KENDAL TRANSPORT PLAN REVIEW PHASE 1.

1.0 EXECUTIVE SUMMARY

1.1 This report presents the findings of Phase 1 of a transport study into traffic and transport issues in Kendal, undertaken to enable the County Council to respond to various consultation requests from South Lakeland District Council.

1.2 The report also describes the context and process for a subsequent wider review of the Kendal Transport Plan, which is intended to inform development of the next local transport plan for Cumbria and the local development framework for South Lakeland in so far as they relate to the key service centre of Kendal.

2.0 STRATEGIC PLANNING AND EQUALITY IMPLICATIONS

2.1 The development, review and delivery of the Kendal Transport Plan has strong links to all of the County Council’s objectives, in that it provides potential for reduced congestion and greater ease of travel for people and goods; improved road safety; improved opportunities for walking and cycling for all; improved air quality; a better environment and improvements to the condition of the road network by reducing traffic use of inappropriate routes.

2.2 The prioritisation, programming and design of highway improvement schemes have the potential to generate either beneficial or adverse impacts on people with mobility or vision impairments.
3.0 **RECOMMENDATION**

3.1 That Local Committee be recommended to resolve:

(a) That the “Kendal Public Realm Framework – Document Review” at Appendix 2 be submitted to South Lakeland District Council as the Local Committee’s response to the District Council’s consultation enquiry.

(b) In relation to the proposal for part of the New Road carriageway to be used as a cycle route, that South Lakeland be advised that the Local Committee considers that more detailed work needs to be done in conjunction with the County Council as the local highway authority in developing the final draft of the Kendal Public Realm Design Framework to:

(i) Provide more detail on route options analysis for the riverside cycle route;

(ii) Provide clarity on the design detailing and the consequential impact on the highway and the New Road Common;

(c) Recommend to the Corporate Director, Environment that in responding to South Lakeland District Council regarding requests for advice on sites being considered for possible inclusion in the Allocations of Land Development Plan Document of the Local Development Framework for South Lakeland, the Corporate Director should:

(i) Note and advise the District Council of the findings of Kendal Transport Plan Review Phase 1 set out in Appendix 4 of the report, and the potential severe adverse cumulative traffic impact of new development in Kendal over the life of the LDF.

(ii) Note and advise the District Council of the further work being undertaken to identify feasible and deliverable transport improvements that might mitigate the potential cumulative traffic impact of new development in Kendal and the need for agreed policies within the LDF to secure such improvements as developer funded measures.

(iii) Reinforce the need for the District Council to work with the Council to develop agreed policies and procedures that will deliver transport improvements through planning obligations, developer contributions, and Community Infrastructure Levy as it is developed.
4.0 BACKGROUND

Introduction

4.1 At its meeting of 17 September 2009 the Local Committee resolved “That members approve, subject to receipt of funding, the undertaking of the Kendal Transport Plan review in 2010/2011 to support the future of the Kendal Transport Plan."

4.2 At its meeting on 15 June 2010, the Local Committee resolved:

(a) That a task and finish group of the Local Committee be set up to respond to a consultation from South Lakeland District Council (SLDC) on the second draft of the Kendal Public Realm Design Framework; and

(b) That the Corporate Director, Environment, be asked to incorporate into the Kendal Transport Plan Review study, an analysis of the SLDC proposal for a shared use cycleway/footway within the carriageway of New Road.

4.3 SLDC have also requested the County Council’s views on potential new development sites in Kendal as part of developing a preferred options document for the South Lakeland Local Development Framework.

4.4 Funding for a transport study for a Kendal Transport Plan Review (KTP Review) has been approved from the Preparation Pool budget in the Priority Transport Improvements Programme, and the Study has commenced.

4.5 The consultation responses referred to in 4.2 and 4.3 above have been requested for October 2010, therefore the KTP Review is being undertaken in two phases and the purpose of this report is to enable the working Group to make recommendations to the Local Committee regarding:

(a) The Local Committee’s response to consultation on the second draft of the Kendal Public Realm Design Framework;

(b) The Local Committee’s response to a request that Local Committee endorse the principle of creating a cycle/pedestrian facility on New Road, Kendal, utilising part of the existing carriageway;

(c) Recommendations that the Local Committee may wish to make to the Corporate Director, Environment, regarding her response under delegated powers to consultations from South Lakeland District Council regarding sites being considered for possible inclusion in the Allocations of Land Development Plan Document.

Kendal Transport Plan Review (KTP Review)

4.6 Following discussions with various members and officers of the County and District Councils, it is suggested that the key objective of the study, in
addition to those specific tasks listed at 4.5 above, is to prepare a document that can inform development of the 3rd Cumbria Local Transport Plan (2011-2026) and its subsequent implementation plans in relation to Kendal. To do this, a number of study objectives and tasks have been identified:

(a) To confirm the likely traffic impact of development and traffic growth in Kendal over the life of the Local Development Framework to 2025, building on the work done by Atkins on the LDF Transport Assessment for Kendal;

(b) To suggest transport objectives for Kendal and a strategy that could deliver them.

(c) To review previously identified schemes/options and suggest new proposals to inform development of a transport strategy for Kendal and to advise on the suitability of options with regard to cost, practicality, acceptability and effectiveness. Such issues that have previously been raised include:

- Northern Development Route
- New access from A591 into Kendal
- Junction improvements identified in Kendal Transport Assessment
- New Miller Bridge crossing
- Park and ride facilities;
- Park and walk facilities;
- Parking strategy – including location and charges
- Workplace Travel Plans, in particular for County and District Council offices;
- Cycle/pedestrian infrastructure;
- Public transport improvements.

(d) To identify a strategy for delivering transport improvements in Kendal, in particular working with the local planning authority to frame policies and strategies that will secure improvements through planning obligations placed on developers to mitigate both the site specific and cumulative traffic and environmental impacts of their development proposals.

**Kendal Public Realm Design Framework.**

4.7 A report on the Kendal Public Realm Design Framework (the Framework) was considered by the Local Committee at its meeting on 15 June 2010 (attached at Appendix 1 for ease of reference).

4.8 It has been suggested that the document is only intended to provide guidance, advice and ideas rather than being a prescriptive policy document. However, some Members have expressed concerns that the scope of the document extends beyond design guidance and moves into consideration of
movement strategy and detailed highway layouts. The outcomes of the Kendal Transport Plan Review; the Local Transport Plan and subsequent detailed work would more properly shape the local movement strategy, though the work done by Kendal Futures in looking at such issues and generating ideas is acknowledged.

4.9 The outcomes of Cumbria Highway's assessment of The Framework are attached at Appendix 2 and the Working Group is recommended to endorse the document as the Local Committee's response to the District Council's consultation.

New Road Common Cycle Route.

4.10 A specific proposal in the Kendal Public Realm Design Framework is to create a cycle/pedestrian facility on New Road using part of the existing carriageway, thereby reducing the vehicular approach to Miller Bridge to a single lane. The background and issues relating to the District Council’s proposal are set out in the report at Appendix 1. The Local Committee has been requested to endorse the principle of locating the New Road section of the Riverside Cycle Route on the existing New Road carriageway.

4.11 This proposal has benefits for cyclists and pedestrians in that it is direct and of the various route options it provides better access to the town centre.

4.12 However, the Local Committee has previously expressed a preference for the route to be through New Road Common in close proximity to the river, although this would create difficulties with regard to consequential need for deregistration of part of the Common Land.

4.13 In discussions about the Kendal Transport Plan Review some Members have also expressed the view that a route through Gooseholme would be a good compromise to obviate difficulties with deregistration of Common Land at New Road. The Gooseholme option would present its own legal difficulties that would have to be overcome in creating a new highway. The Gooseholme route, whilst a potentially valuable part of a Kendal cycle network, would not be a direct replacement for the New Road/Riverside route in that it does not provide comparable direct access to the town centre.

4.14 A report on the traffic and safety impact of the District Council’s New Road cycle route proposal is attached at Appendix 3. Although the report suggests that the alternatives have safety and capacity advantages over the New Road Carriageway SLDC proposal, I do not feel the safety issues with the SLDC proposal are compelling arguments against the use of that option. Indeed, officers have previously recommended the carriageway option as a preferred scheme. The alternative options also have disadvantages as referred to in 4.12 and 4.13 above.

4.15 However, there are also some concerns with the SLDC proposal as submitted that would need to be resolved before any final approval could be granted to such a scheme. Whilst some of these issues are matters of minor
design detailing, some are more significant relating to the design concept and the extent of highway required:

(a) The indicative plan for the proposal incorporated into the Kendal Public Realm Design Framework shows the cycleway/footway as a raised route segregated from the carriageway by a one metre high earth filled Lakeland wall. This gives rise to some design issues

- The clearance from the edge of carriageway to the face of the wall should be not less than 500mm;
- The parapet height of the wall should be sufficient to protect cyclists from falling into the carriageway;
- It is not clear how the difference in height is to be accommodated where there are gaps in the wall;
- The wall would need to be designed to highways adoption standards if retaining;
- We would normally look for a commuted sum to cover future maintenance and inspection costs of a retaining wall;

(b) There are design issues to resolve as to the width of the route and the mode of segregation if any;

(c) The wall and raised cycletrack would inhibit future winter gritting if this was decided as desirable on policy grounds.

(d) Any feature lighting of the wall would be an issue in terms of glare to drivers and future maintenance;

Therefore, on balance, it is felt that more detailed work needs to be done in conjunction with the County Council as the local highway authority in developing the final draft of the Kendal Public Realm Design Framework to:

(a) Provide more detail on route options analysis for the riverside cycle route;

(b) Provide clarity on the design detailing and consequential impact on the highway and the New Road Common;

SLDC Consultation on possible site allocations for Allocations of Land Development Plan Document.

The County Council has been asked to give technical advice to South Lakeland District Council regarding sites being considered for possible inclusion in the Allocations of Land Development Plan Document of the Local Development Framework for South Lakeland.

This part of the report is to enable Members to consider recommendations that the Local Committee may wish to make to the Corporate Director,
Environment, regarding her response under delegated powers to the consultation enquiry.

4.19 Transport study work has been undertaken by Cumbria Highways to assess the traffic impact of possible future development in Kendal over the life of the Local Development Framework to 2025. The process and the outcomes are detailed in Appendix 4.

4.20 At this stage, the study can only give a generalised view as to the likely impact, as the preferred sites to be included in the next stage of LDF consultation will only be finalised once technical advice on a wide range of issues including landscape impact, environmental impact, planning policy etc have been obtained. However, it is clear that a number of key junctions on the road network will be adversely affected with the following outcomes identified by the study:

(a) Significant increases in congestion on major routes into and through the town centre;

(b) Congestion increases on major roads;
   - Highgate – 32%
   - Blackhall Road – 35%
   - Milnthorpe Road – 53%
   - Shap Road – 61%

(c) Major increase in use of rat-runs, particularly Sandylands Road, Queens Road and Glebe Road

4.21 Phase 2 of the Kendal Transport Plan Review will look at how the effects of the cumulative traffic impact of future developments can be mitigated by future highway and transport improvements and which of these feasible and deliverable.

4.22 It is suggested that the cost of such improvements should reasonably be met by developers. It has not been easy to secure such improvements in the past as there has not been a comprehensive study of cumulative impact and possible mitigation measures. Therefore highways infrastructure improvements funded by developers have largely been limited to localised improvements which are demonstrated as necessary by site specific transport assessments, and cumulative impact is only taken into account in relation to committed developments (i.e. those which already have planning consent but have not yet been implemented).

4.23 The outcomes of the Kendal Transport Plan Review can be used to underpin requests to individual developers for not only site specific transport infrastructure improvements but also contributions to future infrastructure
improvements through site specific planning obligations or contributions from Community Infrastructure Levy.

Clearly, account also needs to be taken of the need to achieve a balance between mitigating the adverse impacts of development and securing the future employment and housing needs of the area.

4.24 The delivery of such an approach is of course a matter for the local planning authority and the County Council will work with LPAs to develop agreed policies and practices that best meet the needs of individual localities.

4.25 It is therefore suggested that Local Committee recommend to the Corporate Director, Environment that in responding to South Lakeland District Council regarding requests for advice on sites being considered for possible inclusion in the Allocations of Land Development Plan Document of the Local Development Framework for South Lakeland, the Corporate Director should:

(i) Note and advise the District Council of the findings of Kendal Transport Plan Review Phase 1 set out in Appendix 4 of the report, and the potential severe adverse cumulative traffic impact of new development in Kendal over the life of the LDF.

(ii) Note and advise the District Council of the further work being undertaken to identify feasible and deliverable transport improvements that might mitigate the potential cumulative traffic impact of new development in Kendal and the need for policies within the LDF to secure such improvements as developer funded measures.

(iii) Reinforce the need for the District Council to work with the Council to develop agreed policies and procedures that will deliver transport improvements through planning obligations, developer contributions, and Community Infrastructure Levy as it is developed.

5.0 OPTIONS

5.1 The Working Group may reject, defer or amend the recommendation.

6.0 RESOURCE AND VALUE FOR MONEY IMPLICATIONS

6.1 There are no financial implications at this stage of consideration.

7.0 LEGAL IMPLICATIONS

7.1 There are no financial implications at this stage of consideration.
8.0 CONCLUSION

8.1 The Kendal Transport Review Plan presents an opportunity to help shape the emerging Cumbria Local Transport Plan and the Local Development Framework to improve Kendal’s transport network.

Andrew Moss
Assistant Director of Highways and Transportation
23 August 2010

APPENDICES

Appendix 1 Local Committee report 15 June 2010 – Kendal Public Realm Design Framework.


Appendix 3 New Road Common Cycle Scheme – Capita Symonds Advice and associated plans.

Appendix 4 Kendal Local Development Framework – Impacts on Highway Network.

Electoral Division(s): All Kendal Divisions

Executive Decision

Yes

Key Decision

No

If a Key Decision, is the proposal published in the current Forward Plan?

N/A

Is the decision exempt from call-in on grounds of urgency?

No

If exempt from call-in, has the agreement of the Chair of the relevant Overview and Scrutiny Committee been sought or obtained?

N/A

Has this matter been considered by Overview and Scrutiny?

No

If so, give details below.

Has an environmental or sustainability impact assessment been undertaken?

No

Has an equality impact assessment been undertaken?

No*
PREVIOUS RELEVANT COUNCIL OR EXECUTIVE DECISIONS
[including Local Committees]
South Lakeland Local Committee 17 September 2009

CONSIDERATION BY OVERVIEW AND SCRUTINY
None

BACKGROUND PAPERS
None

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DRAFT PUBLIC REALM DESIGN FRAMEWORK FOR KENDAL

1.0 EXECUTIVE SUMMARY

1.1 This report informs Members of the work currently being undertaken by Kendal Futures in preparing a Public Realm Design Framework for Kendal. It summarises the process, delivery timescales and seeks Member’s views on the draft Framework.

1.2 The draft Framework also highlights a proposed design scheme for Common Land at New Road as designed by the consultants Taylor Young landscape architects. Local Committee is requested to approve a process by which a Local Committee decision can be made on the proposal that part of the Kendal Riverside Route be incorporated into the existing highway of New Road.

2.0 STRATEGIC PLANNING AND EQUALITY IMPLICATIONS

2.1 The Kendal Futures Board was established by the Local Committee to take forward the recommendations of the Kendal Economic Regeneration Action Plan which will contribute towards a number of the outcomes of the Council Plan’s “Making Cumbria More Prosperous Theme.”

2.2 One of the key recommendations of the Kendal Action Plan was to focus on increasing the vitality of the town centre through investing in good design and high quality public realm, as well as improving connectivity. This draft Design Framework will help contribute towards this aim.

3.0 RECOMMENDATION

3.1 That Local Committee receives the report on the Kendal Public Realm Design Framework process.

3.2 That the Corporate Director, Environment, be requested to incorporate an analysis of the New Road Riverside Cycle Route into the 2010/2011 Transport
Capital Programme Preparation Pool scheme for the Review of the Kendal Transport Plan and that the outcome be reported to Local Committee on 27th September 2010.

3.3 That Local Committee set up a task and finish group to respond to the second draft of the Design Framework.

4.0 BACKGROUND

DESIGN FRAMEWORK

4.1 As part of the Kendal Regeneration Action Plan, Kendal Futures is leading on an environmental improvement programme called Kendal - Gateway to the Lakes Public Realm Project. An application for funding was made to the NWDA in August 2009 for this project and £175,000 was awarded to deliver public realm enhancement in Kendal. SLDC agreed to be the accountable body for this project. The project is divided into two elements, 1) the Public Realm Design Framework and 2) the public realm improvement at Kirkland, Kendal. This second element has now been successfully delivered by Cumbria Highways on behalf of the three funding partners.

4.2 Part of the NWDA grant (£50,000) was to develop a Kendal Public Realm Design Framework and Design Proposals for key areas of Kendal including New Road Common. This work is 100% funded by the NWDA.

4.3 Kendal Futures established a Project Board to oversee the Design Framework consultancy and the enhancement works in Kirkland. This Board forms the public realm sub group of the Kendal Futures Board and includes representation from Cumbria County Council, South Lakeland Local Committee, South Lakeland District Council, Cumbria Tourism, Kendal Civic Society, Kendal Town Council, Kirkland Partnership and the NWDA. Following a tender process in November 2009 Taylor Young consultants were appointed.

4.4 The work has to date included consultation with key internal and external stakeholders, local businesses, young people and various elected members. It is envisaged that implementation of the design proposals will be delivered through a second phase of Kendal - Gateway to the Lakes Public Realm Project - subject to the adoption of the Framework and funding being in place.

4.5 The Framework document is aimed at developing a coherent approach to the design of the public realm and act as a guide for current and future development projects in the area. This will lead to a visible demonstration of quality on the ground and help build public support for a continued programme of improvements. It will also address the future management requirements for the continued maintenance of the public realm. It is intended that this framework will be developed with a view to it being adopted as supplementary planning guidance in the Local Development Framework.

4.6 The public realm design framework will be used to:

- Inform the design of new and enhanced public spaces
- Prioritise public investment and public realm projects in Kendal
- Provide a framework to inform the preparation of external bids for public realm funding
• Assess planning applications and inform planning agreements relating to public realm works  
• Guide the commission of use of surface materials and furniture and  
• Clarify management, implementation and future maintenance arrangements.  
• Encourage the integration of public art in the development and delivery of public realm works

4.7 The Kendal Public Realm Design Framework has been drafted and presented to the Project Board. The 1st draft was amended following feedback from Board members. The completed 2nd draft has now been distributed for comment to individual stakeholders who were invited to participate in the Public Realm Workshops in January 2010. Comments on the 2nd draft will be collated by the Kendal Regeneration Manager and returned to Taylor Young in mid June. From this a final draft will be presented to the Kendal Futures Board in July. Once finalised the Kendal Public Realm Design Framework will go to SLDC, KTC and this Committee for Member consideration and recommended endorsement.

4.8 The Design Framework is now undergoing consultation with stakeholders and Local Committee is invited to respond. Members may wish to set up a task and finish group to consider the Framework and to draft a response on behalf of Local Committee. This will be reported back to the July meeting of Local Committee. Members may welcome the input of the Area Engineer on these discussions.

**NEW ROAD COMMON**

4.9 The Design Framework includes detailed sketch proposals for 3 specific sites, including New Road. The proposed design of Common Land on New Road takes into account the original request from Local Committee for the Riverside Route to be sited along New Road and the recent commitment by SLDC to reinforcing the Management Scheme of common land at New Road. (Appendix 1 Sketch Design) The proposed design also takes into account the outcomes of the public consultation on New Road in summer 2009.

4.10 The New Road design proposal has emerged in response to the extensive consultation carried out by SLDC in summer 2009. This involved an depth public exhibition and an independent analysis of consultation responses and the report on this consultation was presented to SLDC Cabinet in October 2009. The consultation exercise revealed approximately 2/3rds support for the SLDC's proposed outcomes for the sites management and a majority of respondents wanted the new design to allow for the provision of the Kendal Riverside Route. The New Road section is a key missing element of the proposed all-purpose cycle route from Dockray Hall Road to Nether Bridge.

4.11 The current design proposal for New Road Common includes delivery of the Riverside Route at New Road. Following consultation with SLDC and stakeholders the design proposals will feature in a planning application as part of the current common land deregistration process. Delivery of the proposed larger scale scheme including highway improvements will mean completion of the Riverside Route on New Road. This supports the Local Transport Plan objective of reducing traffic congestion and supporting modal switch to sustainable travel patterns.

4.12 It remains difficult to find suitable land swap sufficient to deregister New Road Common should it be required to accommodate the Riverside Route. Taylor Young Consultants have however developed a proposal to accommodate the cycleway by
incorporating it into the carriageway. The current area of land proposed by SLDC for deregistration takes into account the area on Gooseholme to implement that element of the Riverside Route.

4.13 The previous preferred route for the Riverside Cycle Route utilised the inside lane of the New Road carriageway as now proposed by the Taylor Young design. However, this was based on an analysis of the traffic situation existing when the Kendal Transport Plan was developed. It is considered that the traffic and road safety impact of the Riverside Cycle Route should be re-assessed having regard to committed and future development potential including, for example:

- The Canal Head site;
- Housing and industrial land site allocations likely to be brought forward through the District Council’s Local Development Framework;
- Amended use planning application for the Riverside Development (K-Village)

4.14 At its meeting on 17 September 2009, Local Committee resolved that, subject to receipt of funding, a Kendal Transport Plan review be undertaken in 2010/2011 to support the future of the Kendal Transport Plan. Funding for such a review has been approved in the Preparation Pool block of the County Council’s Priority Transport Improvement Programme. Local Committee is recommended to request that the analysis work outlined at paragraph 4.13 above be incorporated into the review.

4.15 It is unlikely that the traffic and road safety impact report of the Riverside Cycle Route proposal could be finalised by the July meeting of the Local Committee and it is expected that the report would be presented to the September meeting of the Highways and Transportation Working Group. This would likely cause some delay in the planning application process for the wider New Road Common scheme.

5.0 OPTIONS

5.1 With regard to the Design Framework, Members can decide to a) consider the Framework at the next Local Committee; b) set up a task and finish group to consider the draft Framework and report back to the next Local Committee meeting or c) not respond to the Framework.

5.2 With regard to New Road common, Members can agree to the recommendation to carry out a traffic and road safety impact assessment and consider further. Alternatively Members could approve the proposals for including the Riverside Route in the designs for New Road without further traffic and road safety impact assessments, but this may preclude future opportunities for mitigating any adverse traffic impact arising from future development.

5.3 Members may also choose not to support the New Road proposals, although that would risk not meeting the levels of modal shift required through the Kendal Transport plan and risk delivery of the Kendal Riverside Route

6.0 RESOURCE AND VALUE FOR MONEY IMPLICATIONS

6.1 If Local Committee agrees to commission a Traffic Assessment it would be funded from the Priority Transport Improvement block of the Transport Capital Programme. It is estimated the assessment outlined in paragraph 4.13 would cost £7,500. The budget allocation for Kendal Transport Plan Review is £40,000. There are no other
immediate financial implications, but the future delivery of projects identified in the Kendal Public Realm Design Framework may seek to include a Cumbria County Council contribution to the works.

6.2 The Priority Transport Improvement Programme is determined by Cabinet, but individual schemes are devolved to the Local Committee for delivery and performance monitoring.

7.0 **LEGAL IMPLICATIONS**

7.1 There are no legal implications at this stage from the current proposal. Dependant on the outcome of the traffic analysis it may be necessary to consider the making of a traffic order at a later stage. Further the accountable authority, South Lakes DC, who are promoting the scheme will need to apply in due course to the County Council as commons registration authority to de-register the common land once appropriate exchange land has been secured.

8.0 **CONCLUSION**

8.1 The need for public realm improvement measures have previously been identified in the Kendal Economic Regeneration Action Plan which was endorsed by the Local Committee in 2007. The individual elements have been discussed within the Kendal Futures Board and agreed in principle with various partner organisations and with South Lakeland District Council.

8.2 In order to make progress on this issue, this report seeks authorisation for a Local Committee task and finish group to consider the draft Public Realm Design Guide Framework to inform and influence the make up of any future environmental schemes. With regard to progressing the specific proposals for New Road Common, Local Committee is requested to authorise the investigation of the traffic implications of incorporating the Riverside Cycle Route on the adjoining highway and consider the findings at a future meeting.

*Marie Fallon*
**Corporate Director Environment**

**APPENDICES**

Kendal Public Realm Framework- New Rd Sketch Design and Rational

Electoral Division(s): All Kendal Divisions

Executive Decision

Yes*
Key Decision

If a Key Decision, is the proposal published in the current Forward Plan?  

Is the decision exempt from call-in on grounds of urgency?  

If exempt from call-in, has the agreement of the Chair of the relevant Overview and Scrutiny Committee been sought or obtained?  

Has this matter been considered by Overview and Scrutiny? If so, give details below.  

Has an environmental or sustainability impact assessment been undertaken?  

Has an equality impact assessment been undertaken?  

PREVIOUS RELEVANT COUNCIL OR EXECUTIVE DECISIONS

South Lakeland Local Committee - 17 September 2009  
South Lakeland Local Committee - 18 July 2008  
South Lakeland Local Committee - 3 June 2008

CONSIDERATION BY OVERVIEW AND SCRUTINY

“Not considered by Overview and Scrutiny”.

BACKGROUND PAPERS

Draft Public Realm Design Framework -Taylor Young

REPORT AUTHOR

Contact: David Ingham 01228 226681 david.ingham@cumbriacc.gov.
1. Create better pedestrianised environment by improving materials and detuning carriageway. Signalised crossing might be considered.
2. Arrival space and art work feature
3. Raised platform providing views down to the river, shared cycle and pedestrian use
4. Lakeland wall for noise retention
5. Terraced landform opens up views down to the river and informal seating opportunities
6. Widened slipway encourages access to waters edge
7. Tree planting creates spaces and frames views down to the river.
8. Boulders form informal seating opportunities
9. Earth sculpture drumlins define spaces, views and seating opportunities
10. Flat topped seating boulders and benches offer views over the river
11. Reduce the carriageway and provide new surface treatment create pedestrian friendly crossing. Signalised crossings might be considered.
12. Planting to define space and create barrier between cycle / footway and greenspace
13. South facing sheltered seating area
14. Ramped and stepped access to footbridge
15. New surface treatment to Melrose Place
16. Existing stone wall replaced with railings to open up views of the river

Buff sandstone pavers, to take vehicular loading, diamond sawn. (150 x 1/450-600 x 100mm)
Conservation kerb, silver grey, fine picked, to match existing. (145x225mm)
Imprinted resin bound compound
Resin bound surface, buff brick
Grass reinforcement and stabilisation mesh
Amenity grass
Grassed wire mesh gabion system
Earth mounds ‘Drumlin’ (1000-1500mm high)
Lakeland wall, 1m high
Seats, flat top limestone boulder
Limestone boulders, random sizes
Timber columns, random lengths (1500-3000mm)
Lighting columns
Riverside railing
Vertical art work feature
Tree
Naturalistic herbaceous planting
Formal pedestrian crossing

Kendal Public Realm Framework - New Road Sketch Design
Design rational: New Road

The common land at New Road has great significance in the public realm in Kendal; it is the space closest to the town centre where the river is accessible and is potentially one of the most memorable places in Kendal for those travelling by car, bicycle or on foot.

As parking on the common is not permitted it is important that once cars are removed the space is given another purpose.

The Places Matter! Design Review suggested that New Road Common should be used to ‘reflect the aspirations of Kendal in a visual manner’ and such changes would be ‘effective in changing the perception of Kendal’. This area should become the iconic space for Kendal; and a dynamic and sculptural landscape would create a memorable landmark. The design should have a ‘playful’ character where visitors are encouraged to climb onto elevated paths and earth sculpture to view the river and the fells beyond.

Site constraints taken into account include the busy road and bye-laws setting out the exclusion of large areas of hard standing in any new design. Opportunities include the site’s high visibility from the road and the riverside location.

There are also opportunities within the redevelopment of this space to create better links to the town centre and encourage those travelling on foot or by bike along the riverside to detour slightly and explore the town centre and vice versa. This places emphasis on creating an important orientation space here. Careful consideration should be given to how the busy road is crossed and new thresholds spaces should be created within the common. Reconfigured junctions would create better connections into the town centre.

There are a number of features proposed; of interest is the raised cycle/foot path; visitors are elevated above existing ground level, the land is retained along New Road by an earth filled Lakeland wall. The aim of the wall is to create strong boundary to the road and lift the path however it would also create a striking ‘rural’ feature in the town centre. It is thought that this wall might be lit with feature up lighting at night.

The wall would also help to form a noise barrier, helping to screen both the noise of car engines and also the sound of tyres on the road. Gaps in the wall at access points would allow the space to be viewed by passing vehicles.

Site observations show that one lane of New Road southbound is poorly used in terms of numbers of vehicles, this being due to the fact that vehicles have to re-enter the other lane in order to cross Miller Bridge. This causes delay and frustration that could be reduced. Additionally by keeping the cycle facility along the road, the cost and process of deregistering it should be avoided.
APPENDIX 2  CAPITA SYMONDS

Cumbria Highways

KENDAL PUBLIC REALM DESIGN FRAMEWORK

Document Review

September 10
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1 Introduction

1.1 Commission
1.1.1 Capita Symonds has been commissioned by Cumbria County Council to carry out a review of the document “Kendal, A Public Realm Design Framework”, June 2010, prepared by Taylor Young.

1.2 Format
1.2.1 This report presents the results of the review and advises on the suitability of suggestions with regard to cost, practicality, acceptability and effectiveness.
2 Document Review

2.1 Introduction

2.1.1 The Kendal Public Realm Design Framework (PRDF) was commissioned by South Lakeland District Council (SLDC) to help achieve improvements to the public realm within the town. This would be achieved both by informing the design of new and enhanced public spaces and also by helping to coordinate and prioritise future investment in public realm projects.

2.1.2 The Framework is of particular relevant to the County Council in that it includes a number of recommendations and guidelines that affect work on the highway. These are intended to be used by the County Council in securing Section 278 agreements and act as a guide selecting suitable surface materials and furniture.

2.2 Movement Strategy

2.2.1 The PRDF aims to provide a co-ordinate approach to environmental improvements across Kendal town centre. It sets out a number of aims and objectives, the most relevant in terms of impact on the highway are summarised below:

- Define a hierarchy of place and function to the public spaces and streets;
- Maintain good traffic flow; create traffic speeds consistent with either cyclists or walkers; and
- Build on the existing cycle network.

2.2.2 In order to develop appropriate guidance the PRDF develops a people movement strategy identifying a hierarchy of users with pedestrian at the top followed by cyclist public transport and, lastly, private vehicles. This is consistent with the approach recommended in Manual for Streets.

2.2.3 The PRDF identifies vehicle speeds as a key factor in improving the experience of pedestrians and cyclist. It proposes designing streets to encourage reduced vehicle speeds in some areas to cycling speeds (10-20mph) and in more sensitive areas to walking speeds (5-10mph). Guidance on where the appropriate speeds should be encouraged through design are as follows:

- Cycling Speed areas (10-20mph)
  - Approach Roads
  - Core Streets
- Approaching Walking speed (5-10mph)
  - Orientation Spaces
  - Civic Spaces
  - Stricklandgate and Highgate

2.2.4 The report further identifies “primary traffic routes” which have the largest traffic volumes. It suggests adopting street designs that encourage traffic to move at a slow “uniform” speed. Measures such as road narrowing, removal of signals at junctions and use of materials to suggest a more pedestrian orientated environment.

2.3 Accessing the Town Centre

2.3.1 The report highlights the need to create a stronger balance for non-car users without being anti-car. It suggests a number of measures primarily aimed at improving pedestrian access.
2.3.2 The report suggests that, in order to improve pedestrian access to the town centre from the K Village area, the left turn movement from Nether Bridge onto Kirkland be banned for all or some (e.g. HGVs) vehicles. This would force vehicles to use Burton Road/Romney Bridge to access Kirkland and Milnthorpe Road.

2.3.3 As the report acknowledges, a detailed study would be required to determine the impacts of introducing such a ban. It is likely however that banning all vehicles from turning left onto Kirkland would result in unacceptable congestion both at Romney Road roundabout and on the approach to the Milnthorpe Road/Romney Road signals. A ban on HGVs making this manoeuvre is much more likely to be acceptable.

2.3.4 The report suggests that the existing blue badge parking in Market Place be relocate to Stricklandgate. This will be easier to access, give better access to shops and may allow better awareness to pedestrians that the road retains a limited vehicular function.

2.3.5 The potential to allow blue badge parking on Stricklandgate was considered when the pedestrian priority scheme was being developed. It was rejected however due to the volume of traffic that could use Stricklandgate. Whilst it would be feasible to relocate blue badge parking to Stricklandgate the same considerations apply as were previously considered.

2.4 Expressive/Directional Spaces

2.4.1 Expressive spaces are the memorable place in the public realm and generally have the highest prominence in the townscape. The report makes a number of recommendations with regard to specific locations as follows:

Kirkland

2.4.2 The report recommends that the junction of Kirkland and Nether Bridge be designed so as to encourage traffic to travel at speeds approaching walking speed. Away from the junction, Kirkland and Lound Road should be designed to encourage traffic speeds around cycling speed.

2.4.3 The measures suggested to reduce speeds include use of appropriate street materials, widened pavements, narrowing carriageways and reducing traffic on Nether Bridge (as discussed in 2.3.2 above).

2.4.4 Kirkland is a major traffic route into the town centre (and out of the town south of Nether Bridge) carrying approximately ** vehicles in the peak periods. Reducing speeds at the junction of Nether Bridge to walking speeds will introduce a capacity bottleneck. Given the current volume of traffic, any measures that would be successful in reducing speeds to 5-10mph would cause unacceptable congestion.

Highgate

2.4.5 The report recommends reducing vehicle speeds along Highgate to cycling speeds and providing facilities for disabled parking and servicing. This will include the widening of footways and narrowing of the carriageway at key locations.

2.4.6 Highgate is heavily trafficked, with queues extending back from the Lowther Street junction. Any measures that will introduce additional delays to traffic will need to be carefully designed so as to avoid causing unacceptable additional congestion.

Riverside Square

2.4.7 The report recommends reducing vehicle speeds along Lowther Street to cycling speeds and at the junction (Lowther St/New Road) to walking speeds.
2.4.8 It is difficult to envisage what measures could successfully be introduced on Lowther Street to reduce speeds given its narrow width and use by buses, HGVs and service vehicles. Also, measures to reduce speeds at the junction would cause significant additional congestion given the high volume of traffic at this location.

Station Entrance

2.4.9 The report recommends the creation of a high quality gateway space incorporating Longpool roundabout and Station approach. Whilst not giving specific measures, the intention is to slow traffic and create a more pleasant space for pedestrians.

2.4.10 Longpool is the main traffic route connecting the town centre to the retail and employment areas on Shap Road. Traffic flows are high and there is already congestion at this location during peak periods. Any measures introduced at this location would need careful design to avoid causing additional congestion. It is considered unlikely that significant reductions in speed can be achieved without adding to congestion.

Highgate/Gillingate Junction

2.4.11 The report suggests downgrading the carriageway and encouraging traffic speeds similar to walking speeds (5-10mph).

2.4.12 Given the high volume of traffic on both Highgate and Gillingate measures that reduce speeds to walking speed would be likely to result in additional congestion.

Blackhall Road

2.4.13 The report recommends that the road be designed for pedestrian first and vehicles last, with speeds reduced to walking speeds.

2.4.14 Given the role played by Blackhall Road and the existing volumes of traffic it is difficult to envisage how speeds can be significantly reduced without causing unacceptable congestion.

Stramongate and Wildman Street

2.4.15 The report suggests reducing the size of the Junction with New Road and reducing speeds here and on the Stramongate approach to walking speed. On Wildman Street, speeds would be reduced to cyclists speeds.

2.4.16 Whilst there may be scope to reduce the size of the Stramongate junction with New Road, measures to reduce speeds on Stramongate and Wildman Street are likely to cause unacceptable increases in congestion.

All Hallows Lane

2.4.17 The report suggests reducing vehicle speeds to the speed of cyclists by widening pavements and narrowing the carriageway at key locations and formalising parking and loading with build outs.

2.4.18 Speeds along All Hallows Lane are already controlled to a degree by the geometry of the road and the presence of parked vehicles. If designed carefully it should be possible to introduce carriageway narrowing at appropriate locations.

2.5 Core Streets

2.5.1 The PRDF categorises a number of important roads as core streets – defined as streets which have an important movement function for moving traffic and pedestrians around the town centre.

2.5.2 A number of these roads have already been considered – Blackhall Road, New Road, Stramongate and Lowther Street. Other roads defined as core streets are Sandes Avenue and Aynam Road.
2.5.3 For core streets the PRDF recommends that speeds be reduced to cycling speeds and that a consistent flow be encouraged removing stop start behaviour. Suggested interventions include traffic calming (through surface materials), downgrading carriageways, reducing carriageway widths and widening footways.

2.5.4 Whilst measures that would result in reduced stop start behaviour would beneficial it is not clear that the suggested interventions would achieve this. The stop start behaviour in Kendal is generally due to the influence of congestion at junctions, rather than the characteristics of the through roads. Whilst there may be locations where the carriageway can be narrowed without having a significant detrimental impact on congestion, introducing measures that result in significant reductions in speeds along all sections of both roads is likely to result in increased congestion.

2.6 Summary of Movement Impacts

2.6.1 The main impacts on traffic of the suggested principles and interventions in the PRDF would be in terms of reduced speeds on the majority of the major traffic routes into and through the town.

2.6.2 Whilst the principle of reducing traffic speeds on various roads to those of cyclists/pedestrians, although beneficial to vulnerable road users, is likely to exacerbate existing congestion in the town.

2.7 Surfacing and Maintenance

2.7.1 The main issues regarding issues of surfacing and maintenance that are likely to be of potential concern to the County Council are set out below.

- There are numerous references to proprietary products. Current regulations prohibit specification that require goods of a specific make or source as they are considered to be a barrier to trade. It should specify within the parameters of European or British Standards.

- The word “Tarmac” or “Tarmacadom” appears throughout the document and this is a term no longer current for the use intended here. Tar ceased to be produced in the early 1980’s and has particular issues which have effectively banned its use throughout Europe. It is regarded as carcinogenic and is potentially a hazardous waste if it is being disposed of. Bitumen has been gradually replacing tar since the 1920’s and is now the only binder used in surfacing materials. Since the introduction of European Standards covering road materials the term “asphalt” is now used as the generic name for all these products which in the past were referred to as tarmac(adam) or bitmac. This document should use the term “asphalt” to describe these materials. Any use of the term “tar” may raise concerns with the Environment Agency.

- Cumbria Highways Standards are contained in a number of documents. These can limit the scope of materials and designers should discuss these requirements with Cumbria Highways at an early stage of their design to ensure that appropriate materials are selected that meet highway requirements.

- Depth of paving units for pedestrian or vehicle areas is determined from engineering design (BS 7533) and will vary according to location and loading. This document should restrict itself to preferred plan dimensions (length, width) – page 171.

- Depth of paving units for pedestrian or vehicle areas (page 171) is determined from engineering design (BS 7533) and will vary according to location and loading. This document should restrict itself to preferred plan dimensions (length, width).
• Limestone is likely to be unacceptable in pedestrian or vehicle areas (page 173) because of its very low resistance to polishing and skid/slip risk (also applies to page 175).

• The County’s policy is that Surface Dressing is not a preferred treatment in urban areas (page 177) because of problems associated with chip loss due to slow moving and manoeuvring vehicles. This could be a maintenance problem in high quality areas. Surface Dressing generates a lot of complaints in urban areas.

• “Resin bonded surface dressing/Tar and chip” should be replaced by “Resin bonded or conventional surface dressing” – page 180.

• The use of flexible pitch jointing (page 182) as described in options 1 & 2 is not in BS 7533 and is not acceptable. In addition to the disadvantages stated, pitch jointing softens in warm weather and sticks to the soles of shoes thus spreading it onto adjoining surfaces. Wearers of stiletto heels will also sink into it. CCC has had problems in the past with pitch jointed systems which are not generally suited to modern traffic loadings.

• Option 3 (page 183) will require topping up of the jointing material every few years. Option 4 is the same as Option 3 but with the correct jointing. The constituents of the mortar should not be specified – it is for the supplier to design the mortar.

• Jointing materials are fully specified in BS 7533 by strength etc properties. No specification for constituents should be given – page 183. (We are currently having an issue with the products described here attaining the required strength on a scheme). It is contractually difficult to enforce the strength requirement because the designer asked for the inclusion of glass. This could result in addition costs for the client.

• BS 594 has been replaced by BS EN 13108 (page 184).

• Highway inspection frequencies (page 262) are set out in Service procedure 08/018 (and may be changed as part of the procedures for the end of the Capita contract). The text should be consistent with CCC’s requirements.

• CCC has few, if any, facilities for long term storage of replacement materials (page 263).

2.8 Asset Management

2.8.1 The main issues regarding asset management that are likely to be of potential concern to the County Council are set out below.

• Signing – Quality materials should be used but this can make repairs and replacement expensive. A directory of manufacturers and suppliers should be complied along with the particular product to allow replacement parts to be easily obtained.

• Trees – trees located near drainage systems can cause damage to drains from roots. Gullies need emptying more frequently during Autumn months and leaves can make footways slippery.

• Lighting – currently all lighting that is to be adopted must comply with the policy and standards set out in the Cumbria Design Guide. A number of the examples presented are not on the approved equipment list. Inclusion of electrical connections for festive lighting on Cumbria equipment is not permitted.
2.9 Urban Design and Landscape

2.9.1 The main issues regarding urban design and landscape that are likely to be of potential concern to the County Council are set out below.

- Standard buff and pink concrete tactile paving slabs have been listed but the equivalent clay brick tactiles are not listed. Dyed concrete has a poor colour permanence compared with natural clay and clay brick tactiles have already been used very effectively in several locations in the town centre.

- The section on Construction Options for Setted Carriageways gives 5 options but only seems to give a clean bill of health for option 5 which is not a sett option but rather pattern imprinted resin bonded Tarmac. This is potentially very misleading as this option is for a material which can never be compared to natural stone. There are other disadvantages of pattern imprinted tarmac which are not listed. Specifically:
  - Differential wear of the surface which removes the pattern from the most heavily trafficked areas.
  - Distortion of the surface pattern caused by vehicle turning movements.
  - Limited life compared with natural stone.

- Within the strategy for new tree planting the proposal to use single species through extended avenue areas is a risky one as there is a future potential to end up with even aged trees which could be subject to a catastrophic mortality through some future disease attack or old age.

- The trees are generally listed as their minimum potential size (Section 6) and are likely to be significantly taller.

3 Conclusion

3.1.1 Whilst the Public Realm design Framework contains many good desirable features there are a number of issues that would have cost/acceptability implications if adopted by the highway authority. The most significant of these are:

- The principle of reducing traffic speeds on various roads to those of cyclists/pedestrians, although beneficial to vulnerable road users, is likely to exacerbate existing congestion in the town.

- The document is inconsistent with current Cumbria Design Guides and includes material/techniques/equipment that are not acceptable.

- There are significant maintenance cost implications with the use of high quality materials and equipment proposed in the Framework document. The document recommends the production of an overarching Maintenance Strategy and Guide to cover the work across the various Councils. This recommendation is endorsed.

3.1.2 As a result of the review of the PRDF it is recommended that:

- All references to reducing the speed of traffic to cycling or walking speed be removed from the document; and

- The document be made consistent with Cumbria Design Guides.
Kendal Riverside Cycle Route

Outline proposals for a Kendal Cycle Route were developed in 2008. The route is from Dockray Hall Road in the north to Nether Bridge in the south with links branching off to Canal Head and Dowker’s Lane. The proposals for the route were subject to a Stage 1 Road Safety Audit in November 2008 (Preliminary Design Stage). Where work has been done Road Safety Audit’s at Detailed Design and Implementation Stage have been undertaken.

See attached Plan

Stramongate Bridge to Miller Bridge

Some work has been undertaken on this section, reducing the carriageway to 1 lane south from Stramongate to Gooseholme footbridge and providing crossing points. Between Gooseholme Bridge and Miller Bridge cyclists have to join the main carriageway, the proposals for a defined cycle route between the two have not been progressed.

The work already completed has been subject to a Stage 3 Road Safety Audit on completion of work and a further Stage 4 Road Safety Audit will take place next year. A preliminary analysis of the collisions has been done and the number of collision in the year before the work was 4 (3 resulting in slight injury and 1 damage only) and in the 15 months since there has been 2 (1 slight injury and 1 damage only). None of the collisions involved cyclists.

SLDC Proposal for New Road

The current proposal being consulted on by South Lakeland District Council involves the reduction of the westbound carriageway to 1 lane (from 2 lanes) on New Road from just past Gooseholme footbridge to Miller Bridge.

This proposal was subject to a Stage 2 Safety Audit and there were no major issues identified that would prevent the implementation of this proposal.

The removal of a lane of traffic on the approach to Miller Bridge will obviously reduced the capacity of the road network and an assessment of the impacts of this has been carried out.

The impact on capacity has been assessed using a Paramics micro-simulation model. The model covers the town centre and has been developed using the origin-destination data from the Kendal SATURN model. An assessment of the impact of the scheme on both journey times
and queues has been carried out. The assessment has been carried out using 2010 flows – i.e. without the impact of new developments such as Canal Head.

The assessment of journey times has been carried out over four routes:

- Route 1: Windermere Road to Aynam Road
- Route 2: Shap Road to Aynam Road
- Route 3: Windermere Road to Shap Road
- Route 4: Shap Road to Windermere Road

Queue lengths were measured along New Road from Miller Bridge. The journey time and queue length results are summarized in the following tables:

### Journey Time Impacts on New Road

<table>
<thead>
<tr>
<th>AM Peak</th>
<th>Base</th>
<th>Scheme</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 1</td>
<td>207s</td>
<td>229s</td>
<td>+11%</td>
</tr>
<tr>
<td>Route 2</td>
<td>186s</td>
<td>250s</td>
<td>+34%</td>
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<tr>
<td>Route 3</td>
<td>539s</td>
<td>554s</td>
<td>+3%</td>
</tr>
<tr>
<td>Route 4</td>
<td>355s</td>
<td>381s</td>
<td>+7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PM Peak</th>
<th>Base</th>
<th>Scheme</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route 1</td>
<td>175s</td>
<td>183s</td>
<td>+5%</td>
</tr>
<tr>
<td>Route 2</td>
<td>234s</td>
<td>243s</td>
<td>+4%</td>
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<tr>
<td>Route 3</td>
<td>278s</td>
<td>290s</td>
<td>+5%</td>
</tr>
<tr>
<td>Route 4</td>
<td>449s</td>
<td>443s</td>
<td>-1%</td>
</tr>
</tbody>
</table>

### Queue Length Impacts on New Road

<table>
<thead>
<tr>
<th></th>
<th>Maximum Queue Length (m)</th>
<th>Average Queue Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base</td>
<td>Scheme</td>
</tr>
<tr>
<td>AM Peak</td>
<td>35</td>
<td>56</td>
</tr>
<tr>
<td>PM Peak</td>
<td>32</td>
<td>56</td>
</tr>
</tbody>
</table>

The assessment indicates that there would be minimal impact on trips between Windermere Road and Shap Road. The impact on trips to Aynam Road would also be minimal in the PM peak hour. In the AM peak hour, there is a significant increase in journey times from
Windermere Road, and a smaller increase for trips from Shap Road. Although queue lengths will increase in both peak periods, the level of increase is relatively small.

Other Options:

In order to avoid impacting on capacity the cycle route could avoid using the section of New Road leading to Miller Bridge. Two alternative options have been suggested:

- New Road Common - would take a route to the north of the river along the back of the land now used for parking on New Road between Gooseholme Bridge and Miller Bridge (see attached plan).
- Gooseholme – to the south of the river this option would link Gooseholme Bridge to Canal Head and National Cycle Route 6.

There routes would provide the desired links and although there are a number of issues surrounding them that need to be explored/resolved they could provide a feasible alternative. Both have the advantage that they would not impact on capacity, and as cyclists would not be using the busy section of New Road, they would be safer for cyclists. Any future design work would necessitate a Stage 2 Road Safety Audit at detailed Design Stage before any work was undertaken.

Recommendation

The potential for developing the two alternative options that avoid utilising the section of New Road from Stramongate to Miller Bridge be further investigated in consultation with SLDC. Both of these options have safety and capacity advantages over the scheme being consulted on.

If the above options are not feasible, the current scheme should be progressed – subject to detailed design and safety audit.
Cumbria Highways

KENDAL LOCAL DEVELOPMENT FRAMEWORK

Impacts on Highway Network

September 10
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1 Introduction

1.1 Commission
1.1.1 Capita Symonds has been commissioned by Cumbria County Council to carry out a review of the impact of Local Development Framework proposals on the highway network.

1.2 Format
1.2.1 This report sets out the methodology used in carrying out the assessment and presents the results in terms of impacts on congestion at key locations in the network.
2 Background

2.1 Introduction

2.1.1 In 2008 WS Atkins were commissioned by South Lakeland District Council to update the existing Kendal SATURN Traffic Model to a new base year of 2008 from the previous base year of 2002. The original model was developed by Capita Symonds for use in developing LTP proposals.

2.1.2 In order to update the model, Atkins carried out a number of traffic surveys throughout the town together with a number of journey time surveys. Matrix estimation using SATME2 was then applied to calibrate the model to reproduce the observed flows and journey times.

2.1.3 It was concluded in a subsequent audit undertaken by Capita Symonds on behalf of Cumbria County Council that the Kendal SATURN base model had been updated to 2008 flows using an appropriate methodology. The revised models calibrated well overall, although a number of important flows were significantly different to observed values. A series of amendments to the model network were therefore recommended before its use in subsequent work.

2.1.4 The 2008 model was considered to reproduce observed flows and journey times to within acceptable levels, but was not considered suitable for assessing schemes that would involve significant reassignment. The model was considered to be capable of predicting the impacts of development proposals but it was recommended that if significant changes to the network were proposed then the model should be recalibrated using new origin-destination data.

2.1.5 Since the assessment of LDF impacts was carried out by Atkins, a number of new proposals for development (primarily residential) have been made by SLDC. As a result there is a requirement to reassess development impacts on the highway network taking these changes into account.

2.2 Changes to the Network

2.2.1 Revised models have now been developed for the modelling of the Kendal Local Development Framework. A number of errors which were discovered in the original model have now been amended to improve the results. The most important of these was a coding error at the Windermere Road/Sandes Avenue/Stricklandgate junction, where originally no individual priorities were allocated to particular movements. This has now been amended, with traffic travelling to and from Windermere Road and
Sandes Avenue now becoming the priority movements, with additional delays being applied to those waiting at give way lines or turning right across priority traffic movements.

2.2.2 Additional changes were made to other individual junctions as well in order to more accurately reflect the network being modelled. Link length and saturation flows were amended in the area of the Longpool mini roundabout, Wldmand Street and Ann Street. The Longpool/Appleby Road junction was also amended in this respect. Amendments were made to some priority markers, particularly where streams of traffic merge, to more accurately reflect the movement of traffic at these junctions. This will have removed additional delays imposed by the program when traffic is in reality relatively free flowing.

2.2.3 The traffic signal stage timings were amended at a number of junctions. Inter-green times had previously been coded for certain stages when in fact they should have been set to zero. This was usually when a right turning filter arrow appeared for a short time after the prior stage for straight ahead moving traffic. All of these haven been amended, without impacting on traffic signal cycle times for any individual junctions.

2.2.4 Lane allocations for individual movements were also found to be incorrect for the Romney Road junctions with Burton Road and Milnthorpe Road. Correcting these will have resulted in more free flowing movements and removed any delays imposed upon the traffic by the program.

2.2.5 All of these changes were initially made to the 2008 network used by Atkins. This was because the original traffic surveys used to calibrate the network were undertaken prior to the New Road/Blackhall Road junction changes. Amending the original network therefore enabled the 2008 traffic matrices to be re-calibrated. Minor changes were made to the traffic matrices to more accurately reflect traffic leaving or entering a particular zone. This was sometimes due to mis-coding of the original junction counts. For instance, traffic entering or leaving Busher Walk had in fact been coded as entering or leaving Burneside Road. Other improvements to the calibration were achieved at the Windermere Road/Queens Road junction, Shap Road/Sandylands Road and Parkside Road.

2.2.6 An amended network was then developed for the current situation in 2010 incorporating the recent junction changes. The model was also amended to include traffic generated by the recently opened K-Village complex. The 2008 traffic figures
were amended to reflect actual changes within the town recorded by permanent traffic counters. Overall traffic in the AM peak had increased by 2.18%, whereas that in the PM had decreased by 3.14%. Whenever traffic has been growthed up or down, movements to and from employment or retail developments will have been frozen at 2008 levels as these will not change.

2.2.7 The lack or current turning counts or an up to date origin destination survey for Kendal means that there is no way to validate the 2010 movements generated by the model. This does not cause particular concern however as the movements will be very similar to those contained in the 2008 Kendal model, which was fully validated.

2.3 Development Scenario

2.3.1 A future development scenario was developed for 2025. Once again, developments where traffic generation was not subject to change had their movements frozen. The remaining trips were growthed up accordingly to the local growth levels predicted by TEMPRO. The following additional development sites supplied by SLDC were also included in the analysis: E8 (employment), R104, R129, RN134, RN137, RN169 and R181 (all residential sites). These areas are in total estimated to accommodate a further 1800 dwellings, and 4 hectares/12500m² of employment area. Additional residential developments of relatively small size have not been included in the model as these are assumed to be included in the TEMPRO growth rate. The same trip rate as that used by Atkins was used to generate new traffic figures for the additional new zones in SATURN to enable a direct comparison. In addition the effects of the Sainsbury’s supermarket proposed for Kendal Cricket Club at Longpool were also incorporated.

2.3.2 The proposed Canal Head development has been included in the model, incorporating the current proposals. Although work is ongoing to investigate the highway requirements to access the development, including a new bridge crossing, these have not been included in the model – due to uncertainty as to what improvements will be required.

2.4 Results

2.4.1 The results from the SATURN model have been summarised in terms of Ratio of Flow to Capacity (RFC) and maximum delays at significant junctions where the RFC value is greater than 100 (i.e. the junction is over its theoretical capacity). The Results are presented for the 2025 assessment and compared with current conditions – 2010 base scenario.
2.4.2 The results are presented on the following page and can be summarised as follows:

- Significant increases in congestion on major routes into and through the town centre;
- Congestion increases on major roads;
  - Highgate – 32%
  - Blackhall Road – 35%
  - Milnthorpe Road – 53%
  - Shap Road – 61%
- Major increase in use of rat-runs, particularly Sandylands Road, Queens Road and Glebe Road

2.4.3 The actual values of RFC and delays presented in the table should be treated with caution. Delays are subject to significant variation over an hour and from day to day. It is unreasonable therefore to expect a traffic model to predict these with a high degree of accuracy.

2.4.4 In addition, SATURN is not a tool for predicting the detailed behaviour of individual junctions. In order to more accurately predict the level of congestion and delay at junctions they should be modelled using detailed modelling software – such as LINSIG, ARCADY etc.

2.4.5 It should also be born in mind that the results presented are affected by the level of congestion present in the network at 2025 with full LDF development. The congestion at a number of junctions used by traffic entering the town is reducing the traffic in the town centre – as it is held up and cannot access the town centre in the modelled hourly period. This is particularly the case on Shap Road and Milnthorpe Road. In practice this means that if the congestion is removed on junctions used to access the town centre, the volume of traffic in the town centre will increase, causing more congestion. This is particularly the case for Highgate where any measures to reduce congestion on Milnthorpe Road will result in increased congestion at Highgate.
Summary of Junction Capacity Results

<table>
<thead>
<tr>
<th>Junction</th>
<th>Existing 2010 AM Peak RFC</th>
<th>Delay (sec)</th>
<th>PM Peak RFC</th>
<th>Delay (sec)</th>
<th>2025 with LDF Proposals AM Peak RFC</th>
<th>Delay (sec)</th>
<th>PM Peak RFC</th>
<th>Delay (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandes Avenue/Blackhall Road</td>
<td>112</td>
<td>151</td>
<td>109</td>
<td>120</td>
<td>115</td>
<td>176</td>
<td>113</td>
<td>162</td>
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<tr>
<td>Longpool/Station Road</td>
<td>81</td>
<td>5</td>
<td>102</td>
<td>39</td>
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<td>19</td>
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<td>15</td>
<td>103</td>
<td>58</td>
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<td>21</td>
</tr>
<tr>
<td>Milnthorpe Road/Romney Road</td>
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<td>105</td>
<td>77</td>
<td>104</td>
<td>72</td>
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3 Conclusion

3.1.1 The review of the previous modelling work carried out by Atkins has revealed a number of minor errors in developing the base model that were carried through to the assessment of the LDF. None of these were major however, and would not affect the results significantly.

3.1.2 The model has now been amended to correct these errors and also to take account of current LDF proposals supplied by SLDC.

3.1.3 The results confirm the work carried out by Atkins in demonstrating that, without remedial highway improvement measures, the level of development proposed will result in unacceptable congestion throughout the highway network in Kendal.

3.1.4 Key junction on the approaches to the town and in the town centre will all be significantly over capacity in 2025.

3.1.5 It is recommended that additional work be carried out to determine what highway improvements will be required to facilitate the level of development proposed in the LDF.