities

6. Indicative costs and timescales

Where relevant, indicative costs and timescales are shown in the Topic Papers. Wherever possible, Officers will provide individual cost estimates for the Panels that relate to specific scheme proposals.

The indicative costs and timescales shown in the Topic Papers are for guidance only. It is the case that where a scheme involves public consultation, it is impossible to give accurate timescales as, the outcome of any consultation process is of unknown outcome. Where objections are received these will need to be resolved in consultation and agreement with the Cabinet Member. Where these are of a complex nature, it may be necessary to modify the proposals or, in some cases, abandon them completely.

7. Cabinet Member Approval

As stated above, it is the responsibility of the Panels to prioritise and make recommendations for proposals and schemes to the ECC Cabinet Member for Highways and Transportation.

Recommendations from the LHP's will be presented to the Cabinet Member for Highways and Transportation for sign-off.

8. Secretariat and Support

The frequency and location of meetings is to be determined by the LHP but it is anticipated they will be held 4 times a year linked to the budget planning cycle.

- Meetings may be in public or private but the LHP must present periodic reports to the Locality Board (or other standing Locality arrangement) for each District/Borough area.

- Notes will be produced together with recommendations for the Cabinet Member for Highways and Transportation.

- It is proposed that district councils will provide the secretariat and arrange meetings for LHP's, unless they have agreed that ECC should act as the lead.

LHP's will also be supported by 4 Local Highways Liaison Officers from ECC. These are:

- Natalie Szpigelman Basildon, Rochford & Castle Point, natalie.szpigelman@essex.gov.uk
- Jon Simmons Chelmsford, Maldon & Epping, jon.simmons@essex.gov.uk
- Rob Macdonald Colchester, Tendring & Braintree, rob.macdonald@essex.gov.uk
- Rissa Long Brentwood, Harlow & Uttlesford, rissa.long@essex.gov.uk

Wherever necessary, specialist support will be invited to attend LHP's, including representation by Essex Police.

9. Topic Papers

1. Crossing Facilities
2. Cycling Schemes
3. Speed Limits
4. New Pedestrian Footways
5. Safety Engineering
6. Traffic Calming Measures
7. Rural Traffic Calming Measures
8. Traffic Regulation Orders
9. Mini Roundabouts/Junctions
10. Passenger Transport Improvements
11. Public Rights of Way Improvements
12. Signs and Road Markings
13. Road Safety
14. Safety Cameras & Enforcement
15. Parking Restrictions
16. Highway Rangers
17. Vehicle Activated Signs
18. 20mph Speed Limits and Zones
19. Traffic Signals

Topic Notes

Local Highway Panel - Topic Paper 1
Crossing Facilities

1. Typical Problems

One of the most common problems faced by pedestrians is finding a safe and convenient place to cross the road. Problems faced by different age groups can vary enormously – children and adults can generally cross at ease in locations that are inaccessible to the elderly and disabled.

2. Scheme Investigation

When investigating the need for pedestrian facilities the following would normally be investigated:

- What is the attraction – schools, playgrounds, the Post office or library etc?
- What is the speed limit and what are the actual vehicle speeds – these can differ and will affect what type of measures could be used?
- How much traffic uses the road and how many pedestrians cross it, are these predominantly at certain times – e.g. school hours?
- Are there focus points (desire lines) where pedestrians prefer to cross?
- What is the collision history on the road?
- What is visibility like for pedestrians and drivers? Would a driver be able to see a pedestrian about to cross the road and would they be able to stop safely?

This list is not exhaustive but gives an indication of what needs to be considered.

3. Typical measures

Facilities for pedestrians vary widely depending on the scale and type of problem. A location that is used infrequently on a minor road with low traffic speeds may just require a pram crossing with perhaps some tactile paving for blind and partially sighted road users.

At the other end of the scale, a busy junction with heavy traffic flows and speeds may require significant engineering measures involving traffic signals which could have a major impact on the capacity of the road and delays on the road network. This could lead to traffic using another route, perhaps a nearby residential road?

Other types of facilities for pedestrians include pedestrian islands in the middle of the road, Zebra crossings, Pelican and Puffin crossings, Toucan crossings (for pedestrians and cyclists) and Pegasus crossings (for horse riders).

4. Things to consider

Again, this list is not intended to be exhaustive but, when considering what type of crossing facility is needed, the following need to be considered:

- What is the conflict (traffic and pedestrian volumes)?
- What are the traffic speeds and the speed limit (if the speed limit is 30mph but mean speeds are 35mph or higher, a Zebra crossing would not be permitted as it would be unsafe)?
- What is the collision history for the road?
- Could a crossing facility be accommodated and would it need to be sited outside residential properties?
- Would it be safe to install a crossing where pedestrians presently cross or further away from where they want to cross? If so will they actually use it?
- Are the footways wide enough?
- Are there any bus stops, accesses and junctions nearby?

5. Costs and timescales

The following costs are indicative only and include design and supervision costs:

Pram crossing with tactile paving	£2,000
Pedestrian refuge/island	£8,500
Zebra crossing	£25,000
Controlled crossing (Puffin)	£140,000

Costs can vary enormously from site to site depending on factors such as:

- Is there a nearby power supply?
- Is the street lighting adequate?
- Does the footway need to be widened?

In terms of timescales, a pram crossing with tactile paving could be installed in a couple of days, once it has been through the approvals process. A pedestrian island would take a little longer as the central beacon may need to be illuminated. A Zebra crossing would typically take up to 12 months from inception to delivery and would include consultation with nearby residents who may object to having it outside of their properties due to loss of parking or light pollution.

Local Highway Panel - Topic Paper 2
Cycling Schemes

1. Background

Cycling has traditionally been seen as a lycra-clad male dominated past-time undertaken by slightly strange people. Since the introduction of the cycling demonstration towns, the success of the British Cycling team and the advent of mass participation rides such as the Sky Rides, cycling has become more acceptable and normal, enjoyed by all.

For the past four years ECC has offered 'Bikeability' fully funded training to all year six pupils in the County, as well as making funding available for 'learn2ride' and adult training. Currently ECC are running an Eco-race in any school that wishes to take part in partnership with the Bike It Officers (BIO). This scheme rewards schools that have a lower car use as a means of travel to school, with the pupils recording their journeys themselves. We have two part-funded BIO in Essex, one based in Basildon and the other based in Colchester but are now working in other areas and with other age groups.

ECC has a good relationship with Sustrans and the Cyclist Touring Club (CTC) and both organisations still work with us to increase the number of cyclists and improve the cycling environment. Sustrans lead on the National Cycle Network of which several routes come through Essex. We have a good working relationship with the Sustrans Regional team who help develop new routes and support both the physical network and volunteer rangers. The CTC have Right to Ride representatives in each area who lobby for improved cycling conditions on the road and often attend the cycling forums.

There are two community groups set up in the County for cyclists Cycle Colchester and Cycle Chelmsford. Both groups are attended and run by the cycling community, local colleges and other interested parties. We continue to support these groups with revenue funding to promote cycling, arrange adult training and other promotional and engagement activities.

Since the disbanding of the Safer Journeys to School team two years ago we have been working with different schools throughout Essex to help them put in appropriate cycle parking and facilities. In a few instances we have supported the set-up of maintenance facilities in schools.

In recent years ECC has supported the bike industry delivering in the communities by providing funding to set-up, expand or equip cycling hubs through several social enterprises and companies.

2. Typical Problems

Cycling levels are growing year on year leading to more requests for safe cycling infrastructure or improvements to the existing network. We continue to promote cycling which leads to increased demand for cycling provision, whether that is hard infrastructure, cycle parking or grants towards cycling initiatives.

The problems with the infrastructure include:-

- There are gaps in it
- It is not of sufficient quality to be adequate and in some cases fit for purpose.
- We do not maintain cycle ways to a high standard and leave them to deteriorate over time. This means that some of the older routes require reconstruction.
- Some key corridors are not provided
- Signing is inadequate or incorrect
- Secure parking facilities required

3. Schemes Investigation

Schemes are investigated at request or as part of an area wide review of the cycling facilities. Both Colchester and Chelmsford have a Cycling Strategy for the improvement of the cycle network and are included in the relevant Borough Councils Local Development Frameworks as supplementary documents. In other areas the existing network has been mapped and missing gaps identified.

Each scheme has been investigated for:

- Continuity of network
- Quality of network
- Links to other schemes
- The likely number of trips generated
- The type of scheme against the likely user groups
- Strategic fit within the corridor and linking with other modes
- Likelihood of use (including cycle parking)
- Future trip generation and keeping people cycling (social enterprises and school schemes)

This list is not exhaustive but gives an idea of what is considered during evaluation.

4. Typical Measures

Typical measures can include:

- New off-road cycleway (new build, tarmac)
- New off-road cycleway (conversion of existing footway)
- New off-road cycleway (rural, unbound surfacing)
- Toucan crossings
- New on-road facility
- Reconstruction of existing cycleway
- Signing
- Cycle Parking
- Provision and equipping cycling hub

5. Things to Consider

Local requirements of cycling campaign groups, Sustrans, CTC and other on-going national campaigns, such as The Times “Cities fit for Cycling” campaign.

Most cycling facilities will fit with the above criteria and be within current policies, however there are other considerations such as cost, land acquisition, available funds, other schemes on-going in that area and the training and promotional side of cycling.

6. Costs and Timescales

Taken from last year’s costs these costs are indicative:

- Tarmac route 3m wide over existing 2m path approximately 2km £83,000 (£41.50 per linear metre, 3m wide)
- Toucan Crossing £170,000
- Unbound 2m wide hardened verge with edging approximately 1.6 km £28,000 (£17.50 per linear metre, 2m wide)
- Upgrading of existing 3m footway and conversion to cycleway, including two tables, signing, lining and eight new dropped kerbs approximately 500m long £91,000
- Signing review, design and installation (small town) £26,000

Timescales will depend on whether land is required or not. Generally most schemes can be designed, consulted on and installed within one fiscal year. Larger schemes that require land or carriageway reconstructions will take anything up to two years plus to complete.

7. Further Information:-

Designing for Cyclists: A guide to good practice
Essex Cycling Strategy
Traffic Management Strategy
Essex Sustainable Travel Strategy
Essex Rail Strategy
Cycle England Design Guides and Final Report
The Times Manifesto for cycling

Local Highway Panel - Topic Paper 3
Speed Limits

1. Typical Problems

Speed limits are for all road users' safety. They set the maximum legal speed that a vehicle should travel at given ideal driving conditions. It is vital for motorists to know what the speed limit is for the road they are on in relation to the vehicle they are using.

It is the driver's responsibility to be aware of the signs and drive within the prescribed maximum speed.

It is often the case that residents' perception of a speeding problem is not supported by speed data. This could be for a number of reasons: a minority of drivers exceeding the speed limit will often create the perception that all traffic is going too fast; if the properties through a small rural village are all very close to the road, this will often result in residents feeling unsafe for no other reason than the fact that they are close to the traffic and any traffic noise is amplified because of the proximity of their properties.

2. Scheme Investigation

In determining the appropriate speed limit for a given section of road, a number of factors need to be considered:

- Does the road have a system of street lighting? If it does, it will generally have a 30mph speed limit. Where streets are lit and have a different speed limit, the road requires a Speed Limit Order and speed limit repeater signs must be located at regular intervals.
- What is the road environment? Is it built-up or rural?
- What are the actual vehicle speeds? If traffic travels at 40mph, it is unlikely that simply putting up signs for 30mph will bring about any meaningful speed reduction.

NB A Speed Limit Order (SLO) is the terminology used that covers the statutory process that is used when implementing any form of traffic control, or restriction, that is legally enforceable. The statutory process includes a formal consultation period (usually 21 days) during which anyone can make written representations i.e. objections, to the proposals. Any objections received need to be considered before deciding on a final course of action. This might include implementing the scheme, modifying the scheme or abandoning it altogether.

3. Typical measures

Measures that may be considered in aiding compliance with the speed limit are signage, carriageway markings or physical items:

- Signage:
  - Signs to be located at each end of the restriction on both sides of the carriageway. 30mph Repeaters are only permitted in areas without street lighting.
- Carriageway markings:

    - Dragons teeth.
    - Roundels (30/40 mph etc).
    - Central white lining (if carriageway width exceeds 5.5m).
    - Edge of carriageway lining.
    - Centre lines and central hatch lines.
- Physical measures:
    - Build-outs.
    - Central islands/refuges.
    - Road humps.
    - Rumble-wave/textured surfacing.
    - Vehicular activated signs (VAS).

4. Things to consider

Before considering a speed restriction or methods to aid compliance the following factors should be noted:

- 30mph is the default limit in urban areas, usually due to the provision of street lighting.
- Limits of 30mph and above without a system of street lighting are subject to a Speed Limit Order and are dependant on factors such as the quality of the road, width, layout (bends and junctions) and collision statistics.
- In some instances 20mph limits or 20mph zones can be considered – see section X
- Carriageway markings:
    - Dragons teeth only apply at the start of a speed limit as part of a gateway measure.
    - Roundels may only be located adjacent to a speed limit sign.
    - Central white lining and central hatch lines only apply to carriageway widths above 5.5m.
    - Edge of carriageway lines can be different widths.
    - All road markings have ongoing maintenance issues.
- Physical measures:
    - These can only be implemented in areas with street lighting to the exception to this is vehicular activated signs.
    - Build-outs and islands can only be implemented where a minimum road width of 3m can be maintained.
    - Road humps and rumble-wave surfacing cause noise and vibration therefore proximity to properties must be considered -strong consideration should be given before installing such features on regular bus routes and routes used regularly by emergency services.

5. Costs and timescales

The following costs are indicative only and include design and supervision costs:

Signage	£230 per sign/post
Carriageway markings e.g. lines/hatching	£2/metre

Dragons teeth	£150 per marking
Roundels	£95 each
Build-outs/islands	£5000 per island
Road humps	£2,000 per hump
Vehicular activated signs (Solar Powered)	£7,500.00

6. Further Information

Essex Speed Management Strategy (http://www.essexhighways.org/Policy-and-Strategy.aspx)

Local Highway Panel - Topic Paper 4
New Pedestrian Footways

1. Typical Problems

One common problem faced by pedestrians is finding a safe and convenient walking route to and from their destination.

2. Scheme Investigation

When investigating the need for a footway the following would normally be established:

- What are the existing pedestrian flows and desire lines?
- What are the local amenities – school, playing fields, church, post office, bus stops? Where are they located?
- What is the speed limit and what are the actual vehicle speeds and traffic flows?
- What is the extent of the highway available? Would a compulsory purchase order or land acquisition be required?
- What is the accident history on the road?
- What is the existing topography? Would a new footway be feasible?
- Is there a cycling demand?

This list is not exhaustive but gives an indication of what needs to be considered.

3. Typical Measures

Proposed footways should ideally be constructed with a minimum width of 2.0 metres, however in exceptional circumstances this can be reduced.

Consideration should also be given to crossing facilities and how the footway proposals tie in with the existing network.

4. Things to Consider

Please refer to section 2.0 above

5. Costs and Timescales

Costs and timescales can vary enormously from site to site depending on factors such as:

- Length and width of footway proposed
- Level of design and supervision required
- Drainage, existing street furniture, vehicular accesses and dropped crossings
- Any alterations/diversion of utility companies equipment (pipes and cables etc buried underground)
- Land acquisition being required

Any objections received during a consultation period will also significantly affect delivery timescales.

Local Highway Panel - Topic Paper 5
Safety Engineering

1. Typical Issues

Properly designed and maintained roads reduce collisions and casualties. Prioritising improvements is based upon risk and budgets resulting in the most cost effective schemes being selected.

2. Scheme Investigation

Casualty reduction schemes are developed in consideration of the following factors:

a) Problem sites including those where there have been 'four or more injury collisions in a three year period within a 100 metre radius'. This is known as 'the intervention criteria'.
b) Desktop study of the site to see if there is a pattern to the number and type of incidents.
c) Assessment as to whether the proposed measure (s) will have the desired casualty reduction benefit and to ensure best value for money.

3. Typical measures

The proposed remedial measure will depend on the nature and severity of the problem identified. Typical schemes include signing and lining improvements to make hazards more conspicuous, pedestrian crossing facilities, junction signalisation, traffic calming schemes, junction realignment etc. In order to be effective in reducing the number and/or severity of collisions, it is imperative that the proposed remedial measures directly address the identified problem.

4. Things to consider

This list is not intended to be exhaustive but, when considering what type of remedial measure is needed, the following need to be considered:

- What is the collision history for the road/site? Does it meet the intervention criteria?
- What is the conflict (traffic and pedestrian volumes)?
- Would the proposed remedial measure address the problem?
- Could the proposed remedial measure create other safety problems?
- Could the cost of the scheme be justified against the safety benefit it would bring?

5. Costs and timescales

Costs can vary enormously from site to site depending on the proposed remedial measure.

In terms of timescales, minor signing and lining schemes could be delivered within a 2-3 month period. Schemes requiring construction work such as junction realignment, pedestrian

crossings, road widening or traffic calming features would typically take between 6-12 months from inception to delivery (including an allowance for statutory consultation where required).

Local Highway Panel - Topic Paper 6
Traffic Calming Schemes

1.0 Typical Problems

Where there is a history of isolated collisions, or anti-social driving in a definable area these incidents may be reduced by the implementation of traffic calming measures.

2.0 Scheme Investigation

When investigating the need for traffic calming facilities the following would normally be investigated:

- Buses – journey times may be increased and certain measures will make the journey less comfortable for passengers. Some vertical measures (i.e. speed humps) may cause a bus service to be re-routed or withdrawn.
- Emergency services – physical speed reducing measures may affect response times of emergency vehicles.
- Public opinion – can be supportive, but in some cases resistance from residents has required removal of measures.
- Cyclists – can find some traffic calming measures uncomfortable.
- Motorcyclists – can find some measures difficult to negotiate.
- Equestrians – have reported that some measures, such as pinch points have an adverse affect on their safety.
- Disabled or older occupants of vehicles, particularly those with existing back conditions can find measures more uncomfortable than able-bodied persons.
- Local environment – traffic calming measures change speed profiles and in some cases lead to higher emission and noise levels. They may also have an affect on urban design or local distinctiveness.
- Would traffic calming in one road cause vehicles to divert to other nearby roads? This would merely shift the problem elsewhere and should be considered as part of the feasibility of any proposal.

This list is not exhaustive but gives an indication of what needs to be considered. As a general rule, bus operators oppose and object to measures such as speed humps due to problems associated with passenger discomfort, increased journey times and damage to vehicles.

3.0 Typical Measures

There are a range of traffic calming measures available and in some cases multiple measures may be implemented in one area. The measures to be implemented should be determined following a full investigation of the site and its users (see above), and may include but not be limited to the following measures.

- Speed restrictions (have to be in accordance with the Essex Speed Management Strategy covered under Topic Note 3)
- Speed humps and cushions (only allowed on local roads)

- Rumble devices and overrun areas
- Narrowings and chicanes
- Gateways and entry treatments
- Roundabouts
- Vehicle activated devices
- Other traffic calming elements, including:
    - Speed limit roundel carriageway markings
    - Coloured carriageway surfacing
    - Contrasting carriageway surface textures
    - Carriageway hatching
    - Countdown signs (to speed limits – require DfT authorisation)
    - Road closures
    - Traffic Regulation Orders, including:
        - Road closed to vehicular traffic by physical means
        - No-entry order but accessible to vehicles on a restricted basis (emergency services, certain times of day, etc).
        - No-motor vehicles order but accessible to non-motorised highway users including cycles and horse drawn vehicles.
        - Buses only
        - Buses and cycles only
        - Buses, cycles and taxis only
        - Cycles only
        - Access only
        - Width restrictions to physically close the road to certain size vehicles
    - Planters and bollards

4.0 Things to Consider

This list is not intended to be exhaustive but when considering what type(s) of traffic calming is needed, the following need to be considered:

- What is the aim of the scheme (i.e. what is the problem?), and what traffic calming measures can be used to achieve this aim?
- What is the conflict (what types of highway users are there and what are their volumes?)
- What are the actual vehicle speeds and what is the limit for the road(s)?
- What are the personal injury collision statistics and are they to be addressed by the traffic calming?
- Will any of the measures affect vehicle crossings?
- Will any of the measures affect cyclist or equestrians?
- Will visibility be affected?
- Will street lighting need to be upgraded (certain standards apply)?
- Will a bus route be affected (including school buses)?
- Will the emergency services be affected (will the feature be on a route to a hospital, police station, fire station or emergency vehicle depot?)?
- Will utilities' equipment (i.e. pipes and cables buried underground) need to be relocated or modified?
- Will residents support the scheme?
- How will the scheme impact on the environment?

- What is the extent to be included in the scheme? Should additional areas be incorporated into the scheme (i.e. where traffic will be displaced onto other nearby roads)?

5.0 Costs and Timescales

Given the assortment of features which could be implemented the following costs are reflective of single uses of the features and include design, supervision and legal fees.

Speed restriction (short extension to existing 30mph zone)	£7,500
Speed humps of varying types (average cost per hump)	£2,000
Rumble device (artificial cattle grid in granite for rural area)	£4,500 - £10,000
Chicanes (two build outs on each approach to a village)	£35,000
Two village gateway entrances	£12,500
Mini roundabout	£25,000 - 50,000
Vehicle activated sign	£7,500
Carriageway speed limit roundels (each)	£250
Coloured surfacing (village gateway)	£2,500

Again, these costs may increase if any of the following factors have an affect:

- What is the size of the area affected?
- Does the street lighting need to be upgraded?
- Will the existing drainage be adequate (kerb-to-kerb speed humps will obstruct the run-off of surface water)?
- Is a Traffic Regulation Order necessary?
- Extent of traffic management required in the implementation of the works?
- Will any utilities' plant need to be modified or relocated?
- Will land need to be acquisitioned?

Timescales are dependent on the nature and scope of the scheme. The most minor schemes can be completed on site in two to three days and major schemes could take many months. It is important to bear in mind that some schemes require certain legal processes, which can take many months to complete and may even determine whether or not to proceed with a proposal. With larger schemes, extensive public consultation is required with residents, emergency services and bus operators etc.

The outcome of any consultation can never be taken for granted as perceptions of a problem can vary enormously. Complex objections take to resolve, may necessitate changes to the original design or, in extreme cases, abandonment of the scheme altogether.

Local Highway Panel - Topic Paper 7
Rural Traffic Calming Measures

1. Typical Problems

The most common problem faced when considering the installation of any rural traffic calming measures is that local communities are often concerned about traffic growth. The local authority will need to balance the need for traffic management against the desire to maintain the rural character. Other problems that may need to be considered before deciding a suitable traffic calming feature within a rural environment would be the strategic hierarchy of the road in question, as well as who are the users of the route - e.g. Agricultural/emergency vehicles.

2. Scheme Investigation

When assessing the need for rural traffic calming measures, the following points should also be considered:

- What is the classification of the route? – Strategic hierarchy/conservation area.
- What is the speed of vehicles in comparison to the speed limit?
- How many and what type/size of vehicles use the road? e.g. Agricultural vehicles/emergency vehicles/buses etc….
- What is the accident history on the road?
- What is visibility like for the road users? Would a driver be able to see pedestrians/cyclists clearly when approaching the calming measures and would they be able to stop safely?
- What is the current layout and are there any concealed access points?

This list is not exhaustive but gives an indication of what needs to be considered as every site is unique.

3. Typical Measures

Measures that are often used for traffic calming will vary depending on the scale of the problem. Typical measures used to manage vehicle speeds would be:

- Chicanes
- Speed Tables
- Gateway Features
- Dragons Teeth road markings
- Cattle Grids
- Width Restrictions
- Vehicle Activated Signs (VAS)
- Priority Signing
- Speed Cushions
- Carriageway Narrowing
- Rumble Strips
- Weight Limits
- Traffic Regulation Orders

4. Things to consider

When considering what type of rural traffic calming measure to use, the following points need to be considered:

- Who will need to be consulted? Residents/Local Businesses etc……..
- Where is the highway boundary and does the Local Authority own the land?
- Are any surveys required? Speed/Traffic volume/Topographical
- Collision history for the road?
- What impact will the measures have on the environment?
- Maintenance of the calming measure and the surrounding area?
- Visibility approaching the traffic calming feature?

5. Costs and timescales

The following costs are indicative only and include design and supervision costs:

Chicane/Priority access	£5,000 (per island)
Speed table/cushions	£6,000 (per site)
Gateway features	£12,500 (2 village gateways)
Traffic Regulation Order (TRO)	£1,500
Road Safety Audit (RSA)	£1,000 (each)

Costs can vary enormously from site to site depending on factors such as:

- Is there a nearby power supply?
- Is the street lighting adequate?
- Does any additional work need doing? – e.g. drainage/road widening

In terms of timescales, despite the construction process for traffic calming measures which can be from 2-21 days, consultation of the scheme will need to be considered before any work is started. A typical consultation can take from 2 months to complete whereas, the TRO process will take over 6 months from inception to delivery. This will include a consultation period with nearby residents and other users who may wish to object to the measures.

6. Further Information

Essex Speed Management Strategy (http://www.essexhighways.org/Policy-and-Strategy.aspx)

Local Highway Panel - Topic Paper 8
Traffic Regulation Orders

1. Typical problems

A Traffic Regulation Order (TRO) is a legal Instrument by which Essex County Council as the traffic authority implements most traffic control on its network. A TRO is designed to regulate, restrict or prohibit the use of a road, or any part of the width of a road, by vehicular traffic or pedestrians. A TRO may take effect at all times or during specified periods and certain classes of traffic may be exempt from a TRO e.g. for access, loading or unloading. TRO's are legally enforceable.

Speed limits are set by the Department for Transport and different speed limits apply for cars, vans and towing vehicles on different types of road. A limit of 30mph usually applies to all traffic on all types of roads with street lighting unless there are signs showing otherwise. A Speed Limit Order (SLO) is similar to a TRO i.e. it is a legal instrument that ensures that the speed limit can be enforced.

Essex County Council may set speed limits for the roads for which it is responsible in accordance with Department for Transport guidance and The Essex Speed Management Strategy 2005.

In Essex, a comprehensive review of speed limits has been undertaken and changes to some are programmed for implementation.

2. Scheme Investigation

When investigating the need for a TRO/SLO it is important to identify the issue that is causing concern to determine the most appropriate response. A TRO/SLO may be implemented for one or more of the following purposes.

- Avoiding danger to persons or traffic
- Preventing damage to the road or to buildings nearby
- Facilitating the passage of traffic
- Preventing use by unsuitable traffic
- Preserving the character of a road especially suitable for pedestrians or horse riders
- Preserving the amenities of the area through which the road runs
- For any of the purpose specified in of the Environment Act 1995 in relation to air quality

3. Typical measures

TRO's may be introduced to facilitate one way systems around town centres or to restrict the use of a road by certain vehicles by applying a weight, width or length restriction. However the presumption is that all roads are open to all traffic unless restricted as they are all maintained by the public purse. TRO's can be permanent, temporary or experimental.

4. Things to consider

ECC has a functional route hierarchy which identifies the role that the different classifications are expected to perform.

A TRO must not have the effect of preventing pedestrian access at any time, or preventing vehicular access more than eight hours in 24 to premises on or adjacent to the road (unless agreed by the Secretary of State for Transport).

Both Permanent TRO's and SLO's are subject to The Local Authorities' Traffic Orders (Procedure) (England and Wales) Regulations 1996 which impose various legal requirements prior to making an order these include

- Publishing a notice of the proposal in a local newspaper
- Allowing potential objectors 21 days for representations
- Taking other steps to ensure adequate publicity is given to those likely to affected by any provision of the order
- Holding a public inquiry if the TRO would prohibit loading or unloading of vehicles (1) at all times, (2) before 07.00 hours, (3) between 10:00 and 16:00; or (4) after 19:00, or if the passage of public service vehicles would be restricted

5. Costs and timescales

The following costs are indicative only and include design and supervision costs:

Speed Limit	£3,000
7.5t weight restriction or banned turn	£2,000 - £4,000

The above costs include signs, design and advertising. The actual costs can vary enormously from site to site depending on factors such as:

- The size of the scheme
- Do the signs require lighting is there an electrical supply in the vicinity
- The number of signs required

On average a TRO or SLO can take between 9 and 12 months from when it is agreed in principle and funded, to implement. It is a lengthy procedure due to the statutory periods of advertising and consultation and the requirement to consider any representations made.

Local Highway Panel - Topic Paper 9
Mini Roundabouts/Junctions

1. Typical Problems

Road users often complain that they experience problems when turning into and out of side roads. Typically, this may be because the volume of traffic prevents them from doing so, queuing traffic blocks their exit or they consider that it is dangerous because of the speed of traffic on the main road or poor visibility caused by parked vehicles.

2. Scheme Investigation

When investigating the need for junction improvements the following would normally be investigated:

- What are the speed limits – the speed limit on the side road might be different to the speed limit on the main road?
- What are the actual vehicle speeds? These will affect what type of measures can be considered.
- What type of junction is involved – 'T' junction, crossroads or staggered crossroads?
- What is the accident history of the junction?
- Are there existing warning signs and road markings at the junction? Are they adequate?
- What is visibility like from the side road? Would a driver be able to see an approaching vehicle and vice versa?
- If the visibility is poor, can it be improved easily (cut back vegetation or remove parking)?

This list is not exhaustive but gives an indication of what needs to be considered.

3. Typical Measures

Mini roundabouts would only normally be considered if the existing traffic flow from the side road is significant; the road has a maximum speed limit of 30mph; there is adequate visibility; there are no physical constraints (e.g. nearby private accesses, bus stops and pedestrian crossings) and has no more than 3-arms ('T' junction).

Where simple junction improvements are not possible, more complex engineering measures may need to be considered such as traffic signals.

4. Things to Consider

Again, this list is not intended to be exhaustive but, when considering what type of junction improvements are appropriate, the following need to be considered:

- What is the collision history at the junction?
- What are the traffic speeds and the speed limit?

- What sort of junction is it ('T' junction, crossroads or staggered crossroads)?
- Are there any physical constraints at the junction?
- What are the traffic flows and where do pedestrians (and how many) cross the junction?
- Does the safety issue relate to parked vehicles?
- Are the existing signs and road markings adequate?
- What is the impact of changing the junction on other road users (pedestrians and cyclists)?
- The introduction of mini roundabouts can have significant unwanted implications for traffic flows, opening up alternative routes for motorists.

5. Costs and Timescales

The following costs are indicative only and include design and supervision costs:

Mini Roundabout	£25,000 - £50,000
Traffic signals	£230,000

Costs can vary enormously from site to site depending on factors such as:

- Is there a nearby power supply?
- Is the street lighting adequate?
- Does the road alignment need to change?

In terms of timescales, a mini roundabout will take up to 12 months from inception to delivery but a signalised junction would take longer, typically 15 – 18 months.

Local Highway Panel - Topic Paper 10
Passenger Transport Improvements

1. Typical Issues

ECC has responsibility for schemes aimed at making sure buses run on time in busy areas and at busy times, bus stop infrastructure (not bus shelters) and bus stations / clustered bus stops

2. Scheme Investigation

Potential bus priority and congestion relief schemes are generally identified through discussions with bus operators. Initiatives aimed at improving bus punctuality are in place with some operators and there is work going on to build on and expand these.

The majority of potential bus stop infrastructure schemes arise from specific requests and, in prioritising sites and selecting which improvements to undertake, factors to consider are:

- the frequency of the bus service – high service frequencies could mean high usage levels, whilst very low frequencies can mean that people will arrive at the stop very early to avoid missing the bus and would greatly benefit from a shelter, especially in rural areas with a high proportion of elderly people living nearby.
- the number of people using the stop – taken from observations, anecdotal information or bus operator data (although this can often only be broken down to fare stage rather than stop level).
- the age profile and any known mobility impairments of passengers – areas with a higher proportion of elderly people will generally generate higher bus passenger numbers.
- nearby facilities – bus stops near amenities such as doctors' surgeries, shopping parades and sheltered accommodation would generally generate higher bus passenger numbers.

3. Typical Measures

Typical Bus Priority and Congestion Relief schemes can include:

- Bus lanes – taxis and motorcycles are also generally permitted to use Essex bus lanes.
- Bus only (or limited vehicle) turns at junctions.
- Bus gates – short sections of highway restricted to buses.
- Junction improvements to facilitate easier navigation by large vehicles.
- Traffic signal priority measures.

Bus stop infrastructure improvements can consist of a variety of measures, such as:

- Constructing raised kerbs to enable easy bus access.
- Installing passenger shelters.
- Installing real-time passenger information (telematics) signs.

- Installing bus stop poles and flags.
- Installing timetables and timetable cases and information boards with local travel information on.
- Review of bus stop location e.g. on safety grounds.
- Providing a hardstand passenger waiting area.
- Constructing a safe access route to a bus stop, e.g. a footpath across a grass verge or dropped kerbs to provide a crossing point.
- Bus stop or stand clearways (yellow bus cages) – only installed when there is a persistent parking problem which prevents buses safely accessing the bus stop.

Works as part of interchange schemes typically include elements such as:

- Provision of bus stop poles, flags, timetable cases, shelters, raised kerbs and real-time information signs.
- Provision of covered and / or secure (key access) cycle storage.
- Rail passenger waiting shelters.
- Bus turning facilities.
- Pedestrian walkways and safe access routes.
- Staff and passenger toilets and waiting areas.
- Environmental improvements.

4. Things to Consider

The nature of bus priority and congestion relief schemes means that the business case for each one will be unique, and it is probably best to look at them in terms of the benefit they provide compared with their cost.

ECC has a standard suite of products for bus stop infrastructure improvements which should be used wherever possible to help maintain a consistent image across the County.

The varied ownership of passenger shelters can mean that the predominant type of shelter in an area is not a standard ECC product, and under these circumstances it may be more appropriate to use the predominant model.

In rural and village settings, residents can have a very keen interest in personally maintaining the local passenger shelters. It is therefore recommended that when shelters are installed in such areas, the Parish or Town Council is approached to identify whether they would prefer to or be willing to take on the ownership and maintenance responsibility for the new structure.

Shelters should include bench seating, but ensure there is sufficient space for shelter by a wheelchair user. Consideration should also be given as to whether lighting is needed: solar power is generally used if there is not a nearby power supply.

5. Costs and Timescales

Scheme costs for priority and congestion relief schemes can be anywhere from £20,000 to several hundred thousand pounds and upwards.

The following costs for bus stop infrastructure improvements are indicative only and include design and supervision costs:

- Bus Stop Pole and Flag: £400 - £500
- 2-bay metal framed passenger shelter: £3,000 (excluding lighting, which is approx £300 for mains and £1,400 for solar)
- Wooden framed bus shelter: £7,500 - £9,500 (excluding lighting, which is approx £200 for mains and £1,800 - £2,300 for solar)
- Raised access kerbs: £2,500 per stop
- Dropped kerbs: £2,500 per pair
- Real-time information sign: *system currently out to tender, cost to be confirmed*

Consultation is not statutorily required, as shelters are permitted development, provided that they do not have any advertising or parking restrictions specifically relating to them. Bus stop / stand clearways do not require Traffic Regulations Orders, however, consultation is undertaken wherever there is likely to be an affect on local residents, i.e.where a project will not provide a like for like replacement of an existing asset. Three weeks is generally allowed for replies, before a final decision can be made.

Once a decision to proceed is made, works generally require a lead time of 6-8 weeks, especially if a passenger shelter is required.

For smaller bus interchanges, the costs and timescales will be similar to those for individual bus stops, but for larger interchanges, the costs could be several hundred thousand pounds. A typical rail interchange improvement scheme could cost upwards of £150,000.

Local Highway Panel - Topic Paper 11
Public Rights of Ways of Way Improvements

1. Typical problems

Public Rights of Way consist of footpaths, bridleways, restricted byways and byways. Footpaths carry pedestrian rights only, bridleways also carry equestrian and bicycle rights, restricted byways include non-mechanically propelled rights (i.e. horse and carriage) and byways carry full vehicular rights as well as pedestrian, bike and equestrian rights. They are commonly unsurfaced and requirements can be dependant on underlying geology

The most common problem is that of accessibility to different users in differing locations and scenarios. These could range from surfacing urban paths to provide all-year round use to providing large bridges to link up gaps in the PROW network that may have existed for many years due to insufficient resources in the past or replace bridges which are not fit for the PROW they serve, e.g. narrow footbridges on Cycle/Byways or in areas where wheelchair/pushchair access is required. Improvement works may be needed to comply with the Equalities Act 2010

2. Scheme Investigation

When investigating a scheme the following would normally be considered:

- Is there an “attraction” – i.e. historic landmark, landscape feature, school, playground, or Post office etc?
- Is there a history of complaints?
- Importance in the network such as links connecting up bridleways
- Change of usage type or numbers following nearby development e.g. a new housing estate
- Numbers and types of user (pedestrian, equine, cyclist etc)
- Tie-ins to other County policies such as reducing vehicle school-run numbers or the road safety policy
- Implications of the Equality Act and other relevant legislation including wildlife legislation.

This list is not exhaustive but gives an indication of what needs to be considered.

3. Typical measures

The provision of some form of levelling and surfacing, commonly tarmac (blacktop) for urban footpaths and alleys and road planings capped with granite dust for byways or bridleways in more rural settings. Boardwalks may be needed in wet or boggy habitats. Alternatively large scale bridges to link up PROW, both internally in Essex and across the County boundary. Alternatively the creation of new routes and associated infrastructure may be needed to link up routes.

4. Things to consider

Again, this list is not intended to be exhaustive but, when considering Public Rights of Way schemes the following points are considered:-

- Landowners and any existing private access rights
- Local access/user groups such as local horse-riders or livery yards.
- Maintaining a balance between the differing needs of all legitimate users, especially on byways
- Environmental Agency stipulations– e.g. the EA may require larger spans or higher soffit level (level of the bottom beam of the bridge) for flood alleviation reasons.
- Environmental considerations e.g. Sites of Special Scientific Interest (SSSI) or protected species habitats such as badger setts or otter holts.
- Landowner access approval (possibly seasonal around harvests) and vehicle access on both sides of the river/crossing is critical for bridges.
- Is it more cost effective to divert PROW to a better route/existing nearby bridge rather than build a new structure? Diversions require public consultation and formal objections could be raised possibly requiring a Public Enquiry.
- Medium footbridges (8-10m) are standard design; larger bridges will be more bespoke. Structures over 10m are going to need increasingly significant foundations as the bridge span increases.
- Definitive line of Public Right of Way.
- Maintenance and longevity of design – Timber rots over time and bridges with timber beams generally won't last longer than 20 years. Treated/Painted steel beams although more expensive will last significantly longer.
- Visual/aesthetic impact e.g. blacktop/granite dust or colour of any painting on steel elements on bridges.

5. Costs and timescales

The following costs are indicative only. Works commonly need to be done with dryer ground conditions, e.g. over summer months.

Urban blacktop	£20/m^2
Rural planings +.granite dust	£15/ m^2

A medium (8-10m) footbridge in an area of easy access to both sides, approx £20,000 and around 2 week construction time.

A large byway/bridleway structure with piled foundations could cost £100,000-£150,000+ with a programme of up to 2-3 months.

Costs may vary enormously depending on access, drainage issues, size of structure, loading requirements, aesthetic design.
Access issues may be seasonable (i.e. across fields after harvest).

Local Highways Panel - Topic Paper 12
Signs & Road Markings

1. Typical problems

Anything placed on or in the highway must be there under the appropriate power, licence or consent. There is a vast range of signs in use on British roads, from directional signs and posts, to signs warning of possible hazards ahead, and regulatory signs instructing motorists to perform certain actions. The appropriate size and placement of signs as well as identifying whether a sign requires to be supported by order can be found in the Traffic Signs Regulations and General Directions 2002. Approval from the Department for Transport must be sought for signs that are not approved for use.

Non-authorised signs constitute an obstruction of the highway. Typically, most of the signs that are allowed for use on public highways can be found in the Highway Code.

2. Scheme Investigation

In determining the appropriate signage or carriageway marking for a given section of road, a number of factors need to be considered:

- All signage and markings must conform to the Traffic Signs Regulations and General Directions 2002
- What are we trying to achieve and what is the problem?
- Does the road have a system of street lighting?
- What is the road environment? Is it built-up or rural?
- Will there be any visibility issues (especially vegetation in rural areas)?
- Can measures be taken to reduce proliferation of signage?
- Will pedestrian safety be compromised?
- Are there any associated maintenance issues?
- Is there enough space available to safely install the signage?

3. Typical measures

Measures that may be considered in implementing signs and lines for speed limits, parking or road safety/information:

- Speed limits:
  - Signs to be located at each end of the restriction on both sides of the carriageway. Repeaters are only permitted in areas without street lighting unless the speed limit is 20 mph.
  - Roundels may be marked adjacent to the signs unless the road is subject to 30mph by virtue of street lighting.

- Parking: (undertaken by the Parking Partnerships)

- Adequate signing (where applicable) to ensure that the restriction cannot be misinterpreted (times and days of week etc).
- Appropriate lining (yellow lines or white 'boxes').
- Disabled Parking bays.

- Road safety/information:
  - Regulatory Signs
  - Directional signs
  - Advance warning signage.
  - White carriageway markings(edge of carriageway, centre lines and Give Way lines etc).
  - Tourism Signing (to provide directions to a venue – not to advertise it)
  - Town/Village name signs and Gateways

4. Things to consider

Before considering the implementation of signs and lines the following factors should be noted:

- What is the issue we are trying to address?
- Requests for Parking restrictions will need to be fed through to the Parking Partnerships for approval and prioritisation Parking restrictions have to follow a legal process, advertising and consultation. In the first instance, requests should be sent to ECC Highways for validation.
- All signage should be located at least 450mm back from the edge of the carriageway and where it is on a footway, must be a minimum of 2.2m above ground level and not impede the passage of pedestrians including those using buggies or push chairs (a minimum passage width of 1.2m is required).
- Where possible signs should be combined to avoid clutter.
- Ensure that the signs are located to give good, unimpaired, visibility and that they do not in themselves impair the visibility of road users.
- All carriageway markings and signs will have ongoing maintenance issues.
- Disabled Parking Bays - Must be assessed and referred by Social Services Department.

5. Costs and timescales

The following costs are indicative only and include design and supervision costs:

Signage	£230 per sign/post
Carriageway markings	£2/metre
Regulatory sign with supporting traffic Regulation Order	£2,000 - £4,000 (small scheme)
Tourism signing to venue	£1,500 - £5,000 (depends on number of signs and locations/road classification)
Disabled parking bay (Advisory)	£400

Local Highway Panel - Topic Paper 13
Road Safety

1. Statutory Responsibilities

The Road Traffic Act 1988 (Section 39) places statutory responsibilities on Local Authorities in respect of Road Safety. The Road Safety team helps ECC fulfil these as detailed in paragraph 2 below. The Act places statutory duties on Local Highways Authorities to:-

1. Carry out studies into accidents arising out of the use of vehicles on roads or parts of roads, within their area and for which they are the responsible highway authority
2. In the light of those studies, take such measures as appear to the authority to be appropriate to prevent such accidents, including the dissemination of information and advice relating to the use of roads, the giving of practical training to road users or any class or description of road users, the construction, improvement, maintenance or repair of roads for the maintenance of which they are responsible and other measures taken in the exercise of their powers for controlling, protecting or assisting the movement of traffic on roads.
3. In constructing new roads, take such measures as appear to the authority to be appropriate to reduce the possibilities of such accidents occurring when the roads come into use.

2. The Essex Casualty Reduction Board (ECRB)

The Essex Casualty Reduction Board (ECRB) was formed in December 2005 as part of a response to an increase in killed and seriously injured (KSI) casualties.
ECC Road Safety staff work closely with their ECRB partners to deliver a prioritised programme of activity for casualty reduction. The board consists of Essex Police, Essex Fire and Rescue Service, the Highways Agency and the East of England Ambulance Service with The activities and interventions are data led through the research and analysis of the teams' Data Analyst.

3. Priorities and Targets

There are currently no government targets for casualty reduction, however the ECRB has set itself targets for 2020 against the baseline average between 2005-2009, with challenging annual indicators:-

Category	Baseline (2005-2009 average)	Current level (2010)	2020 % reduction target (using 05/09 baseline)	2020 Target
All KSI	840	662	33%	563
Slight Casualties	4371	3440	60%	1748
Powered Two Wheeler KSI	214	171	25%	161
Child and Young People KSI	132	88	50%	66
Pedestrian KSI	125	113	50%	63
Drink drive KSI	62	36	50%	31
Cyclist KSI	56	52	50%	28
Young Car Drivers KSI	180	131	75%	45

(KSI = Killed or Seriously Injured)

In addition, Essex Highways has the following Key Performance Indicators (KPIs):

- KSI's – expected performance is 1.5% reduction on 2011 outturn
- Slights – expected performance is 4% reduction on 2011 outturn
- Satisfaction with road safety locally- increase on 2011 figure

4. Activities

A coordinated delivery programme of road safety activities and interventions is agreed annually with ECRB in accordance with the prioritisation. The County Road Safety Team deliver the following areas of work:-

- 'No Excuse' - an umbrella campaign that encompasses the following key issues: Seat belt wearing, Mobile phone use whilst driving, Speeding and Drink Driving. A programme of high visibility 'Surround A Town' events target key towns with enforcement and education.
- Driver/Rider re-education courses for offenders – offered as an alternative to prosecution, on behalf of Essex Police. Self funded by referral's course fees;
- Bikeability cycle training - national cycle training scheme funded by the Department for Transport covering Primary and Secondary School children from 10 to 14 years.
- School and Sports Partnerships also receive funding - ECC instructors train 5,000 of the 9,000 children trained annually in Essex.
- Adult engagement/Interventions prioritising Powered 2 Wheelers (P2W) and Young Drivers, activities include:
    - Scooter days to target 16 – 25 year old moped riders
    - P2W training subsidies to target groups, 100 x 16 – 25 year olds and 150 riders over 25yrs on high powered bikes
    - Roadside 'Pit Stop' events on high P2W KSI routes and urban areas
- Education to provide information to parents and children at key ages. Activities include:

    - In Car Safety
    - Community Safety events ‘Crucial Crew’ for year 6 pupils.
    - Theatre in Education
- Road Safety engineering schemes
- Safety Audits

5. Costs

The costs associated with road safety campaigns will vary enormously and will often require input from outside agencies, such as Essex Police or Essex County Fire and Rescue Services.

Over the years, ECC has purchased or leased a number of specialist road safety display units and vehicles that are used during driver/rider training and awareness events.

Local Highways Panel – Topic Note 14
Safety Cameras & Enforcement

1. Typical problems

One of the most common reasons that residents contact Essex County Council regarding highways is to complain about the speed of traffic either in the road where they live or often outside the school that their children attend.

2. Scheme Investigation

New safety camera locations are considered on a site by site basis. The Essex Casualty Reduction Partnership considers the accident history, speeding problem and community concern along each stretch of road.

Once a stretch of road has been deemed suitable for camera enforcement, the camera is positioned carefully to minimise adverse environmental effects on nearby residential properties - while at the same time ensuring that it is highly visible to road users. Locations must also meet all operational and health and safety requirements.

There are three types of camera in use - fixed speed, mobile speed and red-light cameras. At present there are approximately 101 fixed speed cameras, six mobile safety camera vans (which operate seven days per week) and 26 red-light cameras in Essex, Southend-on-Sea and Thurrock.

3. Typical measures

Safety cameras have been used in Essex as part of the Road Safety Strategy since the early 1990s. Currently there are 99 fixed speed cameras, 26 red-light cameras and 2 mobile camera vans operating in Essex, Southend-on-Sea and Thurrock.

Safety cameras are used to help deter speeding and jumping red-lights on roads which have a casualty and speeding problem. Safety cameras are just one of the many road safety measures used in Essex, Southend-on-Sea and Thurrock to help reduce casualties.

Essex also have two average speed cameras systems, these are used to regulate speed and flow along a stretch of road and calculate the average speed of vehicles that are travelling the route, prosecuting those who exceed the speed limits.

There are four different types of safety cameras operating within Essex:

- Fixed speed camera sites – used at sites where collisions are clustered around a particular point or location

- Mobile speed camera sites – used at sites where collisions are scattered along a length of road or where enforcement is needed at specific times of the day or

year.

- Average speed camera sites (fixed) – this type of enforcement has the effect of calming the speed over a longer distance and can be used at sites where a significant number of collisions are scattered along a length of road and for major road works enforcement.

- Red-light camera sites – used at traffic-light junctions where collisions are recorded because of vehicles failing to comply with a red traffic light.

4. Things to consider

New safety camera locations are considered on a site by site basis. The Casualty Reduction Partnership considers the accident history, speeding problem and community concern along each stretch of road.

Once a stretch of road has been deemed suitable for camera enforcement, the camera is positioned carefully to minimise adverse environmental effects on nearby residential properties - while at the same time ensuring that it is highly visible to road users. Locations must also meet all operational and health and safety requirements.

5. Costs and timescales

The following costs are indicative only and include design and supervision costs:

Fixed safety or red light camera	£40,000 (per site)
Average speed cameras (depends on length of road and number of cameras)	£300,000+

Local Highway Panel - Topic Paper 15
Parking Restrictions

1. Background

Essex County Council will only consider requests for parking restrictions on the grounds that of congestion, safety (meet the ECC collision Safety Scheme criteria) or are funded through Section 106 schemes. All other requests are the remit of the Essex Parking Partnerships. The new service is council-run and is a partnership between Essex County Council and two lead councils: It is in two areas; the North Partnership is led by Colchester Council and the South Partnership by Chelmsford Council. The aim is to run parking enforcement to a fair and consistent standard in order to provide the same level of service but in a more efficient way. The two Partnerships are responsible in each area for the on-street Civil Enforcement Officers ("traffic wardens"); the parking enforcement process together with challenges to, and payments of, parking penalties ("parking fines") plus administration of the parking restrictions ("yellow lines") and the management of the scheme.

2. Typical Problems

Essex County Council receives hundreds of requests each year for the provision of new restrictions, changes or removal of existing restrictions and requests for residents' parking.

These requests are made for a number of reasons:-

- Obstruction to private accesses or through traffic
- Obstruction to sight lines from junctions and accesses
- Parking problems caused by commuters and local employees, particularly in residential areas
- School parking problems
- For improved visibility i.e. to remove parking at junctions or at crossing points used by pedestrians
- To improve traffic flows on main roads
- To provide designated on-street parking spaces for Blue Badge holders

3. Scheme Investigation

When investigating requests for parking restrictions, ECC will only consider requests on the grounds of safety (i.e. there is a proven history of recorded injury collisions) or where congestion occurs on the main road network.

Requests for on-street disabled parking bays are dealt with through Contact Essex (http://www.essex.gov.uk/Pages/Contact-us.aspx/ Tel: 0845 603 7631). Details of the Blue Badge scheme can be found on this website. All requests for other parking restrictions should be sent to the ECC Customer Teams in the first instance who will validate them for compliance with the safety or congestion criteria. If a proposal/request does not meet these criteria, the applicant will be notified and advised to contact either the

North Essex or South Essex Parking Partnerships (NEPP/SEPP) who will consider requests that do not meet the ECC criteria. Contact details for the Parking Partnerships can be found at:
http://www.parkingpartnership.org/ or http://www.uttlesford.gov.uk/main.cfm?type=NEPP

4. Typical Measures

Typically, measures considered by ECC will consist of double yellow lines (DYL) which indicate 'No Parking at Any Time'. This is on the basis that if we are introducing measures to address safety or congestion issues, these should apply at all times of the day, everyday of the week.

Other restrictions that may be considered by the Parking Partnerships will include DYL, single yellow lines (SYL – certain days of the week between certain times i.e. No Waiting Monday to Friday, 9am – 5pm), residents' parking (again, could apply to certain days of the week between certain hours).

The above list is not exhaustive and there are many different types of restrictions that could be considered. In some cases, restrictions may not be required at all, for example, where motorists are obstructing someone's private access, the Police may be able to intervene.

5. Things to Consider

Before considering any type of restrictions, the following factors need to be considered:-

- Parked vehicles cause motorists to drive at slower speeds – removing them may result in excessive or inappropriate vehicle speeds.
- Parking restrictions apply to all vehicles equally – restrictions aimed at removing commuters and local employees will apply to residents as well.
- Vehicles are allowed to stop on yellow lines to load/unload and set-down and pick-up passengers.
- In many situations, residents don't have off-street parking nor do they have the space to create any. Restrictions will cause hardship to those residents who will have to park further away and often carry heavy shopping longer distances.
- Parking restrictions will generally only displace parked vehicles to the nearest unrestricted piece of road leading to further requests for restrictions.
- All restrictions have to be consulted on. This is a legal requirement and all road users are entitled to comment on proposals including object to them. When objections are received, these need to be resolved. This could involve modifying a proposal or, in some cases, abandoning it completely. The outcome of any public consultation can never be accurately predicted and is a lengthy process.

6. Costs and Timescales

All proposals for parking restrictions have to be advertised in local newspapers. Once a proposal has been agreed or, nobody has objected, it can be implemented. Before implementation, the proposal has to be advertised again to state what it is and when it will

come into force. The costs below include the advertising costs, consultation costs and design and supervision of the work. They are indicative only – schemes that are controversial or not well supported will take up more staff time dealing with objections.

Because double yellow lines only have one meaning (No Waiting at Any Time) they do not require any supporting signage. On the other hand, single yellow lines need to specify which days of the week and hours of the day that they apply for. Consequently they need supporting signs and are more expensive.

Junction Protection (DYL)	£2,000
Single yellow lines in a small cul-de-sac	£3,000
Residents' parking scheme in a small cul-de-sac	£4,000
Limited waiting scheme outside parade of shops	£4,000

Local Highway Panel - Topic Paper 16
Highway Rangers

1. Typical problems

There are works all over the County that are too small to give to a contractor but that make a huge difference to the appearance of an area. These will include small scale maintenance works such as repainting or straightening a signpost; cutting back vegetation that is obscuring a road sign; strimming an overgrown highway verge or cleaning the road signs in an area or Parish.

These types of works are best carried out by the Highway Rangers typically consisting of 2 men and a van. They will carry a small amount of hand-tools and materials for carrying out a range of activities.

2. Scheme Investigation

For Rangers types of works the most important things are:-

- Is the road or footway where the works are proposed a public highway?

The Rangers can only work on roads and footways that are public highways.

3. Typical measures

Typically, the works that can be undertaken by the Highway Rangers will include:-

- Cleaning & minor repairs (non electrical road signs and bollards)
- Reinstatement of posts & bollards where no excavation is required
- Small repairs to concrete surfaces
- Trimming of vegetation
- Ad hoc grass cutting & strimming
- Repairs to roadside verges
- Drainage repairs
- Removal of graffiti from road signs
- Painting of street furniture (posts, bollards & benches etc)
- Removal of weeds
- Removal of small non hazardous fly tips from highway land
- Removal of illegal signs & fly-posting

The main thing to consider is that the scope of the works proposed needs to be achievable by 2 men and a van who will only carry a small selection of hand tools. It would be unrealistic to expect the Rangers to cut back 100m of overgrown hedge or strim a similar length of highway verge – these works would normally be passed to our main contractors to complete.

4. Things to consider

This list is not exhaustive but intended as a guide:-

- Is the road or footway where the works required part of the public highway?
- Do the works involve excavation?
- Do the works require working at height?
- Will the works interrupt the flow of traffic and therefore require traffic management?
- Are the scope of the works suitable for 2 men and a van?
- Will any specialist equipment or materials be required to complete the works?

5. Costs and timescales

There is an annual budget available for all Districts and Boroughs in the county of £130,000 per district/borough.

Where the Rangers service is provided by Essex Highways the annual costs will typically be in the region £75,000. Costs for districts and boroughs providing the service through their own internal arrangements (i.e. their own direct labour or contractor), the costs will vary.

Any surplus monies can be used to fund either additional Rangers services, where resources permit, and/or other minor traffic management schemes, ad hoc services and surveys (speed, traffic or pedestrian surveys) to progress schemes to delivery.

Local Highway Panel - Topic Paper 17
Vehicle Activated Signs (VAS)

1. Typical problems

One of the most common reasons that residents contact Essex County Council regarding highways is to complain about the speed of traffic either in the road where they live or often outside the school that their children attend.

2. Scheme Investigation

Vehicle Activated Signs (VAS) and Speed Indicator Devices (SID) locations are considered on a site by site basis. The following should be taken into account:

- Is there a proven speeding issue?
- The existing speed limit has been in place for 12 months
- The mean average speed is more than 5mph above the posted limit
- The sign is more than 70metres inside the existing speed limit
- The signs will be powered by wind/solar power wherever possible
- Is there sufficient space to safely install the device?
- Can the device be secured at the site?
- Is there visibility of between 50m and 100m from which drivers will be able to clearly see the device (enabling a driver to have a 3 second view on the approach)?

3. Typical measures

VAS (are normally used for Speed information but can be used for some warning signs such as junctions) and SID's have been widely used in Essex as a road safety strategy, the following measures may be considered:

- A VAS or SID may be either purchased and maintained by a Parish/Town Council or Essex County Council.
- A VAS may be permanently mounted on a pole or have a number of poles installed, to which the unit is moved on a rotational programme. Should the rotational programme be used the VAS supplier will undertake the moves as directed (for a cost). Essex County Council will undertake the pole installation works whilst the VAS unit will be installed by the supplier.
- A VAS will display speed limit .
- A SID is permanently attached to a pole which fits into a socket in the ground. A number of sockets may be installed within an area to which the SID can be moved on a rotational programme. The socket installation will be carried out by Essex County Council, the moves will be organised the Parish/Town Council and undertaken by a trained NRSWA accredited person supplied by the Parish/Town Council or pay for it to be carried out by Essex County Council.
- A SID will display the speed of a passing vehicle and can be set to have additional features such as a sad/smiley face. It may also have the facility to record speed and volume.

- A VAS is generally solar powered whilst a SID is generally powered by a rechargeable battery (may be solar powered).

4. Things to consider

Before considering the implementation of VAS and SIDS the following factors should be noted:

- There is some evidence that a proliferation of these signs, set at differing trigger speeds may have a negative/desensitising effect on driver behaviour.
- There must be visibility of between 50m and 100m from which drivers will be able to clearly see the device (enabling a driver to have a 3 second view on the approach).
- The devices should not be on site at the same time as other VAS/SID units.
- A Parish/Town Council must apply to Essex County Council should they wish to obtain a VAS or SID with a list of sites. A site visit will be undertaken by Essex County Council to ensure suitability and this will be confirmed by a letter of authorisation.

5. Costs and timescales

The following costs are indicative only and include design and supervision costs:

VAS	£6500
Installation of additional poles	£400
Additional moves	£150
Collecting Speed and Volume Data/site	£1,000
SID	£3600
Installation of additional sockets	£280
Additional moves (relocate)	£90
Second Battery	£500
Setup SID (with training by the supplier)	£1,000

If more than one Parish/Town Council share a VAS or SID, the cost of purchasing and maintaining it could be shared.

From the time of receiving the request to the installation which would include consultation and agreement of site with the Parish/Town Council installation would typically take between 20 – 24 weeks.

Local Highway Panel - Topic Paper 18
20mph Speed Limits & Zones

1. Typical problems

More than half of the road deaths and serious injuries occur on roads with a 30mph speed limit. Areas attracting high numbers of vulnerable road users (children and elderly) may require lower speed limits.

2. Typical problems

In determining if a 20mph Limit or Zone is appropriate, a number of factors need to be considered.

- Permanent 20mph Limits and Zones are not permitted on main roads (often referred to as PR1 and PR2 routes). However, a variable 20mph speed limit may in exceptional circumstances be considered with the prior approval of the Traffic Manager and the Cabinet Member for Highways and Transportation.
- Permanent 20 mph zones are not permitted on County PR2 routes but a 20mph limit may be considered again following approval by the Traffic Manager and the Cabinet Member for Highways and Transportation.
- 20mph zones and 20mph limits may be considered on non-County Routes in accordance with the Essex Speed Management Strategy (ESMS) and if the proposal has the support of the local community, Parish or Town council, District Councillor(s), County Councillor and the Police.
- 20's Plenty is an advisory (non-enforceable) speed limit trailed at four school sites in the County in 2010.

20mph zones

- Must have in place a significant number of speed reducing features which are able to reduce the speed of most traffic to average speeds of 20mph throughout the zone.
- A Speed Limit Order (SLO) is required to make it legally enforceable.
- They are signed on entry however, repeater signs must not be used within the zone as the limit should be self-enforcing, removing the need for police enforcement.
- Viable alternative routes for through traffic must be available at the entry points to the zone and the impact of displaced traffic considered.

20mph limits

- Can be introduced where traffic speeds are already restricted by natural constraints i.e. the layout and alignment of the road, where existing speeds are already low and traffic calming measures are not needed, however to comply with Department for Transport guidance the existing mean average speed would need to be 24 mph or under.

- Repeater signs must be used to prevent confusion with 30mph speed limits imposed by virtue of street lighting.
- As with 20mph zones, a Speed Limit Order (SLO) is required to it legally enforceable.

3. Typical measures

A zone would require a number of physical engineering measures governed by the geometry of the road.

It should also be noted that the various types of traffic calming measures such as build-outs, pinch-points and chicanes would be considered before speed humps or cushions, but a feature must be placed so that at no point in the zone would a person be more than 50 metres from such a measure.

4. Things to Consider

- There are high implementation costs associated with the levels of traffic calming usually required.
- The implementation of traffic calming would mean a loss of on street parking (a natural speed reducing feature) and could be hard to physically build in an area with a number of dropped curbs.
- Physical measures each have their own drawbacks including increased localised noise, visual impact, comfort of use and impact on disabled people and other facilities such as parking (reduced availability) and bus services (If the road is on a bus route speed humps and cushions would not be permitted in a 20mph Zone).
- They may also increase Co2 emissions

5. Costs and timescales

It is difficult to put a cost on 20mph zones and limits as they are all different. The cost will be influenced by things such as: the number of entry points (will determine the number of entry points and the number of signs required); Zones – the number of traffic calming features and the type of features will determine the overall cost.

Typically, a 20mph Zone could cost tens of thousands of pounds depending on the size of the Zone, number of entry points and how much traffic calming is required.

By comparison, a 20mph limit where mean traffic speeds are already 24mph or lower would cost between £5,000 and £10,000 depending on the size of the scheme.

Local Highway Panel - Topic Paper 19
Traffic Signals

1. Typical problems

- Safety, collisions (vehicle/vehicle, vehicle/pedestrians, vehicle/cycles)
- Congestion and delays, usually on a side road (not being able to turn onto or from a side road)
- Control/Priority, minor road having priority over major road.
- New developments creating increased traffic demand, or development access to existing highway network
- Increased pedestrian movements/activity (possibly due to new development)
- Uncontrolled pedestrian crossings causing delays to traffic, positive control of traffic or pedestrians, or at least when the pedestrian invitation to cross will appear.
- Insufficient land for another type of junction improvement (e.g. a roundabout)

2. Scheme Investigation

- Liaison/Consultation with stakeholders.
- Route Hierarchy/classification.
- Speed limits.
- Highway boundary.
- Street lighting in the area.
- Speed of traffic.
- Accident history, type and severity, identification of common factors.
- Are traffic counts required or traffic modelling to investigate impact of signals and signal timings on the highway network?
- At a roundabout is a minor road delaying a major road (priority to the right)?

3. Typical measures

- Part time signals at a roundabout where a minor road traffic flow dominates a major route i.e. A138 Chelmer Road/A1114 Baddow bypass, Chelmsford.
- Toucan Crossing (pedestrians and cycles. Where a cycle route crosses a road i.e. A1016Victoria Road, Chelmsford.
- Signalised Roundabouts. Minor road traffic flows dominating major road, or queues on a slip road back onto a high speed road, i.e. A127/A132 Nevendon Interchange, Basildon.
- Puffin Crossing. Conversion of zebra crossing to Puffin crossing. i.e. A133 Colne Bank, Colchester.

4. Things to consider

- Type of pedestrian crossing, do we need to allow for cyclists and/or horses?
- Pedestrian green man time, type and number of pedestrians.

- Location of crossing, near a school, allow more green time during peak pedestrian demand.
- Is there a school crossing patrol operating nearby
- Street lighting may be in the area but what are the lighting levels sufficient at the pedestrian crossing points?
- Ease of installation.
- Traffic Management/control during installation.
- Maintenance of the finished signal installation, where does a maintenance engineer park, can the signals be accessed safely.
- What happens if the signals are off at any time either planned or due to a fault.
- Is pedestrian guard railing required?
- Visibility of signals, are tall poles required, or trees removed/cut back.
- Ongoing revenue costs, power supply, phone line and maintenance including street lighting and road surface.
- Ability to enable manual intervention should abnormal congestion occur.
- Availability of power supply and communications (including cost of provision).
- Pedestrian routes.
- Cycle facilities/route.
- Proximity of other traffic signal installations.
- Method of control (independent control or linked to other signals).
- Full time or part time signals (part time signals are usually only permitted on roundabouts).
- Signals with pedestrian facilities cannot be part time.
- Is an accurate up to date survey of the area available? if not a new drawing will be required.
- What services are in the area (water pipes, power and BT cables) and whether this will require relocating/diverting and what will it cost.
- Road surface condition, whether a high friction surface is required?
- Is the junction on a bus route, are bus priority measures required?
- Is priority for emergency vehicles required?

5. Costs and timescales

Standalone Single Pedestrian/Cycle crossing £49,500 - £170,200

Standalone Dual Pedestrian/Cycle Crossing £144,000 - £218,400

Junction £120,000 - £450,000

Costs include, street lighting, civils works, surfacing works, provision of footways and kerb realignments where applicable