

The background of the cover is an aerial photograph of an industrial facility, possibly a steel mill, with various buildings, pipes, and a large open area. The image is overlaid with a large, stylized sunburst graphic in shades of green and yellow, radiating from the top center. The text is centered over the image.

Staveley Corridor

Area Action Plan Feasibility Study
Options Appraisal Report

January 2011

Staveley Corridor Area Action Plan Feasibility Study Options Appraisal Report

January 2011
(Revised October 2011)

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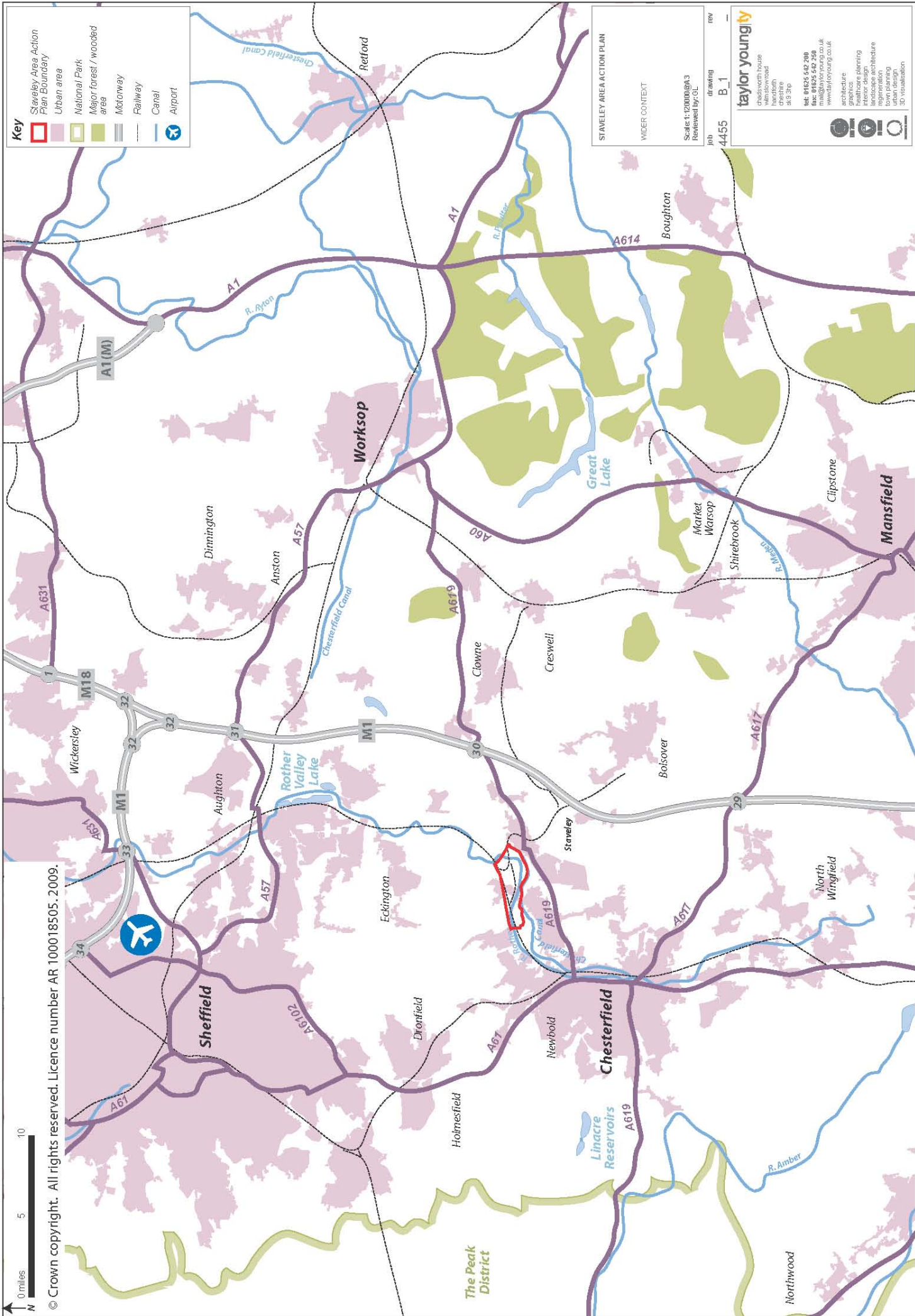
Chapter 1: Introduction



- 1.1 Taylor Young, with AECOM and BE Group were commissioned in 2008 to undertake a feasibility Study for the regeneration of the Staveley Works Corridor as shown on the context plans at the end of this chapter. An extensive, comprehensive and technical baseline study has been produced which revealed certain development constraints but also showed significant opportunities to develop the corridor and play an important contribution to the wider regeneration of the surrounding neighbourhoods, particularly Staveley and Barrow Hill.
- 1.2 A vision supported by key strategic principles was agreed by the stakeholder group and wider community. The vision is to create:

“a sustainable urban extension within a landscape setting”
- 1.3 In order to achieve this vision, nine strategic development principles were determined. These are:
 - Connecting communities
 - Creating employment opportunities
 - Developing a range of high quality house types and tenure mix
 - Enhancing tourism and leisure opportunities
 - Developing a range and mix of appropriate land uses
 - On- site energy generation
 - Providing the opportunities for an integrated transport network
 - Strengthening and enhancing the natural environment
 - The creation of something that is distinctive and unique
- 1.4 The baseline study revealed some serious constraints or difficulties which will have to be overcome sufficiently if regeneration is realised in the Corridor. These are:
 - The potential flood risk implications
 - The potential land compaction and contamination issues
 - Financial implications of the above
 - Planning constraints – including heritage
 - Impacts upon the utilities
 - Land ownership issues and requirements
 - Topographical issues
 - The current economic situation and associated time impacts
- 1.5 The vision and the nine strategic development principles were used to generate four development options to accompany a ‘do nothing’

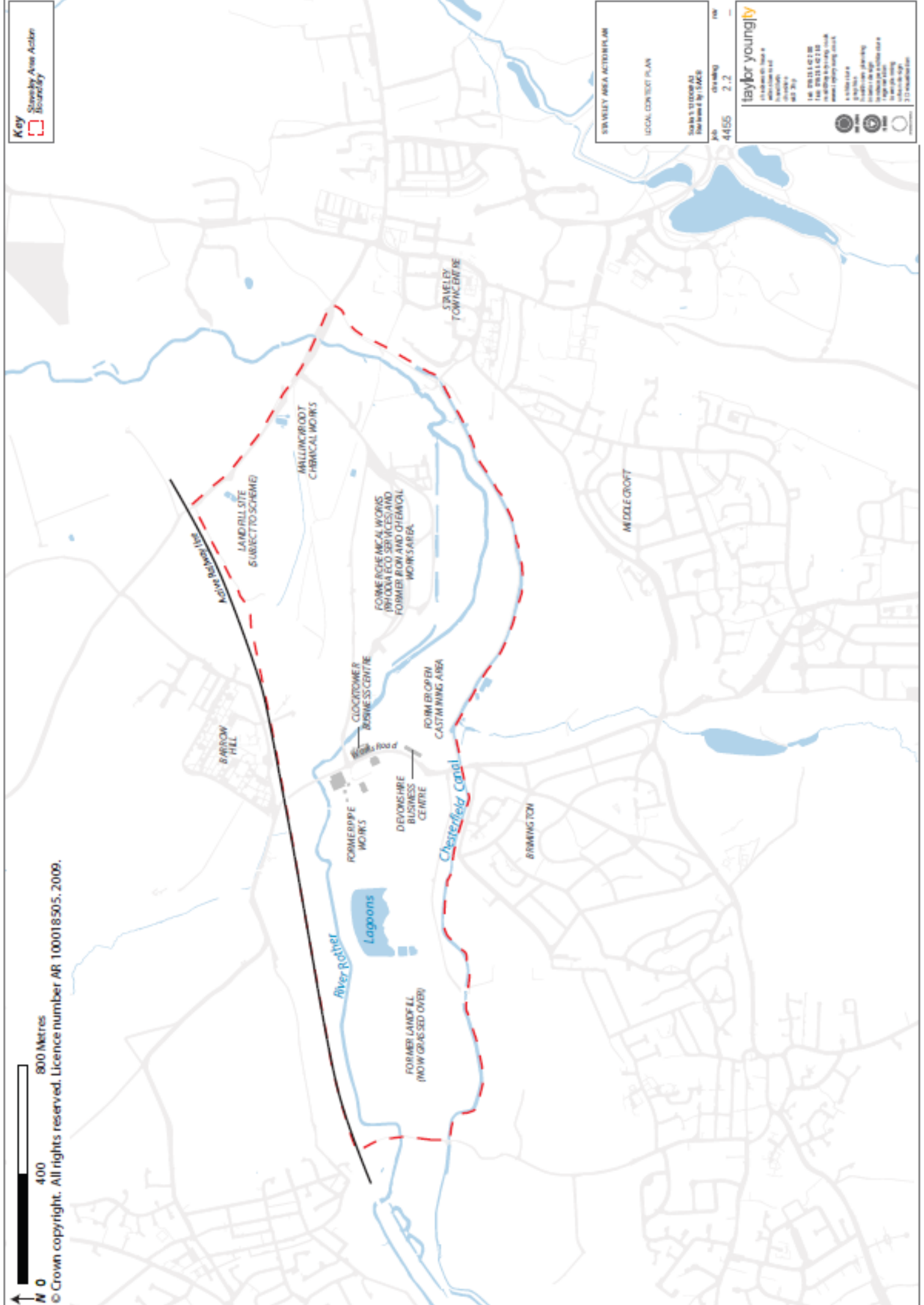
option. During the summer of 2009, these options were made public and comments were invited from individual public consultation and also consultation in support of the core strategy development. These options are described fully in the Vision and Options Report dated June 2009, and plans are included at the end of Chapter 2 of this report.

- 1.6 In order to test viability and identify a preferred option as an indicative development route for the Staveley Works Corridor, a robust options appraisal has been undertaken of all four options as well as the 'do nothing' option. This report details the options appraisal, the outcome of which informs the basis of an emerging 'preferred' option for the regeneration of the Staveley Works Corridor.
- 1.7 This report therefore introduces the options appraisal methodology and appraises the options in Chapter 2. Chapter 3 identifies the emerging preferred option for regeneration. Chapter 4 concludes the report and this Feasibility Study by suggesting some ways in which the preferred option might be brought forward and some broad brush cost/value assumptions, possible phasing and delivery of the proposals as well as potential regeneration benefits. In order to assist delivery, the landowners, leaseholders and planning policy need to work together. This report concludes with suggested wording of a policy for inclusion into the council's LDF Core Strategy document as a precursor to an Area Action Plan or Supplementary Planning Document.



Key
 Stravely Area Action
 Boundary

0 400 800 Metres
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STRAVELY AREA ACTION PLAN
 LOCAL COUNCIL PLAN
 Scale 1:10,000 A3
 Drawn by: SACB
 Job No: 4455
 City/County: 2, 2
 Date: 11/01/09

taylor youngly
 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Chapter 2: Options Appraisal

2.1 Introduction

2.1.1 An options appraisal is used as a clear process of assessment in order to guide the identification of a preferred option for the regeneration of the Staveley Works Corridor. It is broadly based on a scoring approach, recommended by the Government Office, as part of the Green Book Appraisal process.

2.1.2 Put simply, the options appraisal enables the consultant team working on behalf of Chesterfield Borough Council (CBC) to identify which of the five options listed below, could form the basis of an emerging preferred option:

Option 1 – Working with the Constraints

Option 2 – Landscape pockets

Option 3 – Maximizing Development

Option 4 – Radical Remodelling

Option 5 – Do Nothing

These options were described in further detail in the Vision and Options Report

2.1.3 The appraisal process takes account of seven criteria against which each option is scored. The criteria are:

- Strategic contribution
- High level financial assessment
- Local acceptability
- Deliverability
- Regeneration benefits
- Sustainability assessment
- Transportation

2.1.4 Each option is assessed against the criteria and the results are inputted into an options appraisal matrix where total scores and a percentage are ascertained. In each case a score of 1 is poor and a score of 5 is excellent. The benefit of this methodology is that it is a clear and concise process. It can also directly show to potential funding partners that an approved appraisal process has been followed in a very structured manner. Key deliverables, important to

potential funders are also worked through each option. The drawbacks however are evident. At this strategic level of study, full accurate cost/value information is impossible. For example, detailed and intrusive site investigations to fully understand the compaction and contamination issues have not been undertaken. Similarly, there is knowledge of available coal deposits within the Corridor, but no confirmed figures as to the amount or financial value. The appraisal process, at such a strategic level is a subjective process but the consultant team has maintained a level of objectivity so that it forms a good, solid foundation for a way forward.

2.2 Strategic, Planning and Economic Contribution

2.2.1 This assesses how well each option contributes to the key strategic outcomes for the region, the Borough and the local area. The Green Book Appraisal Guidance recommends the classification of objectives into three groups in order to determine the role of a particular project in meeting policy objectives. It separates the objectives into:

- **Ultimate Objectives** – the statements/outcomes required of strategic policy. To set these measures, the objectives contained in the RSS are used.
- **Intermediate Objectives** – these are a step down from the ultimate objectives but will need to be met if the ultimate objectives/outcomes are to be achieved. The emerging core strategy is used in this instance.
- **Immediate Objectives** – these are the key objectives immediately and directly concerned with the outputs of the project so the key strategic development principles approved by the stakeholder group are used.

Ultimate Objectives of the RSS

2.2.2 The Core Objectives set out in Policy 1 of the Regional Spatial Strategy for the East Midlands are intended to translate the Regional Vision and broader policy context into a spatial strategy that will deliver sustainable development in the region. To secure the delivery of sustainable development within the East Midlands, all strategies, plans and programmes having a spatial impact should meet the following core objectives:

a) To ensure that new affordable and market housing address need and extend choice in all communities in the region.

b) To reduce social exclusion through:

- the regeneration of disadvantaged areas
- the reduction of inequalities in the location and distribution of employment, housing, health and other community facilities and services

- responding positively to the diverse needs of different communities.

c) To protect and enhance the environmental quality of urban and rural settlements to make them safe, attractive, clean and crime free places to live, work and invest in, through promoting:

- ‘green infrastructure’
- enhancement of the ‘urban fringe’
- involvement of Crime and Disorder Reduction Partnerships
- high quality design which reflects local distinctiveness.

d) To improve the health and mental, physical and spiritual well being of the Region's residents through improvements in:

- air quality
- ‘affordable warmth’
- the availability of good quality housing
- access to health, cultural, leisure and recreation facilities and services.

e) To improve economic prosperity, employment opportunities and regional competitiveness through:

- the improvement of access to labour and markets; and
- ensuring that sufficient good quality land and premises are available to support economic activity in sectors targeted for growth by the Regional Economic Strategy.

f) To improve accessibility to jobs, homes and services through the:

- promotion and integration of opportunities for walking and cycling
- promotion of the use of high quality public transport
- encouragement of patterns of new development that reduce the need to travel especially by car.

g) To protect and enhance the environment through the:

- protection, enhancement, sensitive use and management of the Region's natural cultural and historic assets, giving particular attention to designated sites of international importance;
- avoidance of significant harm and securing adequate mitigation or compensation for any unavoidable damage;
- reducing the amount of waste produced and increasing the amount recycled or otherwise beneficially managed; and
- recognition of the limits to the capacity of the environment to accept further development without irreversible damage.

h) To achieve a ‘step change’ increase in the level of the Region's biodiversity through:

- the management and extension of habitats, both to secure net gains in

biodiversity and to facilitate species migration to allow the biosphere to adapt to climate change; and

- ensuring that no net loss of priority habitats or species is allowed to occur.

i) To reduce the causes of climate change by minimising emissions of CO₂ in order to meet the national target through:

- maximizing 'resource efficiency' and the level of renewable energy generation;
- making best use of existing infrastructure;
- promoting sustainable design and construction; and
- ensuring that new development, particularly major traffic generating uses, is located so as to reduce the need to travel, especially by private car.

j) To reduce the impacts of climate change, in particular the risk of damage to life and property from flooding and sea level change and the decline in water quality and resources. This will be achieved through the location, design and construction of new development in ways that include:

- reducing the build-up of heat island effects in urban areas;
- providing carbon sinks; and
- providing sustainable drainage and managing flood water.

k) To minimise adverse environmental impacts of new development and promote optimum social and economic benefits through the promotion of sustainable design and construction techniques.

2.2.3 These objectives have been used to assess each of the five options in relation to the Strategic Contribution Evaluation Criteria, with the findings recorded in the following table.

| Strategic Contribution | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical remodelling | Option 5 D0 Nothing |
|---|--|----------------------------------|---------------------------------------|------------------------------------|---------------------------|
| <i>New affordable and market housing address need and extend choice</i> | 3 | 4 | 5 | 3 | 0 |
| <i>Reduce social exclusion</i> | 5 | 5 | 5 | 5 | 0 |
| <i>Protect and enhance the environmental quality of urban and rural settlements</i> | 5 | 3 | 3 | 4 | 2 |
| <i>Improve the health and mental, physical and spiritual well being of the Region's residents</i> | 5 | 4 | 3 | 5 | 0 |
| <i>Improve economic prosperity, employment opportunities and regional competitiveness</i> | 3 | 5 | 4 | 3 | 2 |
| <i>Improve accessibility to jobs, homes and services</i> | 4 | 4 | 5 | 2 | 2 |
| <i>Protect and enhance the environment</i> | 4 | 4 | 4 | 5 | 3 |
| <i>Increase in the level of the Region's biodiversity</i> | 3 | 3 | 3 | 4 | 4 |
| <i>Reduce the causes of climate change by minimising emissions of CO2</i> | 3 | 3 | 3 | 3 | 3 |
| <i>Reduce the impacts of climate change</i> | 4 | 4 | 3 | 1 | 0 |
| <i>Minimise adverse environmental impacts of new development and promote optimum social and economic benefits</i> | 4 | 4 | 4 | 5 | 3 |
| Scores (1= very poor/ 5 = very good) | | | | | |
| Total Score | 43 | 43 | 42 | 40 | 19 |
| Average Score | 4 | 4 | 4 | 4 | 2 |

Intermediate Objectives of Chesterfield Borough Council

2.2.4 Chesterfield Borough Council Core Strategy Options Paper (June 2009) provides objectives, listed below, which sets out how the borough should develop over the next 15-20 years, taking into account social, environmental and economic issues. These objectives have been used to assess each of the five options with the findings recorded in the following table.

| Strategic Contribution | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical remodelling | Option 5 D0 Nothing |
|---|--|----------------------------------|---------------------------------------|------------------------------------|---------------------------|
| <i>Minimise CO2 emissions, increase the use of renewable energy and help the borough adapt to the effects of climate change</i> | 5 | 5 | 4 | 3 | 3 |
| <i>Deliver sites for 6,800 homes to be built between 2009 and 2026 to meet the housing requirement for Chesterfield borough set out in the RSS</i> | 3 | 4 | 5 | 3 | 0 |
| <i>Support the growth and viability of Chesterfield and Staveley town centres and the borough's district and local centres.</i> | 4 | 4 | 4 | 4 | 1 |
| <i>Adopt the approach to flood risk set out by the Government in allocating land for development, so that no new properties will be at risk of flooding</i> | 2 | 5 | 1 | 3 | 5 |
| <i>Deliver significant amounts of affordable housing.</i> | 4 | 4 | 4 | 4 | 0 |
| <i>Deliver 30-45 hectares of land for new employment development by 2026.</i> | 3 | 3 | 5 | 2 | 4 |
| <i>Prevent any loss of biodiversity and protect and improve the borough's key green infrastructure assets (such as Borough & Community Parks, Wildlife Sites, River/Canal Corridors and Greenways).</i> | 5 | 4 | 4 | 5 | 2 |
| <i>Keep the existing Green Belt.</i> | 5 | 5 | 5 | 5 | 5 |

Immediate Objectives for the Staveley Works Corridor

2.2.5 Taking into consideration the Staveley Area Action Plan Feasibility Study Baseline Report and its key messages, along with the Vision for the future redevelopment of the Staveley Works Corridor, key strategic objectives have been identified to underpin the options development process. The following objectives listed contribute towards the creation of a sustainable neighbourhood and are detailed further in the Vision and Options Report. These objectives have been used to assess each of the five options with the findings recorded in the following table.

| Strategic Contribution | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical remodelling | Option 5 Do Nothing |
|---|--|----------------------------------|---------------------------------------|------------------------------------|---------------------------|
| Immediate Objectives | | | | | |
| Connecting Communities | 5 | 5 | 5 | 5 | 0 |
| Creating Employment Opportunities | 3 | 3 | 5 | 2 | 3 |
| Providing a range of high quality house types and tenure mix | 3 | 4 | 5 | 3 | 0 |
| Enhancing tourism and leisure opportunities | 5 | 4 | 4 | 5 | 1 |
| Developing a range and mix of appropriate land uses | 5 | 5 | 5 | 5 | 2 |
| Energy generation | 5 | 5 | 3 | 3 | 0 |
| Providing the opportunities for an integrated transport network | 5 | 5 | 5 | 5 | 1 |
| Strengthening and enhancing the natural environment | 4 | 5 | 5 | 5 | 3 |
| Creating something which is distinctive and unique | 5 | 5 | 5 | 5 | 3 |
| Scores (1= very poor/ 5 = very good) | | | | | |
| Total Score | 40 | 41 | 42 | 38 | 13 |
| Average Score | 4 | 5 | 5 | 4 | 1 |

Conclusion

2.2.6 When all three levels of assessment for strategic, planning and economic contribution are taken together, all options with the exception of the do-nothing option score very highly. This is because each option was generated with the key strategic development principles in mind. These can be directly referenced in the various key policy documents at local, borough wide and regional levels.

The table below reveals the composite score.

| Strategic Contribution | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical remodelling | Option 5 Do Nothing |
|--|--|----------------------------------|---------------------------------------|------------------------------------|---------------------------|
| Ultimate objectives of the RSS | 4 | 4 | 4 | 4 | 2 |
| Intermediate objectives of the Core Strategy | 4 | 4 | 4 | 4 | 2 |
| Strategic development principles | 4 | 5 | 5 | 4 | 1 |
| TOTALS | 12 | 13 | 13 | 12 | 5 |

2.3 High Level Financial Assessment

- 2.3.1 This criterion broadly considers project cost and potential capital value and an attempt is made to consider any cost or profit to the public or private sector. More details of the financial appraisals carried out can be found in the Appendix 4.

Project Costs

- 2.3.2 Each of the four options were costed and their viability appraised against the potential value created from the proposed new employment, housing and retail/leisure development. It is not possible to cost Option 5 – Do Nothing – as this involves the incremental and uncoordinated development of the site by different landowners.

Costs were split into four separate areas –

- the costs of remediation prior to development,
- the costs of developing all the proposed uses,
- the cost of new road infrastructure to serve the area and
- the costs of any flood defences required.

Contamination/ Remediation Costs

- 2.3.3 The preliminary estimated Contamination Remediation Costs for the Staveley Works Corridor options have been calculated in accordance with the English Partnerships Best Practice Note 27: 'Contamination and Dereliction Remediation Costs' (revised February 2008).

The cost estimates are based on:

- Previous site use (Baseline Study)
- Proposed end use (the four options)
- Area of the site. This marries the zones indicated in the AECOM Desk study report and any potential future land uses.

- 2.3.4 For the purpose of this appraisal the following assumptions have been made:

- These costs are indicative abnormal costs only and are for preliminary guidance only;
- The costs do not cover geotechnical issues or demolition of existing buildings or infrastructure;

- The sensitivity of the water resources at the site is high due to the proximity of the River Rother;
- The costs are based on 2007 figures therefore, an allowance should ultimately be made for inflation and possible changes to legislation before works are undertaken, which may be a number of years;
- The costs assume that no Landfill Tax is paid on material disposed of in landfill. Landfill tax is now applicable to all material placed in landfill, however, the costs assume only small quantities of material will be deposited in landfill and the majority of remediation works will treat, contamination on site; and
- Please refer to English Partnerships Best Practice Note 27: 'Contamination and Dereliction Remediation Costs' (revised February 2008) page 9 for a list of qualifications that also apply to the estimated costs.

2.3.5 The estimated Contamination/Remediation costs are presented below. A complete breakdown is in Appendix 4:

| | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling |
|--|--|---|--|---|
| Contamination/remediation costs | £65,096,638 | £67,895,361 | £72,624,613 | £67,535,985 |

Development Costs

2.3.6 To identify realistic development costs, BE Group excluded areas of land unlikely to be brought forward for development. This includes the 5ha Mallinckrodt (Covidien) facility (Mallinckrodt will be retaining this site for at least the next few years). For all uses (with the exception of the high density mixed core) site areas have been reduced by 20% to provide a net figure. This allows for the provision of distributor roads, public open space, structural landscaping and car parking serving each use. In the Mixed Core, it is assumed that 2 ha will be given over to retail, leisure, community/voluntary sector uses and the rest for housing.

2.3.7 For the remaining land, BE Group has estimated the floorspace which will be created by each use, in each option (discussed below). The floorspace created is then multiplied against a construction cost per sqm (based on average construction costs for past schemes). Construction costs include fees and the cost of finance, but do not take into account developer profit.

2.3.8 All four options require the acquisition of land. Land costs have not been included in the initial appraisal in order to identify a residual value that takes into account the exceptional constraints on the site (in terms of flood risk and remediation). However it must be acknowledged that any redevelopment would should ideally generate sufficient land value to make it an attractive option to the landowners. Costs are summarised in the table below:

| | |
|-------------------------------|-----------|
| Residential | |
| Construction Cost | £1185/sqm |
| Fees/Finance (+ 15 percent) | £1362/sqm |
| Employment | |
| Construction Cost | £595/sqm |
| Fees/Finance (+ 15 percent) | £685/sqm |
| Mixed Community 'Hub' | |
| Construction Cost | £1290/sqm |
| Fees/Finance (+ 15 percent) | £1485/sqm |
| <i>Source: BE Group, 2009</i> | |

2.3.9 Using these costs, a total development cost for each option is identified:

| | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling |
|--------------------------|--|---|--|---|
| Development costs | £170,251,000 | £270,051,000 | £325,800,000 | £144,100,000 |

Road/Infrastructure Costs

2.3.10 Road construction costs are based upon figures given in the Spon's 2009 Price Book. They include for the cost of earthworks, structures, drainage, pavements, line markings, reflective studs, footway signs, lighting, fencing and barrier works. Road costs are based upon an assumed 800mm construction comprising a 40mm wearing course, a 60mm base course, a 200mm road base, a 150mm subbase and a 350mm capping layer. Footways are of 2m width and are provided on both sides of the carriageway throughout its length.

2.3.11 Costs do not include geotechnical remediation (this is covered in Remediation Costs), and have been factored upwards by around 20% to allow for overspend and contingencies. This figure is based on

experience and is designed to give a worst case scenario rather than a detailed budget limit. Although every attempt has been made to provide a realistic idea of costs and quantities, AECOM are not cost consultants and estimates should be treated as the high level indicative costs that they were intended to be

2.3.12 These assumptions are independent of the options since each of these has roughly similar carriageway lengths and requirements.

2.3.13 Costs for road and infrastructure provision include:

- 3600m single-carriageway central spine road
- Upgrade to Works Road
- Two additional 500m access roads, serving new developments
- Four signal junctions
- Road bridge, crossing disused railway.

2.3.14 This gives an overall cost of £12 million to £15 million, for each option.

Flood Defence Costs

2.3.15 The cost of providing flood defence for each of the four options is shown below. These costs include flood compensation storage, remodelling of the existing watercourse (Option Two only) and wetland creation (Options Three and Four). Options Three and Four would also require the purchase of 12 ha of land. For the purposes of appraisal, this has been assigned industrial value (£495,000/ha), although in reality the value is likely to be reduced to reflect the on-site constraints, including lack of servicing, ground conditions, existing flood risk and access.

| | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling |
|---------------------|--|---|--|---|
| Flood defence costs | £665,000 | £2,200,000 | £7,192,000 | £7,192,000 |

Total Project Cost

These four costs are combined to provide a total project cost for each option:

| | Option 1 Working with | Option 2 Landscape | Option 3 Maximising | Option 4 Radical |
|--|----------------------------------|-------------------------------|--------------------------------|-----------------------------|
|--|----------------------------------|-------------------------------|--------------------------------|-----------------------------|

| | the Constraints | Pockets | Development | Remodelling |
|----------------------------|------------------------|----------------|--------------------|--------------------|
| Total project costs | £248,012,638 | £352,146,361 | £417,616,613 | £230,827,985 |

Capital Values

2.3.16 The Capital (freehold) Values are derived from baseline research. All discount the worst affects of the recession and assume an improving market. For housing, the assessment takes the average house price for a mid-range property in Staveley (£115,000) and increases that price by 9% (closer to district-wide averages) as the new build, good quality housing produced will be of slightly higher value than the Staveley average. In line with Local Plan policy, 35% of the housing provided in each option will be affordable, and will have a lower capital value. The capital values applied to each use are illustrated below.

| | |
|-------------------------------|----------------------|
| Residential | |
| | Affordable £1290/sqm |
| | Private £1995/sqm |
| Employment | £800/sqm |
| Community | £1290/sqm |
| <i>Source: BE Group, 2009</i> | |

2.3.17 These values per sqm are applied to the floorspace proposed to give a total capital value for each Option. Options Two and Three would deliver the highest values, primarily due to their large housing and community allocations (the highest value uses). Option Four would produce the smallest amount of residential and employment floorspace, so delivers the smallest value, less than half that of Option Three. In Option 5 – Do Nothing – the capital values generated are likely to be very small. Landowners will pursue individual projects, some of which may generate high values, however the overall value generated for the AAP site will be less than if a combined scheme (included well planned uses, appropriate infrastructure and good building design) can be delivered.

| | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling |
|-----------------------|--|-----------------------------------|--|-------------------------------------|
| Capital Values | £232,288,000 | £378,322,000 | £454,316,600 | £196,420,000 |

Net Profit/Loss

2.3.18 The costs and values generated by each option are shown in table form below.

| | Option 1 | Option 2 | Option 3 | Option 4 |
|---------------------------------|--------------|--------------|--------------|--------------|
| Costs | | | | |
| Remediation | £65,096,638 | £67,895,361 | £72,624,613 | £67,535,985 |
| Development | £170,251,000 | £270,051,000 | £325,800,000 | £144,100,000 |
| Road/ Infrastructure | £12,000,000 | £12,000,000 | £12,000,000 | £12,000,000 |
| Flood Defence | £665,000 | £2,200,000 | £7,192,000 | £7,192,000 |
| Total Project Cost | £248,012,638 | £352,146,361 | £417,616,613 | £230,827,985 |
| Value | | | | |
| Capital Value | £232,288,000 | £378,322,000 | £449,316,000 | £196,420,000 |
| Profit/Loss | £-15,724,638 | £26,175,639 | £31,699,387 | £-34,407,985 |

Conclusion

2.3.19 A high level financial assessment of each option has revealed a significant amount of investment can be generated on the site, however to do this expensive mitigation and remediation measures are required. It is clear that regeneration of the Staveley Works Corridor may necessitate substantial gap funding under options 1 and 4, primarily because of the strategic constraints such as flood risk mitigation and the simple fact that the site has to be opened up for access. If regeneration is to occur under these options, the gap funding requirement will need to be reduced significantly. It is option 3 which provides the best value for money following this broad brush high level financial assessment.

| High Level Financial Assessment | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling |
|---------------------------------|--|-------------------------------|------------------------------------|---------------------------------|
| Project Cost | 4 | 2 | 1 | 3 |
| Capital Value | 3 | 4 | 5 | 1 |
| Net Cost/profit | 1 | 4 | 5 | 1 |
| Scores (1=very low 5=very good) | | | | |

2.4 Local Acceptability

- 2.4.1 It is important to assess the public's response to each option and include that response in any evaluation process. The four development options were used as part of the core strategy consultation process, as well as part of a general consultation within the neighbourhoods surrounding the Staveley Works Corridor. The stakeholder group has been integral throughout the process, but it is considered important to make a distinction between the two.

Community Consultation

- 2.4.2. The first borough-wide community consultation event on the Staveley Works corridor was a non-statutory 6 week public consultation event held between 25 June 2009 to 6 Aug 2009 in parallel with Chesterfield's Core Strategy Issues and Options. This enabled community and stakeholder members (including landowners) to meet with Council representatives to discuss the proposals being prepared for the area, and to review and comment on the Baseline Report; Issues and Options Reports; and Sustainability Appraisal Scoping Report.
- 2.4.3 As part of this process, the community members and stakeholders were asked to complete a questionnaire that would inform the consultant team working on behalf of the Council in the preparation of options for the site, whether they were satisfied with the vision and strategic objectives which would guide the overall options development; and particularly which options they favoured by ranking them. As regards to option 5, the general consensus from the community is that the site should be developed; that something must happen and therefore a do nothing option was unacceptable. The results of this are shown in the appendices.

Stakeholder Workshop

- 2.4.4 Stakeholders, including landowners and leaseholders within the Feasibility Study boundary site, were invited to a workshop at Chesterfield Borough Council's offices (20th November 2009) and asked to rate how well each of the options achieves or meets the emerging strategic objectives, identified to underpin options development.

Conclusion

- 2.4.5 The outcome of this element of the evaluation exercise shows that the neighbouring community and the stakeholders (comprising landowners and leaseholders) as expected have differing aspirations for the Staveley Works Corridor. The two views are polarized. The community aspires to a more landscaped or greener solution and appreciates the on-going greening of the site and the recolonisation of wildlife. The stakeholders consider the economic value of the corridor

as being the most important attribute. As a result of the scoring, both landscaped pockets and maximizing development were the most popular.

| Local Acceptability | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling | option 5 Do Nothing |
|---|--|---|--|---|--------------------------------|
| Community consultation Responses (25 th June – 6 th Aug 2009) | 2 | 3 | 2 | 1 | 1 |
| Stakeholder workshop 20 th July | 3 | 3 | 4 | 2 | 1 |
| Scores (1=very low 5=very good) | | | | | |

2.5 Deliverability (Risk)

2.5.1 This element of the appraisal attempts to consider how deliverable each option is in terms of risk. It addresses the strategic constraints highlighted in the Vision and Options Report. It assesses how each of the options responds to four key areas of risk. These are:

- **Transport Impact.** What are the costs and difficulties of installing the required infrastructure for each option?
- **Flood Risk Impact.** How responsive is each option to flood risk and does the option influence flood risk status elsewhere?
- **Landownership Issues.** How will landownership affect the deliverability of the options?
- **Finance Issues.** It is anticipated that whichever option is brought forward, it is likely that public funding will be required. How easily will this be secured?

Transportation Impact

2.5.2 The first three options – Working with the Constraints, Landscape Pockets, and Maximising Development – are broadly similar in terms of transportation infrastructure requirements. The strategic road follows the same indicative alignment and includes the same number of access points in all three cases. Similarly, each option includes a new rail station to be located at some point adjacent to Barrow Hill preferably to the west of the existing freight line junction. Foot and cycleway infrastructure is also roughly equivalent within these three options. Variations in cost may be found between these options in terms of different ground remediation and flood defence requirements, however these are to be considered separately and have little bearing on the cost of actual transport infrastructure required.

2.5.3 The fourth option – Radical Remodelling – is, as the name suggests, a higher intervention strategy. This option includes the provision of significant new landscape features including an artificial hill which the strategic road link and associated access roads will have to be aligned around. In addition, this option includes the closure of Works Road to general traffic and the conversion of this link to a public transport, walking and cycling route. As such, this option is deemed the most expensive and difficult to implement and has been ascribed a correspondingly low score in comparison with the others. Measures such as the rail station and footpath network are similar to the other three options but with the added difficulty of their having to integrate with the remodelled landscape further increasing the associated infrastructure cost.

2.5.4 The final option of Do Nothing is, by definition, the cheapest and easiest to progress since it involves no new transportation

infrastructure. Consequently, the only costs associated with this option are from maintaining the existing network and preserving the status quo. The highest score has therefore been assigned to the Do Nothing scenario, although it should be noted that the costs in terms of increased congestion on the A619 and the environmental and social impact of this has not been considered and may be considerably more in the long term than the costs of the improvement options.

- 2.5.5 Consequently, without the delivery of the new highway, delivery of development across the site will struggle to open up the site.

Flood Risk Impact

Option 1 - Working with the Constraints

- 2.5.6 There is an area of residential land use identified as being located within the floodplain around Works Road. It is likely that the Environment Agency will object to a planning application if the dwellings are located within the floodplain, as suggested by these plans. This is more likely, as with this option, there are areas of land within the area boundary that are less vulnerable (eg. public open space to the north east corner of the site) which are located within Flood Zone 1.
- 2.5.7 In addition, flood compensation storage will be required in this location. The volume of storage required depends on the building footprints, surrounding gardens and accesses, but looking at the plan, is likely to be able to be provided on site (so no extra land would need to be purchased).
- 2.5.8 Areas that have been identified as being floodplain on the map are currently flood zones. The proposed land uses in these areas, (such as boat houses and other infrastructure associated with water recreation) are considered "Water compatible" in PPS25, so are appropriate land uses.

Option 2 - Landscape Pockets

- 2.5.9 The radical remodelling of the river to the west of the area in option 2 is effectively undeliverable. This is based on the cost, and the practicalities of doing restoring the watercourse. The area shaded in green/grey on the option plan is currently at least 6m higher than the river bed. Excavation of this volume of earth is likely to be very expensive. Re-profiling of the surrounding land is also likely to be substantially expensive, as is the erosion protection that will be required along the length of river that is going to re-aligned. In addition the issues surrounding potential contaminated land on site will need to be addressed as part of this option.

- 2.5.10 There are significant off-site risks with pursuing this radical re-modelling option. If the river is altered, there is a significant risk of increasing the flood risk upstream of the site. Increasing flood risk off-site goes against all policy aims of PPS25, and should be avoided at all costs.
- 2.5.11 However, the other features of Option 2, with regards to the location of the housing outside the floodplain are excellent. Providing public open space in the flood plain areas will be an approach that is encouraged by the Environment Agency. If the radical remodelling of the watercourse was not part of this option, then this would score 5 in terms of deliverability of the flood risk issues.

Option 3 - Maximising Development

- 2.5.12 There is an area of residential land use identified as being located within the floodplain around Works Road. It is likely that the Environment Agency will object to the planning application if the dwellings are located within the floodplain, as suggested by these plans. This is more likely, as with this option, there are areas of land in the area boundary that are less vulnerable (i.e. public open space to the north east corner of the site) which are located within Flood Zone 1.
- 2.5.13 In addition, flood compensation storage will be required in this location. The volume of storage required depends on the building footprints, surrounding gardens and accesses. Looking at the plan, it is not likely to be able to provide this extra storage on site. This would mean that extra land would need to be purchased off site.
- 2.5.14 Areas that have been identified as being floodplain on the map are currently flood zones. The proposed land uses in these areas (with the exception of the residential area mentioned earlier) are considered “less vulnerable” (glasshouses) and “water compatible” (wetlands and public open space) in PPS25, so can be considered appropriate land uses for the flood risk evident in these areas. This is based on the assumption that the areas are not defined as “Functional Floodplain”.

Option 4 - Radical Remodelling

- 2.5.15 There is an area of residential land use identified as being located within the floodplain around Works Road. It is likely that the Environment Agency will object to the planning application if the dwellings are located within the floodplain, as suggested by these plans. This is more likely, as with this option, there are areas of land in the area boundary that are less vulnerable (i.e. public open space to the north east corner of the site) which are located within Flood Zone 1.

- 2.5.16 In addition, flood compensation storage will be required in this location. The volume of storage required depends on the building footprints, surrounding gardens and accesses. Looking at the plan, it is not likely to be able to provide this extra storage on site. This would mean that extra land would need to be purchased off site.
- 2.5.17 Areas that have been identified as being floodplain on the map are currently flood zones. The proposed land uses in these areas (with the exception of the residential area mentioned earlier) are considered “water compatible” (wetlands and public open space) in PPS25, so can be considered appropriate land uses for the flood risk evident in these areas.

Option 5 - Do Nothing

- 2.5.18 One of the underlying themes running throughout PPS25 is that any development should maintain the status quo. Development should not increase the flood risk to the site, nor increase the flood risk off site. As this option is Do Nothing, the current flooding regime will be maintained. As it stands, there are some buildings located within the floodplain, and they historically flood. In addition, Works Road currently floods. If no development was done in this area, then this flooding would continue. Conversely, areas of floodplain would be maintained downstream of Works Road, and would be naturally left to flood.

Landownership Issues

- 2.5.19 Complex land ownership issues exist across the site with a number of private freeholds and leaseholds. Landholdings suffer from flood risk, contamination, ground stability and access issues disparately. To ensure the burden of bringing forward sites for development, to secure regeneration within the framework of the preferred AAP, a Joint Venture Company (JVC) is likely required to lead the co-ordination of phasing, whilst equally absorbing costs and sharing the financial rewards of development, between all stakeholders. The AAP will provide a framework and a common vision in which the JVC can focus its efforts in a comprehensive way. Without an AAP, a JVC would struggle without the strategic framework to guide a development strategy. Development could go ahead in an ad-hoc manner, but land assembly and landownership issues would likely be more onerous in resolving. Each option scores poorly, but delivery of Option 5 – Do Nothing – is likely to be more disadvantaged without an AAP.

Finance Issues

- 2.5.20 A key deliverability concern is the ability to gain public finance to fill the significant development funding gaps identified for options 1 and 4. It is highly unlikely that the level of gap funding required could be secured from existing public sources. Regeneration agencies rarely

provide capital funding of more than £1m, unless to projects of national importance. For this reason these options score low for Finance Issues.

Conclusion

2.5.21 From the evaluation and appraisal, it is clear that the implementation of any option will involve relatively high risk. Each option responds to the different areas of risk in different ways. An obvious example is Option 1 - 'Working with the Constraints'. This option presents the least risk concerning flood risk impact whereas Option 2 – "Landscape Pockets" presents the most risk. Giving a score of 5 for least risk and 1 for high risk, it is possible to rudimentarily score each option. It is Option 1 – "Working with the Constraints" which appears to present the least risk, but option 3 also fares reasonably well.

| Deliverability (Risk) | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling | option 5 Do Nothing |
|---------------------------------|--|-----------------------------------|--|-------------------------------------|----------------------------|
| Transportation Impact | 3 | 3 | 3 | 1 | 4 |
| Flood Risk Impact | 4 | 1 | 3 | 3 | 3 |
| Land Ownership Issues | 2 | 2 | 2 | 2 | 1 |
| Finance Issues | 1 | 3 | 3 | 1 | 1 |
| Scores (1=very low 5=very good) | | | | | |

2.6 Regeneration Benefits

2.6.1 This section of the appraisal deals with hard factual evidence and its composite elements are based on some of the Key Performance Indicators which are used by the funding bodies as a direct output and measure of their investment. This section therefore covers:

- Hectares of land reused
- Potential job creation
- Numbers of new homes built
- Public/private gearing
- Floorspace creation

Hectares of Land Reused

2.6.2 From a simple measurement of the options:

Option 1 re-uses approximately 59ha of brownfield land

Option 2 re-uses approximately 88ha of brownfield land

Option 3 re-uses approximately 108ha of brownfield land

Option 4 re-uses approximately 50ha of brownfield land

Option 5 currently uses approximately 25ha of the overall brownfield site, not including greenfield land.

Potential Job Creation

2.6.3 Job creation figures are taken from the English Partnerships/Regional Development Agencies report 'Employment Densities: A Full Guide' (2001). This study indicates that one (new) job is created for every 34 sqm of general industrial space provided. The job creation figures do not include any jobs created by retail/leisure uses in the 'mixed hub', as the amount of floorspace provided by these uses has yet to be defined. Appraisal scoring indicates which options will create the greatest number of jobs.

2.6.4 Options One and Two deliver the same amount of employment floorspace (62,806 sqm) and therefore create the same number of jobs (1847). The employment floorspace proposed (and therefore the number of jobs created) in Option Three is almost double that of any other Option. The low level of floorspace provision in Option Four means that the number of jobs created (along with other regeneration benefits) is limited. It is not possible to clearly define the regeneration benefits of the 'Do Nothing' Option, however the floorspace delivered (and jobs created) are likely to be low, as landowners pursue

uncoordinated schemes based purely on their own aspirations. On the other hand, current employment floorspace is approximately 19ha (given 20% reduction in servicing areas) or 85,964 sqm existing floor area, based on the 2001 Guide.

2.6.5 Therefore, given the approximate measurements

Option 1 creates 1847 new jobs

Option 2 creates 1847 new jobs

Option 3 creates 3597 new jobs

Option 4 creates 1701 new jobs

Option 5 currently accommodates approximately 2527 existing jobs

Number of New Houses Built

2.6.6 From the approximate measurements and applying a density of around 40 -50 dph:

Option 1 – Working with the Constraints – provides 1360 homes

Option 2 – Landscape pockets – provides 2560 homes

Option 3 – Maximising Development – provides 2860 homes

Option 4 – Radical Remodelling – provides 1200 homes

For Option 5 – Do Nothing – residential is unlikely to be granted planning permission unless within the framework of an AAP or a comprehensive Development Framework.

Floor Space Creation

2.6.10 Housing floor space figures assume an average density of 40 dph and 75 sq.m per dwelling (an average size for a mix of apartments and townhouses). This gives an approximate density of 3000 sq.m/ha. The dominant employment use is likely to be general industrial units of 929 sq.m each, giving a density of 4132 sq.m/ha. Community uses are given a density of 1700 sq.m/ha, an average density for retail space. The options which produce the most floor space (for all uses) are scored highest.

2.6.11 Options Two and Three would deliver the most floor space (200,000-300,000 sqm). Option three would provide the highest housing and employment floor space areas. In the case of Option Two, total floor space is boosted by a large housing allocation, both across the site and in the Central Core. Option Four has the lowest floor space provision, both overall and for employment uses (particularly once the

Mallinckrodt site is excluded). As discussed, the floor space created by the Do Nothing Option is likely to be low.

2.6.12 Therefore, again based on the approximate measurements floor area for each option equates to:

Option 1 = 72,206 sqm

Option 2 = 225,806 sqm

Option 3 = 299,707 sqm

Option 4 = 134,707 sqm

Option 5 = no new floorspace created – approximately 82,460 sqm exists.

Conclusion

2.6.13 Option 3, Maximising Development out performs any other option. It provides the greatest regeneration benefits in spite of requiring the largest amount of gap funding and potential public sector support both financially and as a consequence other resources. Option 3 scores the maximum available points in this section

| Regeneration Benefits | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling | option 5 Do Nothing |
|---------------------------------|---------------------------------------|----------------------------|---------------------------------|------------------------------|---------------------|
| Hectares of Land Reused | 3 | 4 | 5 | 2 | 1 |
| Potential Job Creation | 3 | 3 | 5 | 3 | 4 |
| Number of New Houses Built | 2 | 5 | 5 | 2 | 1 |
| Floor Space Creation | 2 | 4 | 5 | 3 | 2 |
| Scores (1=very low 5=very good) | | | | | |

2.7 Sustainability Assessment

2.7.1 It is important to assess how each option performs when the various criteria derived from the separate sustainability assessment are applied. The sustainability objectives are taken from the separate sustainability appraisal, along with much of the information from this

study. These are directly scored using the familiar criteria of 1 point for poor and 5 points for excellent.

Option 1 – Working with the Constraints

- 2.7.2 This option involves development of the site but working within the sites constraints, limiting the quantitative development potential of the site. This option scores positively with an overall score of 19.
- 2.7.3 The positive elements of this option relate to the provision of new development, such as housing, employment and a central mixed use hub and linkages that connect them to the surrounding area. This not only allows the site to create a sustainable mixed development but also to make the surrounding communities more sustainable through links to new local services and employment. The creation of new linkages provides a better opportunity for the site to be served by bus as well as the proposed pedestrian and cycle links, promoting sustainable transport. By not developing the constrained areas, it means large areas can be left to accommodate green infrastructure and natural wetland/flood water storage. This has significant benefits including for biodiversity, landscape, management flood risk and recreation and also provides urban cool space. By providing the mixed use hub in the Works Road area, there is a good chance that existing heritage buildings can be integrated into the varied townscape that mixed use development provides. Also, by working with existing features, natural features such as the canal and river are enhanced by this option. It also provides the opportunity for built infrastructure to be developed that can both mitigate and adapt to the challenges of climate change through high levels of energy efficiency leading to a reduction in greenhouse gas emissions associated with building operation, and adapting to high summer temperatures, drought and intense precipitation. New development will also provide the opportunity to ensure development is equipped for increased levels of recycling. Another positive element of this option is the extensive hydroelectric generation (2 locations) and biomass production.
- 2.7.4 In terms of negative effects, the site's most contaminated sites are not developed, thus they are unlikely to be remediated, leaving an environmental problem at the site. Also extensive new development will result in use of resources with associated negative impacts, although these could be developed using sustainable processes and from sustainable sources.

Option 2 – Landscape Pockets

- 2.7.5 This option involves more extensive development of the site than option 1 although it still largely works within the site's development constraints such as contaminated land and flood plain. This option scores positively with an overall score of 25.

- 2.7.6 It includes quite extensive housing development (54ha), the second highest of the 4 options. This provides the opportunity to significantly contribute to improving housing mix in the area. The local centre is located close to Barrow Hill, providing opportunity for Barrow Hill to benefit from new community facilities developed as part of the redevelopment of the AAP. The location of the mixed use core in the Works Road area also allows opportunity for some of the heritage buildings in this area to be retained and reused. The proposals also include significant landscape focus, retaining and enhancing natural habitats and landscape features along the river corridor and developing leisure and recreation by having an outdoor tourism related focus. By widening the flood terrace and creation of wetlands this option enhances biodiversity, and minimises flood risk, ensuring the site can adapt to the challenges of climate change that are likely to include increased flood risk. This option includes space for biomass production and hydroelectric generation, providing on site renewable energy which will help the borough reduce its reliance on renewable energy and to mitigate against future climate change, and in addition the scale of new development proposed in this option can significantly contribute to reduction in emissions associated with operation of buildings in the borough if new development is designed to high energy efficiency standards. This option includes the highest amount of employment land of the 4 options, therefore providing excellent access to employment for both the new development and surrounding existing development, with significant scope for enterprise and creation of new businesses, particularly in new sectors like renewable energy.
- 2.7.7 In terms of negatives, this option avoids development of contaminated land and thus merely avoids, rather than rectifies the problem. In addition, this option proposes the second most extensive area of urban development, after option 3, thus this will inevitably result in use of natural resources with associated negative impacts. It also proposes the least amount of green landscape area alongside option 3, thus associated benefits such as for biodiversity are less prominent than in options 1 and 4, although it should be noted the areas that are highlighted as being most ecologically rich have been retained as landscaped green space in this option.

Option 3 – Maximising Development

- 2.7.8 This option involves more extensive development of the site, developing constrained areas of the site such as areas of contaminated and unstable land, increasing the quantitative development potential of the site. This option scores positively with an overall score of 25. The positive elements of this option relate to the provision of significant new development, far greater than the other options, such as housing, employment, a central mixed use hub and linkages that connect them to the surrounding area. This amplifies the positive benefits of Option B (and D) in relation to:

- The opportunity to create a new sustainable development and improve the sustainability of the surrounding neighbourhoods through new employment, housing and service provision.
- The opportunity for built infrastructure to be developed that can both mitigate and adapt to the challenges of climate change through high levels of energy efficiency leading to a reduction in greenhouse gas emissions associated with building operation, and adapting to high summer temperatures, drought and intense precipitation.
- The opportunity to ensure development is equipped for increased levels of recycling.
- The creation of new linkages provides better opportunity for the site to be served by bus as well as the proposed pedestrian and cycle links, promoting sustainable transport. Higher population, compared to Options B and D increases the viability of new bus services serving the site, improving sustainable transport offer.

2.7.9 While this option does not propose as much greenspace as the other options, it does provide for improvement of greenspace in the form of informal recreation and wetlands. Furthermore this option will see remediation of areas of the site, reducing the amount of polluted land, which Option 1 is less likely to achieve. This has significant benefits including for biodiversity, landscape, management flood risk and recreation and also provides urban cool space, but clearly not as extensively as in Options 1 and 4.

2.7.10 Another positive element of this option is the hydroelectric generation (2 locations), although this option does not provide biomass production. This option does provide the opportunity to improve the setting of the Barrow Hill conservation area through the design of the residential development at the boundary with Barrow Hill. Also, this option improves the quality of the environment along natural/heritage features including the canal and river. This option however, locates residential development in what is currently the Works Road area; there is a possibility that existing heritage buildings will not be easily integrated into the townscape of a residential development, resulting in a negative impact. In addition, this option proposes the most extensive development thus this will inevitably result in use of natural resources with associated negative impacts.

Option 4 – Radical Remodelling

2.7.11 This option involves development of the site to create a dedicated green core, allowing the site to have potential to secure Green Park status. This sees the majority of the development located to the east of the site and limiting the quantitative development potential of the site. This option scores positively with an overall score of 21.

- 2.7.12 The positive elements of this option relate to the provision of new development, such as housing, employment and a mixed use hub and linkages that connect them to the surrounding area. This allows the site to not only create a sustainable mixed development on the site but also make the surrounding communities more sustainable through links to new local service and employment provision. The creation of new linkages provides better opportunity for the site to be served by bus as well as the proposed pedestrian and cycle links, promoting sustainable transport. With this option focusing development to the east, surrounding neighbourhoods to the west are less likely to benefit from them, thus not enhancing the sustainability of these communities.
- 2.7.13 New development also provides the opportunity for built infrastructure to be developed that can both mitigate and adapt to the challenges of climate change through high levels of energy efficiency leading to a reduction in greenhouse gas emissions associated with building operation, and adapting to high summer temperatures, drought and intense precipitation. New development will also provide the opportunity to ensure development is equipped for increased levels of recycling.
- 2.7.14 The focus of this option is to create a green hub which delivers significant benefits. This includes provision of habitats for biodiversity, landscape enhancements, incorporation of management flood risk and recreation and also provides urban cool space. There are clear benefits to the canal in terms of environmental improvements and the river, in terms of reinstating its natural course, with landscape, biodiversity and flood risk benefits. The heritage buildings in the Works Road area are located in the green core. While in principle these buildings can remain in the green core, their purpose will be limited, putting them at risk of having a lack of purpose and thus lacking investment and falling into disrepair.
- 2.7.15 In terms of negative effects, clearly extensive new development will result in use of resources with associated negative impacts. This option also does not accommodate a significant renewable energy source and does not provide biomass as in Options 1 and 3.

Option 5 – Do Nothing

- 2.7.16 This option involves not preparing a plan for the site and allowing it to develop according to the market. The site has been in decline in terms of economic use and quality of environment for many years. Of the few remaining uses on the site, the main user Mallinckrodt Chemical Works, is due to close the site in the near future; leaving only small scale uses in the buildings along Works Road. Bearing this in mind, together with the development constraints of the site, it is unlikely the market will naturally develop the site for high quality uses or drastically improve the physical environment of the site. Consequently this site scores very poorly against the SA objectives,

with a score of 0, with no positive impacts. The reason the site does not score negatively is because it is unlikely any significant development will occur at the site that already has very little on it, so overall it is unlikely it can actively contribute or detract from the SA objectives.

Conclusion.

2.7.17 As with several other sections, the options fare differently according to the twelve individual assessment criteria of the sustainability appraisal. When the scores are added for each option and an average taken, all performed reasonably well, with the obvious exception of the do nothing option. This is possibly explained by the fact that subconsciously, the options have been developed with a basic inherent appreciation of the importance of sustainability in all its forms. However, option 2 and 3 appear to generate the best response to sustainability criteria.

| SA Objectives | Option 1 | Option 2 | Option 3 | Option 4 | Option 5 |
|---|----------|----------|----------|----------|----------|
| To ensure that housing stock meets the needs of all communities in the Borough | 1 | 2 | 2 | 1 | 0 |
| To improve health and reduce health inequalities | 2 | 3 | 3 | 1 | 0 |
| To create sustainable communities | 1 | 2 | 2 | 1 | 0 |
| To protect and manage the cultural heritage of the Borough | 2 | 2 | 0 | 1 | 0 |
| To protect and enhance biodiversity | 2 | 1 | 1 | 2 | 0 |
| Protect and manage the landscape and townscape of Chesterfield. | 0 | 1 | 1 | 2 | |
| To manage prudently the natural resources of the region including water, air quality, soil and minerals | 0 | 1 | 1 | 0 | 0 |
| Plan for the anticipated different levels of climate change | 3 | 3 | 3 | 3 | 0 |
| Minimise the Borough's contribution to climate change | 1 | 2 | 2 | 1 | 0 |
| Minimise the environmental impacts of waste and pollution | 2 | 3 | 3 | 2 | 0 |
| Develop a strong culture of enterprise and innovation | 3 | 3 | 4 | 3 | 0 |
| Improve accessibility to jobs and services | 2 | 2 | 2 | 2 | 0 |

| | | | | | |
|---------------------------------|----|----|----|----|---|
| Scores (1=very low 5=very good) | | | | | |
| Total Score | 19 | 25 | 25 | 21 | 0 |

2.8 Transportation Benefits

2.8.1 This final assessment criterion has been included because of the absolute need to open up the Staveley Works Corridor for regeneration purposes. The site itself is currently inaccessible for investment on a great scale. Works Road is the only vehicular route across the site. The highways around the site are also poor and inadequate for large vehicles or increased vehicular movements. There are informal footways and the canal towpath provides a pleasant ramble to the south. The Transpennine Trail also passes through the site. It is therefore imperative that appropriate routes are constructed into the Staveley Works Corridor to facilitate regeneration. These should be for vehicles, public transport pedestrians and cyclists. Any investment in the movement network should have a positive effect on the existing highways network in the adjacent neighbourhoods.

Option 1 - Working with the Constraints

2.8.2 Option 1 scores well on the relief of congestion, delay and air quality due to the beneficial effect of relieving the A619. Option 1 also scores well in terms of pedestrian and cycle provision since it is a lower intervention option which does not contain as much pedestrian unfriendly industry as Option 3, and in terms of integration with public transport, since it integrates the rail station with Barrow Hill and the proposed mixed use hub. Option 1 is the lowest intervention option and therefore does not score well in terms of development and regeneration, however it does score highly in terms of connectivity since it benefits all modes of transport.

Option 2 - Landscape Pockets

2.8.3 Option 2 is very similar to option 1 from a transport perspective and scores equivalently in almost every category. An exception to this is development and regeneration for which Option 2 ranks joint second with Option 4 due to their broadly similar levels of transport development.

Option 3 - Maximising Development

2.8.4 Option 3 scores as highly as the other options in terms of congestion, delay and air quality relief, however it is the high development scenario and consequently does not score as highly in terms of pedestrian, cycle and public transport provision – the low score for the latter being largely due to the poorly integrated location of the rail station. Option 3 scores very highly in terms of development and regeneration since it represents a maximum benefit in terms of

productive land use and residential space, however its levels of connectivity are not as high as other options due to the poor levels of integration between Barrow Hill, the rail station and the mixed use development hub.

Option 4 - Radical Remodelling

2.8.5 As with the other options, Option 4 also provides a strategic alternative to the A619 and therefore scores equivalently in terms of congestion, delay and air quality relief. Its focus towards the east limits pedestrian and cycle accessibility towards the west of the site leading to a reduced score in this category, however it provides a dedicated public transport link and as such scores more highly in this area. Option 4 is broadly equivalent to Option 2 in terms of transport development and regeneration, however connectivity is considered poor for Option 4 due to the removal of Works Road as a general traffic route and the possibility of further isolating Barrow Hill as a result.

Option 5 - Do Nothing

2.8.6 The final option involves making no improvements to the transport infrastructure and levels of connectivity through and around the site. Whilst this is by definition overwhelmingly the cheapest option, it does not produce any effect on the levels of congestion, delay, and air quality, or the provision for pedestrians, cyclists, or public transport. In addition, there is no enhancement in connectivity and consequently no support for increased residential, commercial, or retail activity on the site. As such, the Do Nothing option scores the minimum possible amount in each category.

Conclusion.

2.8.7 It can be concluded that the construction of the route through the site, from Hall Lane to beyond Works Road, as well as actually opening the site for development, would have a very positive effect on the current congestion, delay and air quality problems experienced on the existing local highway network. All options bring benefits for both pedestrians and cyclists. Public transport integration is achieved. Option 3 better services development opportunities, whilst option 1 improves connectivity. All options score highly but it is option 1 which scores the highest.

| Transportation Benefits | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling | option 5 Do Nothing |
|---------------------------------------|--|-----------------------------------|--|-------------------------------------|----------------------------|
| Improvement of congestion/ delay/ air | 5 | 5 | 5 | 5 | 1 |

| | | | | | |
|--|---|---|---|---|---|
| quality | | | | | |
| Benefits for pedestrians and cyclists | 4 | 4 | 3 | 3 | 1 |
| Integration with public transport | 3 | 3 | 1 | 3 | 1 |
| Facilitation of development and regeneration | 2 | 3 | 4 | 3 | 1 |
| Improvements in connectivity | 5 | 3 | 4 | 3 | 1 |
| Scores (1=very low 5=very good) | | | | | |

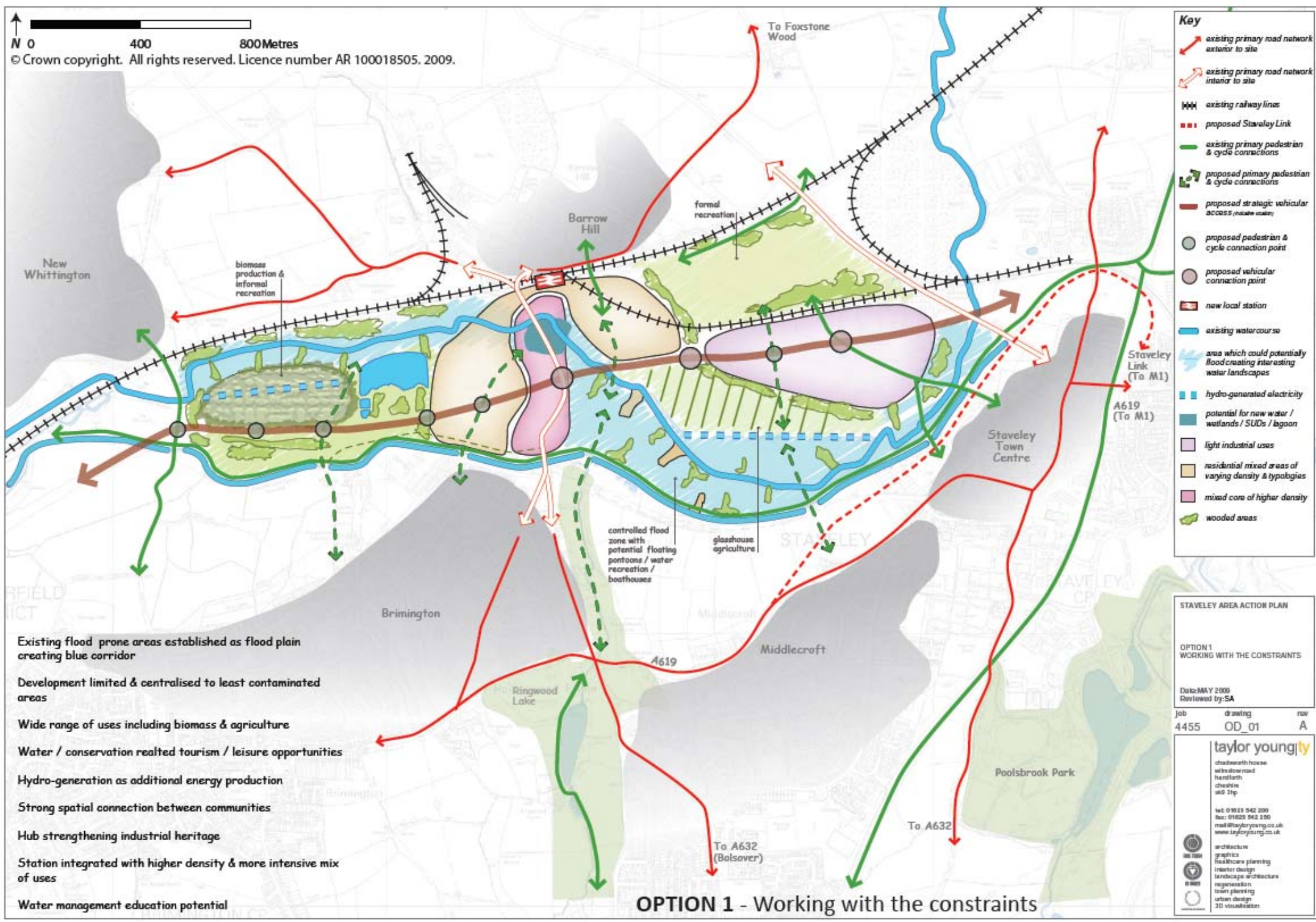
2.9 Conclusions to the Options Appraisal

2.9.1 After all criteria have been considered, using an appraisal process broadly in line with the Green Book Appraisal, as recommended by Government Office and used by the Regional Development Agencies, the best fit with the vision and objectives for Staveley Works Corridor, is Option 3 – Maximising Development.

2.9.2 Option 3 scores particularly highly for its strategic contribution, local acceptability, its regeneration benefits and when assessed for sustainability. It also supports the general view held by the wider community that the Borough's brownfield land is developed at the expense of any greenfield sites. It is also in line with national planning policy.

2.9.3 Option 3 provides the highest value but it is also the most costly to deliver. Its attractiveness as a preferred option is tempered by the fact that the estimated cost of delivery is more than the estimated value generated and therefore this shortfall will require substantial gap funding. It is essential that the costs to deliver option 3 are substantially reduced. This also has a knock on effect on risk. Option 3 carries a significant amount of risk, primarily caused by financial risk underpinned by the fact that it will require substantial gap funding. The transportation benefits of implementing option 3 can be substantially improved.

2.9.4 The do nothing option scores very poorly. It fails to gain significant scores in any category. At a simplistic level it serves to show that doing nothing is not a option for the Staveley Road Corridor. It is therefore proposed that implementation of the Vision for the Staveley Works Corridor should be based on option 3 and implemented in a flexible, phased manner so that if funding is not forthcoming in the future, the redevelopment of the area can still proceed in a reduced form.



- Existing flood prone areas established as flood plain creating blue corridor
- Development limited & centralised to least contaminated areas
- Wide range of uses including biomass & agriculture
- Water / conservation related tourism / leisure opportunities
- Hydro-generation as additional energy production
- Strong spatial connection between communities
- Hub strengthening industrial heritage
- Station integrated with higher density & more intensive mix of uses
- Water management education potential

OPTION 1 - Working with the constraints

Key

- existing primary road network exterior to site
- existing primary road network interior to site
- existing railway lines
- proposed Staveley Link
- existing primary pedestrian & cycle connections
- proposed primary pedestrian & cycle connections
- proposed strategic vehicular access (estate scale)
- proposed pedestrian & cycle connection point
- proposed vehicular connection point
- new local station
- existing watercourse
- area which could potentially flood/creating interesting water landscapes
- hydro-generated electricity
- potential for new water / wetlands / SUDs / lagoon
- light industrial uses
- residential mixed areas of varying density & typologies
- mixed core of higher density
- wooded areas

STAVELEY AREA ACTION PLAN

OPTION 1
WORKING WITH THE CONSTRAINTS

Date: MAY 2009
Reviewed by: SA

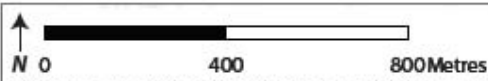
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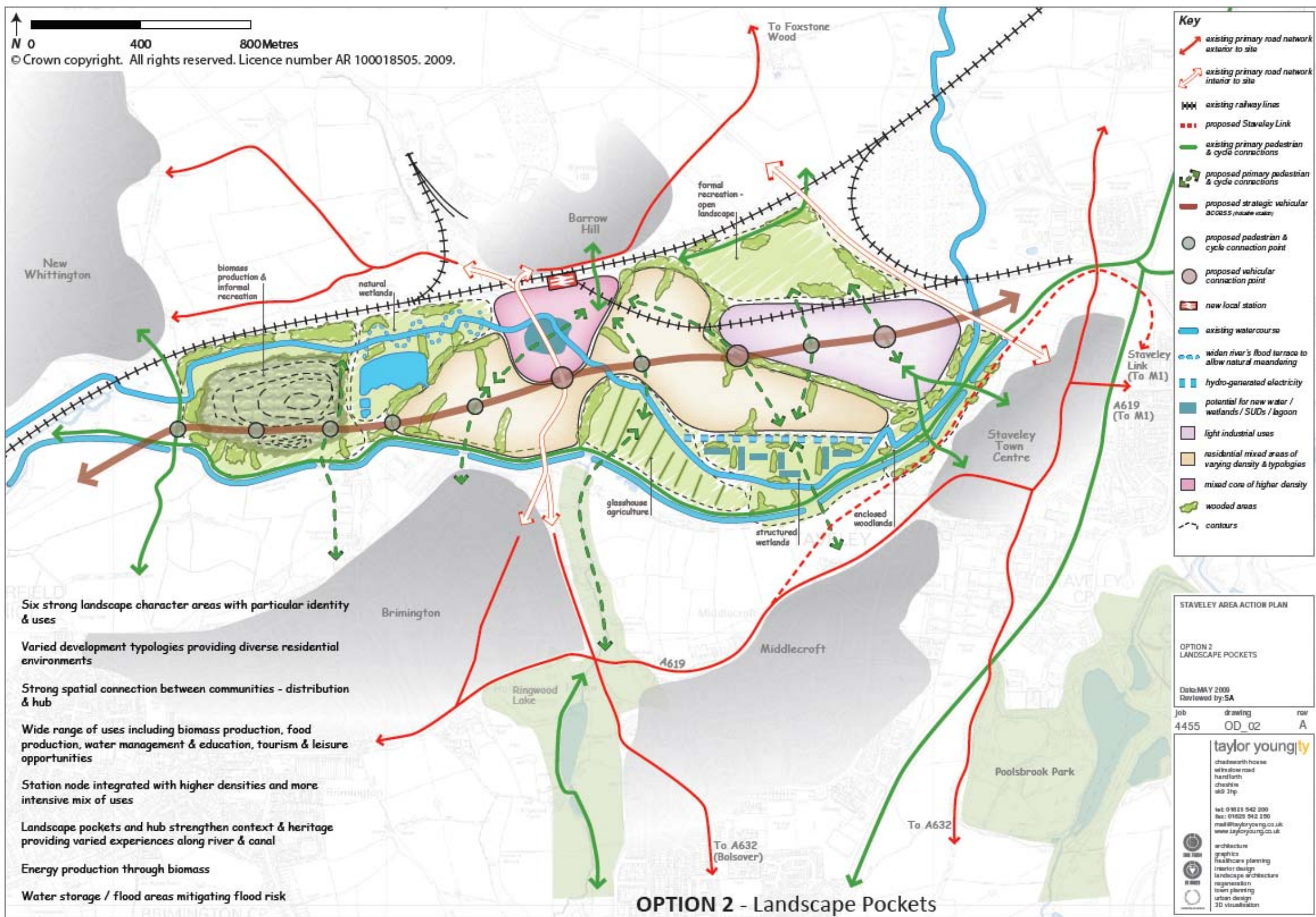
chadsworth house
winkfield road
hardfirth
cheshire
SK9 7HP

tel: 01625 542 200
fax: 01625 542 200
mail: info@tayloryoung.co.uk
www: www.tayloryoung.co.uk

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- urban design
- 3D visualisation



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- Key**
- existing primary road network exterior to site
 - existing primary road network interior to site
 - existing railway lines
 - proposed Staveley Link
 - existing primary pedestrian & cycle connections
 - proposed primary pedestrian & cycle connections
 - proposed strategic vehicular access (estate access)
 - proposed pedestrian & cycle connection point
 - proposed vehicular connection point
 - new local station
 - existing watercourse
 - widen river's flood terrace to allow natural meandering
 - hydro-generated electricity
 - potential for new water / wetlands / SUDs / lagoon
 - light industrial uses
 - residential mixed areas of varying density & typologies
 - mixed core of higher density
 - wooded areas
 - contours

- Six strong landscape character areas with particular identity & uses
- Varied development typologies providing diverse residential environments
- Strong spatial connection between communities - distribution & hub
- Wide range of uses including biomass production, food production, water management & education, tourism & leisure opportunities
- Station node integrated with higher densities and more intensive mix of uses
- Landscape pockets and hub strengthen context & heritage providing varied experiences along river & canal
- Energy production through biomass
- Water storage / flood areas mitigating flood risk

STAVELEY AREA ACTION PLAN

OPTION 2 LANDSCAPE POCKETS

Date: MAY 2009
Reviewed by: SA

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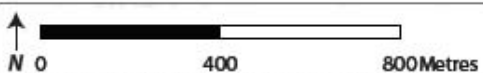
taylor young ty

chadsworth house
wilslow road
hardforth
chester
sk5 3tp

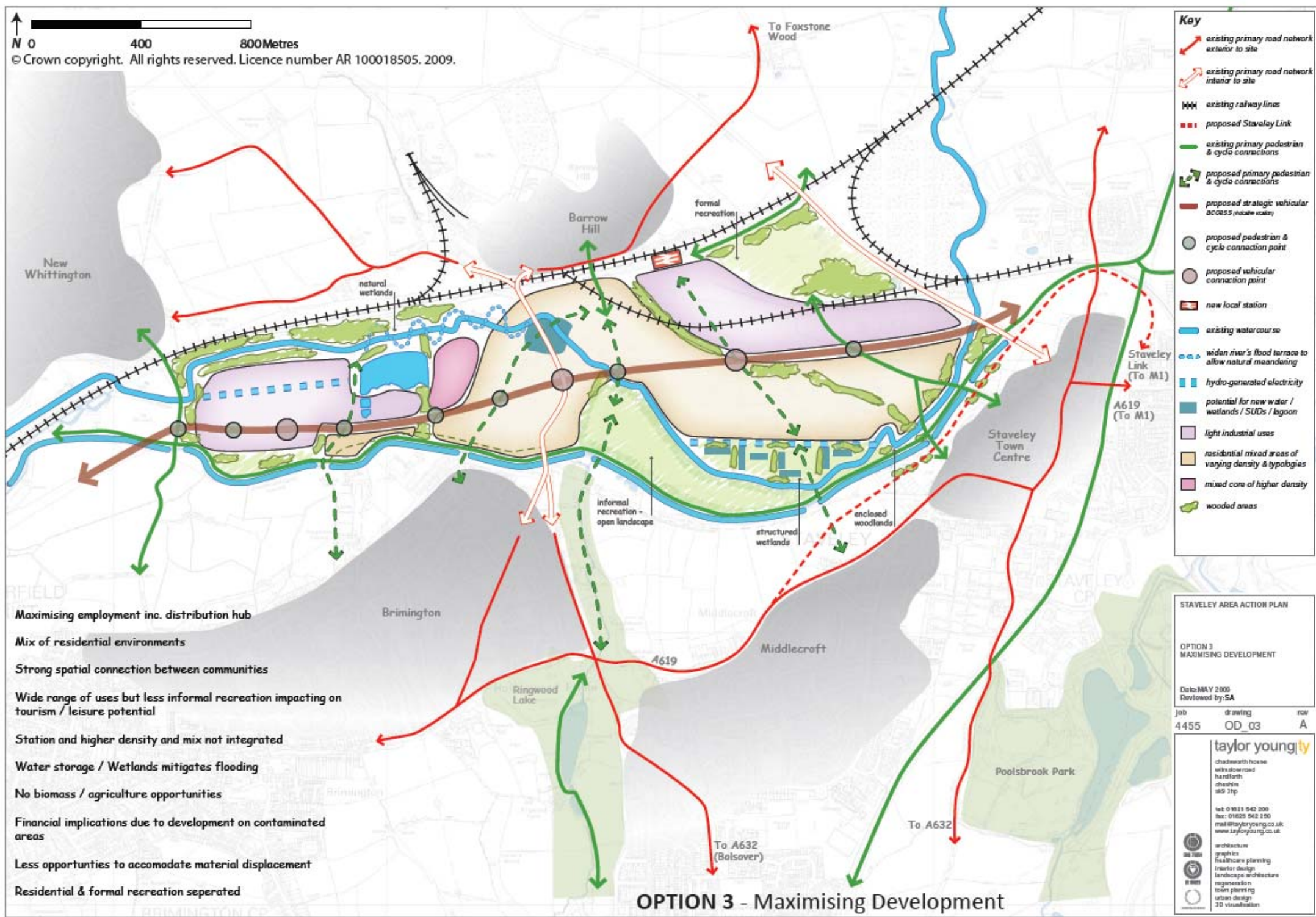
t: 01629 542 200
f: 01629 542 100
m: 01629 542 100
www.tayloryoung.co.uk

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OPTION 2 - Landscape Pockets



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Key

- existing primary road network exterior to site
- existing primary road network interior to site
- existing railway lines
- proposed Staveley Link
- existing primary pedestrian & cycle connections
- proposed primary pedestrian & cycle connections
- proposed strategic vehicular access (hatched scales)
- proposed pedestrian & cycle connection point
- proposed vehicular connection point
- new local station
- existing watercourse
- widen river's flood terrace to allow natural meandering
- hydro-generated electricity
- potential for new water / wetlands / SUDs / lagoon
- light industrial uses
- residential mixed areas of varying density & typologies
- mixed core of higher density
- wooded areas

- Maximising employment inc. distribution hub
- Mix of residential environments
- Strong spatial connection between communities
- Wide range of uses but less informal recreation impacting on tourism / leisure potential
- Station and higher density and mix not integrated
- Water storage / Wetlands mitigates flooding
- No biomass / agriculture opportunities
- Financial implications due to development on contaminated areas
- Less opportunities to accommodate material displacement
- Residential & formal recreation separated

STAVELEY AREA ACTION PLAN

OPTION 3
MAXIMISING DEVELOPMENT

Date: MAY 2009
Reviewed by: SA

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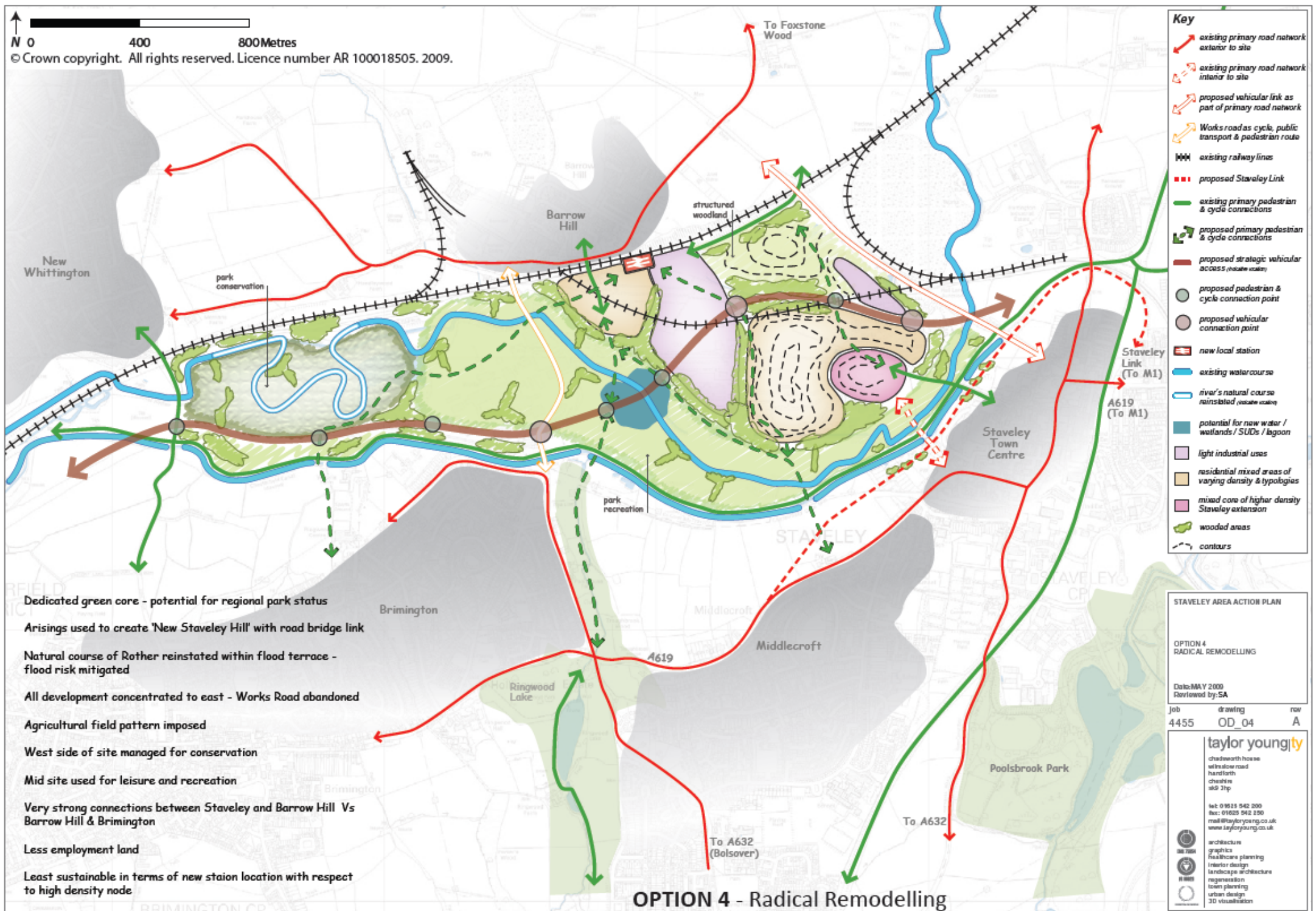
taylor youngly

chadsworth house
winlow road
hardthorn
cheshire
SK3 3TP

tel: 01825 542 200
fax: 01625 542 150
mail: @tayloryoung.co.uk
www.tayloryoung.co.uk

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- town planning
- urban design
- 3D visualization

OPTION 3 - Maximising Development



- Key**
- existing primary road network exterior to site
 - existing primary road network interior to site
 - proposed vehicular link as part of primary road network
 - Works roads as cycle, public transport & pedestrian route
 - existing railway lines
 - proposed Staveley Link
 - existing primary pedestrian & cycle connections
 - proposed primary pedestrian & cycle connections
 - proposed strategic vehicular access (visable access)
 - proposed pedestrian & cycle connection point
 - proposed vehicular connection point
 - new local station
 - existing watercourse
 - river's natural course reinstated (visable access)
 - potential for new water / wetlands / SUDs / lagoon
 - light industrial uses
 - residential mixed areas of varying density & typologies
 - mixed core of higher density Staveley extension
 - wooded areas
 - contours

- Dedicated green core - potential for regional park status
- Arisings used to create 'New Staveley Hill' with road bridge link
- Natural course of Rother reinstated within flood terrace - flood risk mitigated
- All development concentrated to east - Works Road abandoned
- Agricultural field pattern imposed
- West side of site managed for conservation
- Mid site used for leisure and recreation
- Very strong connections between Staveley and Barrow Hill Vs Barrow Hill & Brimington
- Less employment land
- Least sustainable in terms of new station location with respect to high density node

STAVELEY AREA ACTION PLAN

OPTION 4
RADICAL REMODELLING

Date: MAY 2009
Reviewed by: SA

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taylor young ty

chadsworth house
walslow road
handforth
cheshire
sk13 7tp

tel: 01625 542 200
fax: 01625 542 190
mail: info@tayloryoung.co.uk
www: www.tayloryoung.co.uk

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OPTION 4 - Radical Remodelling

Chapter 3: The Emerging Preferred Option For Development.

3.1 Introduction

3.1.1 Following the establishment of the Vision and Key Principles to enable the development of five options for the Staveley Works Corridor, and the subsequent options appraisal process based upon the Green Book Appraisal Method recommended by the Government, the basis for a preferred option emerges as Option 3: Maximising Development. However, there are some drawbacks and limitations to this option which need addressing, and there are benefits contained within the other options which can be captured in order to derive the best way forward for the Staveley Works Corridor.

3.2 The Emerging Preferred Option.

3.2.1 It has been established that option 3 provided a very good strategic, economic and planning fit in relation to current policy documents and their ethos. It scored excellently when judged against regeneration key performance indicators. It also scores highly as regards local acceptability; although this was tempered slightly by a lower score by the adjoining community. A major area of improvement for a preferred option however is in reducing the amount it will cost to deliver, compared to the value it generates and the financial risk associated in generating the shortfall of monies required. Furthermore, consultations with landowners identified a strong aspiration to maximise the areas of built development wherever possible within the physical and environmental constraints of the Corridor.

3.2.2 With this in mind revisions have been identified which reduce the underlying costs and provide scope for further refinements and adaptations to respond to opportunities which emerge over time.

3.2.3 The emerging preferred option takes option 3 as its starting point, with changes introduced to enhance the viability and flexibility of proposals. The Preferred Option, shown on Drawing ref.4455 - OD3 – RevC which is included at the end of Chapter 3 can be summarised as follows:

Employment

3.2.4 The preferred option proposes some 28ha of **employment space** concentrated between the river and railway line in the eastern portion of the Corridor with a frontage to Hall Lane. This location is well connected to the existing highway network, which due to the construction of the Staveley Loop Road provides easy access onto the strategic highway network. It recognises the presence of the existing chemical works complex and the current 0.5km hazard zone which precludes residential development. Capitalising upon the chemical works as an existing employment generator, the opportunity presents itself to promote the area as an advanced manufacturing or

pharmaceutical cluster. Some 94,000 sq m of employment floorspace could be achieved through the total redevelopment of this area.

Housing

- 3.2.5 Around 60ha of **residential land** is located at the centre of the site, forming a link along Works Road, effectively connecting Barrow Hill to the neighbourhoods south of the Staveley Works Corridor. The residential area is formed as two principal parcels of development on either side of the river. This residential land will deliver over 2000 homes at densities of around 40 dwellings per hectare. Affordable housing is included as an integral part of this development, subject to agreement as to the appropriate % and delivery mechanisms. At the heart of the residential area a small area of higher density housing is proposed as part of the community hub.

Community Facilities

- 3.2.6 A **community hub** will provide a focus for the Staveley Works Corridor, located at the heart of the residential areas around the intersection of the new access road and Works Road. This will be easily accessed both by the new and existing neighbourhoods and will serve both Barrow Hill and Brimington. It is envisaged to contain local needs retail, community uses, and a new primary school if the construction of new homes demands one. The location of the school would be easily accessed from Works Road with associated playing fields and green space being acceptable use of flood risk land. The community hub would cater for local needs and would support the Barrow Hill community as well as new development. Its location adjacent to Works Road along with some higher density residential use, would complement Staveley Town Centre rather than compete with it.

Mixed Use

- 3.2.7 The extreme west of the site, between the river and the canal is shown for **future mixed use**. Around 21ha is considered suitable for a mix of uses which would be compatible with access through the core residential development sites, and with the sensitive environments around this part of the Corridor. This could be either:
- residential development, or
 - light industrial uses/ business space, or
 - a mix of business / light industry / residential developments
- 3.2.8 The use allocation for this area gives flexibility to the preferred option and allows for changing future demands and markets in potentially the most attractive part of the corridor in market terms. For purposes of

comparison in the subsequent financial appraisal it has been assumed that this area will be developed for residential use.

Landscape & Environment

- 3.2.9 **Landscaping and natural habitats** are emphasised across the corridor and are integral to the overall development. These areas generally follow the established flood risk zone. A corridor of wildlife habitats is proposed to the north west along the river corridor, extending south through the centre of the site alongside the canal and river courses. Various pockets of landscaping and water areas would be established within and between the developable areas to enhance values, reinforce the green corridor along the canal, and provide a landscape framework structure to the development as a whole. Opportunities for sustainable energy generation should be explored in relation to the Corridor as a whole and these areas in particular. These green areas will also act as pleasant pedestrian and cycle routes across the site, with new opportunities for links between Barrow Hill and the communities to the south, including Staveley Town Centre.

Transport Framework

- 3.2.10 The **Transport Framework** for the Staveley Works Corridor is a multi-modal and fully integrated strategy in which accessibility is paramount, with numerous alternatives provided to minimise the use of the single occupant private car. It is considered of great importance that the site is linked with local neighbourhoods in Staveley, Barrow Hill, and Brimington, and the core routes into the site (including the central spine road, the new access roads, and the enhanced Works Road alignment) are all proposed as multi-purpose providing safe public transport, walking and cycling accessibility as well as access for the private car.
- 3.2.11 The preferred option has an **access road** which will link Works Road eastwards to Hall Lane and the new Staveley Loop road. It also extends west from Works Road, through the remaining parts of the site and would be capable of extension, if finance allowed, linking up with the existing highway network on the outskirts of Chesterfield. In doing this, the road would not only open up the entire corridor for development, but would have a beneficial effect on the highways network surrounding the Staveley Works Corridor. A given however, is the need for substantial improvements to Works Road itself and key points on the existing local highway network around the site.
- 3.2.12 Works Road will be maintained as a key public transport route and it is recommended that developers and council lobby local bus operators to provide an improved frequency and level of service along this key link. Walking and cycling are encouraged with new direct routes from local communities and high quality footways and cycle infrastructure along the main vehicular routes.

- 3.2.13 **Public transport** is a high priority. The improvement of Works Road and the construction of the new access road will increase the potential for bus use and both pedestrian and cycle routes across and within the site are promoted via the green corridor and other routes.
- 3.2.14 There is an opportunity for a **new passenger station** on the freight line that skirts the northern boundary of the site. The design and business case for this will require further study and the location will need to be investigated in greater detail since this will affect potential usage and accessibility. A station should serve the new development, be well integrated with the local community in Barrow Hill and connect with bus services along Works Road. The benefits of such an amenity are clear given the potential improvement to connectivity in and around the Staveley area, and the opportunity to link into existing Midland Mainline services at Chesterfield and potential linkages eastwards to the Robin Hood Line.
- 3.2.15 The transport strategy as a whole will require a more detailed and quantified assessment and it is recommended that this be undertaken as an early action.

Canal Setting

- 3.2.16 The **environment around the canal** will be substantially improved to encourage the wider use of the canal including boating and non-boating uses. The new residential area at the heart of the corridor extends to the canal providing the opportunity for canalside living and working west of Works Road. Elsewhere new and improved connections can be made between residential and business areas and the canal. With careful landscaping and design of development along the canal corridor, there will be the opportunity to promote both recreational and leisure uses, and to maximise the value of this relationship in social, environmental and financial terms.

Potential Costs of Delivery

- 3.2.17 The initial appraisal of Options 1-4 included a cost and value assessment which enabled comparison between the four options, as described in section 2.2 above and Appendix 4a. Development costs for that stage of the study included assumed land values.
- 3.2.18 For the review of the Preferred Option we have, following discussion with the client, revised the approach to financial appraisal to exclude land costs and thereby identify residual values. These revised appraisals are set out in Appendix 4b. This provides the opportunity in the future to scrutinize values and costs for different parts of the site in any future more detailed investigations. For comparison purposes we have summarised below the costs and values for option 3 which was identified as the most favoured of the original four options.

3.2.19 We have also included two versions of the preferred option, firstly with the 21ha at the western part of the development area as B1 Employment space (Preferred Option 1), secondly with this area wholly residential (Preferred Option 2)

3.2.20 The potential delivery costs to secure the preferred options include the same principal components as option 3, but the revised allocation of land uses within the site changes the build-up of costs as follows:

- The preferred option shows a saving on remediation costs in the order of £11-12m compared with option 3.
- Development costs are slightly higher in Preferred Option 2 reflecting a greater amount of residential development
- Other infrastructure costs are unchanged

3.2.21 A summary of costs and values for the preferred option against option 3 shows the following overall comparison:

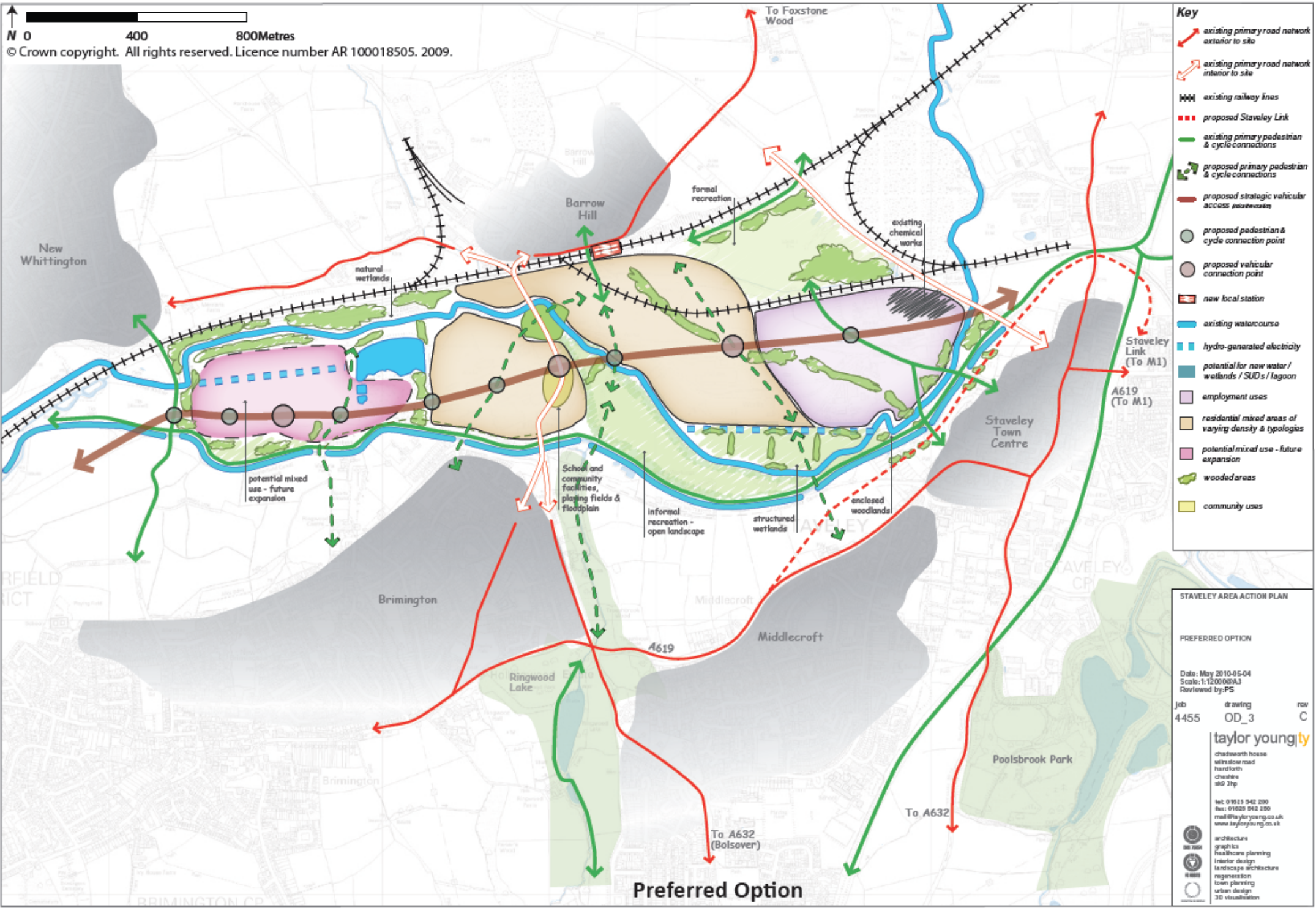
| | Option 3 | Preferred Option 1 | Preferred Option 2 |
|---------------------------------|-----------------|---------------------------|---------------------------|
| Remediation | £72,624,613 | £60,723,500 | £61,773,500 |
| Development | £325,800,000 | 313,542,000 | 335,655,140 |
| Road/ Infrastructure | £12,000,000 | £12,000,000 | £12,000,000 |
| Flood Defence | £7,192,000 | £7,192,000 | £7,192,000 |
| Total Project Cost | £417,616,613 | £393,457,500.00 | £416,620,640.00 |
| Capital Value | £454,316,600 | 423,240,000 | 469,274,400 |
| Profit/Loss | £31,699,387 | 29,783,000 | 52,653,760 |

3.2.22 It is estimated that the cost of developing the Staveley Works Corridor in line with the Preferred Option 2 will be in the region of £416m excluding land values whilst the projected value of the development will be in the region of £470m (excluding allowance for affordable housing), giving a notional surplus (excluding land costs) of £53m. This shows an overall financial improvement compared with option 3 of approximately £32m.

3.2.23 It should be emphasised that this is a strategic study and more detailed costing will require intrusive ground surveys to accurately establish ground conditions and the detailed extent and cost of remediation works. It is envisaged that more detailed analysis of remediation costs and detailed layouts informed by these will provide opportunities to further reduce the project costs.

3.2.24 Further measures will need to be taken to increase this small gap between value and cost in order to unlock development through more attractive land values, ensure that infrastructure and related costs can be fully met, reduce financial risk and minimise the requirement for public sector support. The regeneration of the Staveley Works

Corridor and the associated regeneration benefits to the Borough can only be secured if the project can deliver on these. Therefore various measures need to be examined which have the potential to further reduce the financial risk to the project. These are reviewed in the next chapter.



Key

- existing primary road network exterior to site
- existing primary road network interior to site
- existing railway lines
- proposed Staveley Link
- existing primary pedestrian & cycle connections
- proposed primary pedestrian & cycle connections
- proposed strategic vehicular access (pedestrian/cycle)
- proposed pedestrian & cycle connection point
- proposed vehicular connection point
- new local station
- existing watercourse
- hydro-generated electricity
- potential for new water / wetlands / SUDs / lagoon
- employment uses
- residential mixed areas of varying density & typologies
- potential mixed use - future expansion
- wooded areas
- community uses

STAVELEY AREA ACTION PLAN

PREFERRED OPTION

Date: May 2010-05-04
 Scale: 1:12000000
 Reviewed by: PS

Job 4455 drawing OD_3 row C

taylor young|ly
 chadsworth house
 wladlow road
 handforth
 cheshire
 SK9 3HP

tel: 01625 542 200
 fax: 01625 542 250
 mail: info@taylor-young.co.uk
 www: www.taylor-young.co.uk

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Preferred Option

Chapter 4: Conclusion - Mitigation Measures to Aid Delivery.

4.1 Introduction

4.1.1 The small positive value demonstrated by the residual value assessment of the emerging preferred option shows a significant improvement on option 3 but will be insufficient in itself to unlock the regeneration, and poses the highest risk preventing delivery. Other risks which in turn will have an impact upon the financial viability of the project include:

- Access infrastructure investment
- Flood risk mitigation
- Landownership issues
- Phasing
- Planning policy.

4.1.2 This chapter considers a series of potential measures which may assist delivery and reduce risk.

4.2 Financial Viability

Abnormal Costs

4.2.1 The preferred option demonstrates, at a high level, that careful reallocation of land uses in the masterplan will reduce the potential reclamation costs. Abnormal costs and contingencies should be rigorously restricted when developing a more detailed masterplan for the area, and again at the more detailed level of site planning. The ground conditions and reclamation costs will not be uniform across the whole area, and a sensible approach will be to adapt the phasing, scale and detailed layouts to minimise exposure to specific reclamation costs. This will require more detailed understanding of the nature and extent of ground conditions which landowners and developers will need to address at the next levels of overall land use allocation, infrastructure location and site layouts.

4.2.2 The implications of abnormal costs will not only relate to actual costs of reclamation but in turn will have an impact on land values.

Maximising residential attractiveness

4.2.3 The preferred option includes significant residential areas adjoining attractive open countryside, canal and river watercourses, and areas of future greenspace. Masterplanning of these areas should seek to maximise the benefits of such locations through coordinated overall development thereby helping to maximise land values, and this

requires commitment to the principles of a green infrastructure corridor at an early stage.

Affordable housing

- 4.2.4 Whilst the level of affordable housing has been assumed at 36% for the purpose of calculations on the preferred option in this study, different % figures should be explored, This will have a significant impact on resultant development values, and needs to be considered amongst other factors in coming to an overall view of appropriate development mix, costs, land values and other policy related requirements. As an indication of the financial implications of affordable housing, a sensitivity analysis has been undertaken (see Appendix 4b, page 95) which shows that the potential difference in development value could vary by some £55m between 0% affordable and 40% affordable housing.

Exploiting Coal Reserves

- 4.2.5 Following consultation with the stakeholders, it is apparent that there is an opportunity and desire to exploit the potential coal reserves under part of the area west of Works Road. In extracting the coal, some remediation costs would be offset and therefore if this is the case, the amount of gap funding required would reduce. The subsequent remediation works would provide an early opportunity to restore the land to residential development standards and prepare parcels of land for release to developers. Furthermore, the coal would have to be transported offsite. Works Road is insubstantial and it is envisaged that a haul road would be required - this should be aligned along the proposed new access route eastwards to access the strategic highways network at Hall Lane and thereby avoid the already sensitive residential areas. It could help to offset the estimated £12m cost of the spine road, provided it is aligned and prepared with subsequent upgrading in mind. Local improvements to parts of Works Road, some key site and off site works and site remediation should therefore be funded through any coal extraction dependent upon the amount and value of coal and other minerals extracted.

Delivery Vehicle Approach

- 4.2.6 The type and form of the delivery vehicle to implement the regeneration of the Corridor will impact on the overall costs and values. Piecemeal approaches with individual landowners addressing only their own parts of the site would not only fail to deliver regeneration benefits but could result in duplication of costs. Pooling of land, sharing of up front costs and simplification of the patterns and sequences of delivery can help reduce costs overall, for example through the judicious alignment of infrastructure and the creation of development parcels which minimise exposure to the most serious abnormal costs, provided parties are prepared to work together.

4.3 Access Infrastructure.

- 4.3.1 Integral to the regeneration of the Staveley Works Corridor is the construction of the new access road, the substantial improvement of Works Road and the creation of pedestrian and cycle routes within and across the site.
- 4.3.2 The improvements to Works Road, if the extraction of coal reserves is permitted, may be required as a condition of planning permission. Depending upon the amount and value of the coal extracted, and the means of transporting the coal and waste off site, costs of the new spine road should be partly offset by the construction of a haul road along the same alignment. The aggregate waste mined as a bi-product of coal extraction could be used and recycled into the subbase.
- 4.3.3 Further, the potential line of the remaining section of the Staveley Loop Road should be abandoned and realigned into the Staveley Works Corridor thus freeing any potential funds allocated to complete the new highway.
- 4.3.4 Site visits and flow evidence has show that there is limited capacity on roads surrounding the site, particularly the A619 strategic route between Chesterfield and the M1 via Staveley. Environmental impact is also a concern given that the A619 in the vicinity of the site has been identified as a possible Air Quality Management Area, which could be worsened by significant amounts of new traffic. If the maximum identified development is delivered for the Staveley Works Corridor, it is considered highly likely that a new route will be required between Staveley and Chesterfield, particularly if the land to the west of Works Road is fully redeveloped. It is however possible that a cul-de-sac or diversionary access road might be sufficient during the early stages, however for a fuller development scenario it is recommended that the full regeneration route proposal be brought forward.
- 4.3.5 A further reduction in the costs of the new access road might therefore be achieved if the new route were terminated at its junction with the improved Works Road, so that it served parts of the Staveley Works Corridor only rather than forming a new movement corridor into Chesterfield. However this would impact on the capacity of the existing networks linking to the site and whilst improvements to the environment around the existing highway network within the residential areas would not have the same costs there would be wider problematic movement and environmental impacts.
- 4.3.6 Pedestrian and cycle routes, both new and improved, should be identified as S106A contributions and constructed as part of the phased redevelopment of the area. Further masterplanning of the area should therefore take forward the indicative links proposed here and translate them into specific routes. The Chesterfield Canal towpath is one good example of an existing route which should be

complemented by a series of connecting links to and from the development areas.

- 4.3.7 The potential for a new station to serve the area is a longer term prospect which also needs wider sub regional commitments to restructuring of local passenger rail services to make fuller use of the existing infrastructure. The regeneration of the Staveley Works Corridor would not only benefit from such a connection, but can provide part of the justification for investment. A direct rail link into Chesterfield could offset the scale of investment needed for the extension of the spine road westward beyond the study area.

4.4 Flood Risk Mitigation.

- 4.4.1 The preferred option avoids the development on existing and known flood plain. The line and causes of the extreme flood of 2007 are currently being challenged and clarification of this is an important further step. Further measures such as the careful alignment of the new access route avoiding the flood risk zone, and limiting the river and railway crossing points will again reduce costs.
- 4.4.2 The extensive landscaping works, and the creation of a landscaped setting, including natural wildlife habitats should be designed so that they will help in the long term to reduce the costs of flood risk mitigation measures. Ensuring that the new houses and employment spaces include substantial landscaped areas as well as grey water recycling will also help.

4.5 Landownership Issues.

- 4.5.1 The Staveley Works Corridor cannot be regenerated in a piecemeal fashion if maximum values and maximum regeneration benefits are to be realised. The rejection of the do-nothing option confirms this. Given the fact that there are multiple landowners and leaseholders and that some of the landholdings are effectively landlocked without any existing means of independent access, it will be important to capitalise upon the established co-operation and willingness of the stakeholders to work together.
- 4.5.2 One of the key obstacles to delivery is the landowner/leaseholder situation with very little publicly owned land to drive forward the regeneration proposals. Therefore, a key deliverable must be the creation of a joint venture company whose primary interest would be bringing forward regeneration which maximised land value.

4.6 Phasing of Delivery

- 4.6.1 There will be several possible approaches to the phasing the regeneration of the Staveley Works Corridor. However, common themes must be incorporated, including:

- focus on maximising values and reducing the cost/value shortfall. In the first instance it should be the main focus of the JVC
- promote delivery of shared infrastructure and public benefits
- identify overlaps and interrelationships between projects
- ensure options for later phase projects are protected

4.6.2 A suggested phased approach to delivering the preferred option could be as follows:

| Phase | Development | Infrastructure |
|-------|--|---|
| 1 | <ul style="list-style-type: none"> • Coal extraction west of Works Road • First phase of residential development close to Barrow Hill and the railway | <ul style="list-style-type: none"> • Improvements to Works Road • Construction of the eastern section of the new access road and associate infrastructure / site preparation works to the employment zone around the chemical works |
| 2 | <ul style="list-style-type: none"> • Remediation works following coal extraction • Phased remediation to residential land east of Works Road and north of the new access road | <ul style="list-style-type: none"> • Off site works to the A619 • Flood risk mitigation measures • Elements of Green Infrastructure Network |
| 3 | <ul style="list-style-type: none"> • Development of new residential neighbourhood north of the new access road and east of Works Road. • Begin remediation of the land east of Works Road and south of the new access road • Site preparation for new community hub | <ul style="list-style-type: none"> • Flood risk mitigation measures • Elements of Green Infrastructure Network |
| 4 | <ul style="list-style-type: none"> • Development of a new residential neighbourhood east of Works Road and south of the new access road • Development of the new retail/community hub | <ul style="list-style-type: none"> • Flood risk mitigation measures • Elements of Green Infrastructure Network • Community facilities in new hub |
| 5 | <ul style="list-style-type: none"> • Development of a new residential neighbourhood west of Works Road to be served by part of the western length of the new access road as part of this development • | <ul style="list-style-type: none"> • Flood risk mitigation measures • Elements of Green Infrastructure Network |
| 6 | <ul style="list-style-type: none"> • Development of the far west of the corridor for a mixture of uses along with the remaining length of access road as part of this development | <ul style="list-style-type: none"> • Construction of the western section of the new access road |

4.6.3 Adopting this phased approach can minimise up front expenditure and provides flexibility, matching infrastructure monies to development. It ensures that:

- The most important elements such as site access and some remediation costs are minimised
- Potentially the highest value land is maximised. The far western portion of the corridor will be delivered when the surrounding land value has increased and coal extraction has ceased
- Critical public infrastructure is identified at an early stage and programmed into the overall development
- The community hub will be developed once there is the critical mass within the Staveley Works Corridor.
- At each stage, the regeneration process can be halted, reassessed and reprofiled depending upon the market demands at that time.

4.7 Planning Policy

4.7.1 For any regeneration proposals to have a chance of succeeding a clear and supportive planning policy will be paramount. It has been shown through the options appraisal that the preferred option provides a close fit with regional policy prevalent up to the abolition of Regional Spatial Strategies. The next level of policy is to ensure that the Core Strategy of the Chesterfield Local Development Framework:

- provides a sound policy basis for the regeneration of the Corridor
- provides sufficient clarity to underpin either an Area Action Plan or a Supplementary Planning Document for the Corridor (depending on which route is pursued)

4.7.2 The following wording provides a starting point which could be developed into a Core Strategy policy.

Staveley Works Corridor

The Staveley Works Corridor Regeneration Area will be developed as a sustainable urban extension within a landscaped setting in accordance with the following objectives and principles:

Delivering an Area of Employment and Business within a landscaped environment.

- a) The role of the Staveley Works Corridor as a significant regeneration area should support the expansion of the local

advanced manufacturing base and accompanying employment opportunities through:

- i. The delivery of 28 ha of employment development west of Hall Lane,
 - ii. Promotion of opportunities for pharmaceutical business development
 - iii. The delivery of a mix of uses including opportunities for B1 Business west of Works Road
- b) Support should be given to the development and improvement of transport connections and shared support facilities which will enable the regenerated Staveley Works Corridor to be well integrated within the existing surrounding communities so that employment opportunities for all can be maximised.

Creating a New Living Environment

- a) Phased delivery of a minimum of 2000 dwellings across a minimum of 58 ha of the Staveley Works Corridor, to provide a broad range of housing by size, type and tenure, including affordable housing. The phasing of the residential element will reflect remediation and infrastructure timescales.
- b) Phased delivery of mixed uses, (residential and compatible business / light industrial uses) across a maximum of 21 ha of the western part of Staveley Works Corridor c) Delivery of a mixed use development area of approximately 3 ha at the heart of the area around Works Road, including an appropriate level of retail, leisure, community, education and health facilities to that found in a neighbourhood centre. This provision should predominantly address the local needs of the new development including the business community and be of a form and scale which will avoid any unacceptable impact on the vitality and viability of Staveley Town Centre.
- d) Measures to ensure that new communities are integrated with surrounding areas through the delivery of social and physical / environmental infrastructure serving the new development, in accordance with the phasing of the regeneration proposals.

A Green Corridor

- a) A network of open spaces of various appropriate wildlife habitats for nature conservation, recreation and pedestrian or cycle “green corridors” should be integral to the development and should guide its form and layout. This open space network should include a “blue corridor” along the line of the River Rother, the enhancement of the Chesterfield Canal corridor, the enhancement of the “country park”

recreation facility off Hall Lane, a new network of green linkages, formal green spaces within the site and important local greenspaces integral to individual developments.

- b) Measures to address flood risk, including strategic land management, land use allocation and any protection works should be an integral part of the overall design of infrastructure, public realm and development, and should be delivered in accordance with an agreed programme.

A Highly Accessible Destination

- a) Delivery of strategic access improvements from the major road network through the provision of a connected new access spine route off Hall Lane, together with junction improvements, and internal access roads, which will link the various parts of the urban extension to each other and the surrounding neighbourhoods.
- b) Design of the corridor to facilitate the extension of the access spine route westward to Chesterfield as part of the wider strategic highway network.
- c) Promoting local accessibility through attractive, convenient, safe and sustainable means of travel, including:
 - A new public transport interchange at the intersection of the two railway lines between the Staveley Works corridor and Barrow Hill;
 - Improvements to Works Road and mitigation measures to the local highway network in adjoining communities where necessary,
 - Integrated walking and cycling routes to provide clear and safe links to surrounding communities, including improvements to the canal corridor and Trans-Pennine Trail which will link the development to Chesterfield.

High Quality, Innovative Design Respecting its Location

- a) Staveley Works Corridor should be developed in response to a strong urban design framework which will integrate new development with features of natural, environmental or manmade value including surrounding areas of Green Belt, the Chesterfield Canal and the settlements of Staveley and Barrow Hill.
- b) Exemplar design should demonstrate a strong recognition of the rural identity of this part of the borough, creating a location with a strong sense of place, and meeting the highest design standards in line with policy.

- c) Sustainable design solutions with a particular focus on residential development achieving the required levels of the Code for Sustainable Homes and BREEAM equivalent status for commercial developments.

APPENDICES

Appendix 1 Options Appraisal Framework

| | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling | option 5 Do Nothing |
|--|---------------------------------------|----------------------------|---------------------------------|------------------------------|---------------------|
| 1. Strategic Contribution | | | | | |
| Ultimate objectives of the RSS | 4 | 4 | 4 | 4 | 2 |
| Emerging CBC objectives | 4 | 4 | 4 | 4 | 2 |
| Strategic objectives of Staveley Works Corridor | 4 | 5 | 5 | 4 | 1 |
| Total | 12 | 13 | 13 | 12 | 5 |
| 2. High Level Financial Assessment | | | | | |
| Project Cost | 4 | 2 | 1 | 4 | 3 |
| Capital Values | 3 | 4 | 5 | 2 | 1 |
| Profit/Loss | 1 | 4 | 5 | 1 | 3 |
| Total | 8 | 10 | 11 | 7 | 7 |
| 3. Local Acceptability | | | | | |
| Community consultation | 2 | 3 | 2 | 1 | 1 |
| Stakeholder workshop | 3 | 3 | 4 | 2 | 1 |
| Total | 5 | 6 | 6 | 3 | 2 |
| 4. Deliverability (risk) | | | | | |
| Transportation impact | 3 | 3 | 3 | 1 | 4 |
| Flood risk impact | 4 | 1 | 3 | 3 | 3 |
| Land ownership issues | 2 | 2 | 2 | 2 | 1 |
| Finance issues | 1 | 3 | 3 | 1 | 1 |
| Total | 10 | 7 | 9 | 7 | 9 |
| 5. Regeneration Benefits | | | | | |
| Ha land re-used | 3 | 4 | 5 | 2 | 1 |
| potential jobs created | 3 | 3 | 5 | 3 | 4 |
| No. new houses built | 2 | 5 | 5 | 2 | 1 |
| floorspace creation | 2 | 4 | 5 | 3 | 2 |
| Total | 10 | 16 | 20 | 10 | 8 |
| 6. Sustainability Assessment | | | | | |
| Total | 4 | 5 | 5 | 4 | 1 |
| 7. Transportation Benefits | | | | | |
| Improvement of congestion/ delay/ air quality | 5 | 5 | 5 | 5 | 1 |
| Benefits for pedestrians and cyclists | 4 | 4 | 3 | 3 | 1 |
| Integration with public transport | 3 | 3 | 1 | 3 | 1 |
| facilitation of development and regeneration | 2 | 3 | 4 | 3 | 1 |
| Improvements in connectivity | 5 | 3 | 4 | 3 | 1 |
| Total | 19 | 18 | 17 | 17 | 5 |
| Total Score | 68 | 77 | 83 | 60 | 37 |
| Total Score as % of maximum score | 61% | 73% | 79% | 55% | 34% |

Appendix 2 Community Consultation – Questionnaire Responses

| Questionnaire responses (1=favourite; 4=least favourite) | Option 1 Working with the Constraints | Option 2 Landscape Pockets | Option 3 Maximising Development | Option 4 Radical Remodelling |
|---|--|-------------------------------|------------------------------------|---------------------------------|
| Q1 | 3 | 2 | 1 | 4 |
| Q2 | 2 | 1 | 4 | 3 |
| Q3 | 3 | 2 | 1 | 4 |
| Q4 | 4 | 3 | 1 | 2 |
| Q5 | 3 | 2 | 1 | 4 |
| Q6 | 3 | 1 | 2 | 4 |
| Q7 | 1 | 3 | 2 | 4 |
| Q8 | 1 | 3 | 4 | 2 |
| Q9 | 1 | 2 | 4 | 3 |
| Q10 | 1 | 2 | 4 | 3 |
| Q11 | 4 | 2 | 1 | 3 |
| Q12 | 2 | 1 | 3 | 4 |
| Q13 | 2 | 1 | 3 | 4 |
| Q14 | 3 | 2 | 1 | 4 |
| Scores (the higher the score the less popular the approach) | 33 | 27 | 32 | 48 |

Appendix 3 Stakeholder Workshop – Questionnaire Responses

| 1 = very poor 2 = poor 3 = average 4 = good 5 = very good | Option 1: Working with the constraints | Option 2: Landscape Pockets | Option 3: Maximising Development | Option 4: Radical remodelling | Option 5: Do nothing |
|---|--|-----------------------------|----------------------------------|-------------------------------|----------------------|
| Public sector intervention (high intervention=1, low=5) | 2 | 1 | 2 | 1 | 4 |
| Deliverability (good=5, difficult=1) | 3 | 2 | 3 | 2 | 3 |
| Value to stakeholders (high=5, low=1) | 3 | 3 | 5 | 2 | 2 |
| Creation of something which is distinctive and unique | 4 | 4 | 4 | 3 | 2 |
| Strengthening and enhancing the natural environment | 4 | 4 | 4 | 4 | 2 |
| Providing opportunities for an integrated transport network | 4 | 4 | 4 | 3 | 2 |
| Energy generation | 4 | 4 | 4 | 2 | 2 |
| Developing a range and mix of appropriate land uses | 3 | 4 | 5 | 2 | 2 |
| Enhancing tourism and leisure facilities | 4 | 3 | 3 | 3 | 2 |
| Developing a range of high quality house types and tenure mix | 2 | 4 | 5 | 2 | 2 |
| Creating employment opportunities | 3 | 4 | 4 | 2 | 2 |
| Connecting communities | 3 | 4 | 5 | 2 | 2 |
| Average Score | 3 | 3 | 4 | 2 | 1 |

Stakeholders, including those with land interests, were asked to rate each of the options against the AAP's strategic principles. Not all questionnaires were fully completed, thus the total scores represent a total average

Appendix 4a Financial Appraisal – Options

OPTION 1 – WORKING WITHIN THE CONSTRAINTS

| | |
|---------------------------------|--------------------|
| CENTRAL CORE | |
| Community Uses | |
| Gross Area | 2 ha |
| Density | 1700 sqm/ha |
| Floor Area | 3400 sqm |
| Construction Cost @ £1485/sqm | £5,000,000 |
| Capital Value @ 1290/sqm | £4,386,000 |
| Residual Value | -£614,000 |
| High Density Residential | |
| Gross Area | 8 ha |
| Density | 3000 sqm/ha |
| Floor Area | 24,000 sqm |
| Construction Cost @ 1362/sqm | £32,700,000 |
| Capital Value @ £1995/sqm | £47,880,000 |
| Residual Value | £15,180,000 |
| RESIDENTIAL | |
| Gross Area | 26 ha |
| Net Area @ 80% | 20.8 ha |
| Density | 3000 sqm/ha |
| Floor Area | 62,400 sqm |
| Construction Cost @ £1362/sqm | £85,000,000 |
| Capital Value @ £1995/sqm | £124,488,000 |
| Residual Value | £39,488,000 |
| EMPLOYMENT | |
| Gross Area | 21 ha |
| Net Area @ 80% | 16.8 ha |
| Density | 4132 sqm/ha |
| Floor Area | 69,418 sqm |
| Construction Cost @ £685/sqm | £47,551,000 |
| Capital Value @ £800/sqm | £55,534,000 |
| Residual Value | £7,683,000 |

Total Construction Costs: £170,251,000

Total Capital Value: £232,288,000

OPTION 2 – LANDSCAPE POCKETS

| | |
|---------------------------------|--------------------|
| CENTRAL CORE | |
| Community Uses | |
| Gross Area | 2 ha |
| Density | 1700 sqm/ha |
| Floor Area | 3400 sqm |
| Construction Cost @ £1485/sqm | £5,000,000 |
| Capital Value @ 1290/sqm | £4,386,000 |
| Residual Value | -£614,000 |
| High Density Residential | |
| Gross Area | 10 ha |
| Density | 3000 sqm/ha |
| Floor Area | 30,000 sqm |
| Construction Cost @ 1362/sqm | £41,000,000 |
| Capital Value @ £1995/sqm | £59,850,000 |
| Residual Value | £18,850,000 |
| RESIDENTIAL | |
| Gross Area | 54 ha |
| Net Area @ 80% | 43.2 ha |
| Density | 3000 sq/ha |
| Floor Area | 129,600 sqm |
| Construction Cost @ 1362/sqm | £176,500,000 |
| Capital Value @ £1995/sqm | £258,552,000 |
| Residual Value | £82,050,000 |
| EMPLOYMENT | |
| Gross Area | 21 ha |
| Net Area @ 80% | 16.8 ha |
| Density | 4132 sqm/ha |
| Floor Area | 69,418 sqm |
| Construction Cost @£ 685/sqm | £47,551,000 |
| Capital Value @ £800/sqm | £55,534,000 |
| Residual Value | £7,983,000 |

Total Construction Costs: £270,051,000

Total Capital Value: £378,322,000

OPTION 3 – MAXIMISING DEVELOPMENT

| | |
|---------------------------------|---------------------|
| CENTRAL CORE | |
| Community Uses | |
| Gross Area | 2 ha |
| Density | 1700 sqm/ha |
| Floor Area | 3400 sqm |
| Construction Cost @ £1485/sqm | £5,000,000 |
| Capital Value @ 1290/sqm | £4,386,000 |
| Residual Value | -£614,000 |
| High Density Residential | |
| Gross Area | 2 ha |
| Density | 3000 sqm/ha |
| Floor Area | 6000 sqm |
| Construction Cost @ 1362/sqm | £8,000,000 |
| Capital Value @ £1995/sqm | £11,970,000 |
| Residual Value | £3,970,000 |
| RESIDENTIAL | |
| Gross Area | 70 ha |
| Net Area @ 80% | 56 ha |
| Density | 3000 sqm |
| Floor Area | 168,000 sqm |
| Construction Cost @ £1362/sqm | £229,000,000 |
| Capital Value @ £1995/sqm | £335,160,000 |
| Residual Value | £106,160,000 |
| EMPLOYMENT | |
| Gross Area | 37 ha |
| Net Area @ 80% | 29.6 ha |
| Density | 4132 sqm/ha |
| Floor Area | 122,307 sqm |
| Construction Cost @ £685/sqm | £83,800,000 |
| Capital Value @ £800/sqm | £97,800,000 |
| Residual Value | £14,000,000 |

Total Construction Costs: £325.800,000

Total Capital Value £449,316,000

OPTION 4 – RADICAL REMODELLING

| | |
|---------------------------------|--------------------|
| CENTRAL CORE | |
| Community Uses | |
| Gross Area | 2 ha |
| Density | 1700 sqm/ha |
| Floor Area | 3400 sqm |
| Construction Cost @ £1485/sqm | £5,000,000 |
| Capital Value @ 1290/sqm | £4,386,000 |
| Residual Value | -£614,000 |
| High Density Residential | |
| Gross Area | 2 ha |
| Density | 3000 sqm/ha |
| Floor Area | 6000 sqm |
| Construction Cost @ 1362/sqm | £8,000,000 |
| Capital Value @ £1995/sqm | £11,970,000 |
| Residual Value | £3,970,000 |
| RESIDENTIAL | |
| Gross Area | 28 ha |
| Net Area @ 80% | 22.4 ha |
| Density | 3000 sqm/ha |
| Floor Area | 67,200 sqm |
| Construction Cost @ 1362/sqm | £91,500,000 |
| Capital Value @ £1995/sqm | £134,064,000 |
| Residual Value | £42,564,000 |
| EMPLOYMENT | |
| Gross Area | 17.5 ha |
| Net Area @ 80% | 14 ha |
| Density | 4132 sqm/ha |
| Floor Area | 57,848 sqm |
| Construction Cost | £39,600,000 |
| Capital Value | £46,000,000 |
| Residual Value | £6,400,000 |

Total Construction Costs: £144,100,000

Total Capital Value: £196,420,000

The following tables provide a summary of remediation costs for the four options

Option 1 – Working with the Constraints

| Zone | Type | Perimeter (m) | Area (m ²) | Ha. | Site Category (Water Risk High) | Cost per Hectare | Contamination Remediation Costs |
|------|------------------------------|---------------|------------------------|-------|---------------------------------|------------------|---------------------------------|
| 1 | Open Space | 2296.54 | 321585.92 | 32.16 | A | £125,000 | £4,019,824 |
| 2 | Open Space | 4253.30 | 207329.77 | 20.73 | A | £125,000 | £2,591,622 |
| 2 | Residential mixed areas | 1657.61 | 151637.58 | 15.16 | D | £700,000 | £10,614,631 |
| 2 | Mixed Core of Higher Density | 1317.80 | 51251.28 | 5.13 | D | £600,000 | £3,075,077 |
| 3 | Mixed Core of Higher Density | 1238.49 | 35037.62 | 3.50 | B | £325,000 | £1,138,723 |
| 3 | Open Space | 4685.35 | 250570.85 | 25.06 | A | £125,000 | £3,132,136 |
| 4 | Residential mixed areas | 1585.96 | 107024.48 | 10.70 | A | £175,000 | £1,872,928 |
| 4 | Mixed Core of Higher Density | 574.54 | 15193.83 | 1.52 | A | £125,000 | £189,923 |
| 4 | Open Space | 5419.13 | 399703.80 | 39.97 | D | £525,000 | £20,984,449 |
| 4 | Light Industrial Uses | 1843.02 | 146909.85 | 14.69 | D | £525,000 | £7,712,767 |
| 5 | Light Industrial Uses | 1360.82 | 93481.58 | 9.35 | D | £525,000 | £4,907,783 |
| 5 | Open Space | 1869.12 | 42498.81 | 4.25 | D | £525,000 | £2,231,188 |
| 6 | Open Space | 2451.95 | 210047.09 | 21.00 | A | £125,000 | £2,625,589 |
| | | | | | | TOTAL | £65,096,638 |

Option 2 – Landscape Pockets

| Zone | Type | Perimeter(m) | Area(m ²) | Hectares | Site Category (Water Risk High) | Cost per Hectare | Contamination Remediation Costs |
|------|------------------------------|--------------|-----------------------|----------|---------------------------------|------------------|---------------------------------|
| 1 | Open Space | 2296.54 | 321585.92 | 32.16 | A | £125,000 | £4,019,824 |
| 2 | Residential mixed areas | 1783.35 | 173883.07 | 17.39 | D | £700,000 | £12,171,815 |
| 2 | Mixed Core of Higher Density | 915.88 | 41597.62 | 4.16 | D | £600,000 | £2,495,857 |
| 2 | Open Space | 3959.02 | 193759.75 | 19.38 | A | £125,000 | £2,421,997 |
| 3 | Open Space | 4685.85 | 226272.11 | 22.63 | A | £125,000 | £2,828,401 |
| 3 | Residential mixed areas | 974.33 | 40988.28 | 4.10 | B | £350,000 | £1,434,590 |
| 3 | Mixed Core of Higher Density | 645.16 | 17437.44 | 1.74 | B | £325,000 | £566,717 |
| 3 | Residential mixed areas | 91.54 | 490.24 | 0.05 | B | £350,000 | £17,159 |
| 4 | Mixed Core of Higher Density | 1152.70 | 65512.21 | 6.55 | B | £325,000 | £2,129,147 |
| 4 | Residential mixed areas | 2932.47 | 317003.95 | 31.70 | D | £700,000 | £22,190,276 |
| 4 | Open Space | 6554.73 | 180728.36 | 18.07 | A | £125,000 | £2,259,105 |
| 4 | Light Industrial Uses | 1920.47 | 106060.42 | 10.61 | D | £525,000 | £5,568,172 |
| 5 | Light Industrial Uses | 1589.06 | 128403.77 | 12.84 | D | £525,000 | £6,741,198 |
| 5 | Open Space | 1182.26 | 7571.60 | 0.76 | D | £525,000 | £397,509 |
| 6 | Open Space | 2533.50 | 198756.97 | 19.88 | A | £125,000 | £2,484,462 |
| 6 | Residential mixed areas | 514.70 | 5414.94 | 0.54 | A | £175,000 | £94,761 |
| 6 | Light Industrial Uses | 631.56 | 5949.68 | 0.59 | A | £125,000 | £74,371 |
| | | | | | | TOTAL | £67,895,361 |

Option 3 – Maximising Development

| Zone | Type | Perimeter(m) | Area(m ²) | Hectares | Site Category (Water Risk High) | Cost per Hectare | Contamination Remediation Costs |
|------|------------------------------|---------------|-----------------------|----------|---------------------------------|------------------|---------------------------------|
| 1 | Open Space | 3835.51 | 143774.78 | 14.38 | A | £125,000 | £1,797,185 |
| 1 | Light Industrial Uses | 1658.85 | 170872.65 | 17.09 | A | £125,000 | £2,135,908 |
| 1 | Residential mixed areas | 324.32 | 6918.23 | 0.69 | A | £175,000 | £121,069 |
| 2 | Light Industrial Uses | 755.04 | 26312.92 | 2.63 | A | £125,000 | £328,911 |
| 2 | Residential mixed areas | 642.28 | 8830.92 | 0.88 | A | £175,000 | £154,541 |
| 2 | Mixed Core of Higher Density | 748.47 | 36412.43 | 3.64 | D | £600,000 | £2,184,746 |
| 2 | Residential mixed areas | 1712.09 | 154601.96 | 15.46 | D | £700,000 | £10,822,137 |
| 2 | Open Space | 4736.00 | 182408.02 | 18.24 | A | £125,000 | £2,280,100 |
| 3 | Open Space | 4443.89 | 214969.68 | 21.50 | A | £125,000 | £2,687,121 |
| 3 | Residential mixed areas | 2460.96 | 70922.17 | 7.09 | B | £350,000 | £2,482,276 |
| 4 | Residential mixed areas | 3708.85 | 433102.88 | 43.31 | D | £700,000 | £30,317,201 |
| 4 | Open Space | 5221.57 | 133935.32 | 13.39 | A | £125,000 | £1,674,191 |
| 4 | Light Industrial Uses | 1660.72 | 102253.34 | 10.23 | D | £525,000 | £5,368,300 |
| 5 | Light Industrial Uses | 1420.74 | 79230.65 | 7.92 | D | £525,000 | £4,159,609 |
| 5 | Residential mixed areas | 891.68 | 28919.25 | 2.89 | D | £700,000 | £2,024,348 |
| 5 | Open Space | 2081.58 | 27834.37 | 2.78 | D | £525,000 | £1,461,305 |
| 6 | Open Space | 2475.08 | 171779.23 | 17.18 | A | £125,000 | £2,147,240 |
| 6 | Light Industrial Uses | 1599.22 | 38273.83 | 3.83 | A | £125,000 | £478,423 |
| | | | | | | TOTAL | £72,624,613 |

Option 4 – Radical Remodelling

| Zone | Type | Perimeter(m) | Area(m ²) | Hectares | Site Category (Water Risk High) | Cost per Hectare | Contamination Remediation Costs |
|------|------------------------------|--------------|-----------------------|----------|---------------------------------|------------------|---------------------------------|
| 1 | Open Space | 2296.54 | 321585.92 | 32.16 | A | £125,000 | £4,019,824 |
| 2 | Open Space | 2645.28 | 410237.43 | 41.02 | D | £525,000 | £21,537,465 |
| 3 | Open Space | 4962.50 | 285891.38 | 28.59 | A | £125,000 | £3,573,642 |
| 4 | Residential mixed areas | 1015.56 | 66744.94 | 6.67 | D | £700,000 | £4,672,146 |
| 4 | Light Industrial Uses | 1508.99 | 131179.09 | 13.12 | D | £525,000 | £6,886,902 |
| 4 | Residential mixed areas | 1572.57 | 140859.44 | 14.09 | D | £700,000 | £9,860,161 |
| 4 | Mixed Core of Higher Density | 749.19 | 38219.59 | 3.82 | D | £600,000 | £2,293,175 |
| 4 | Open Space | 6309.03 | 291963.96 | 29.20 | A | £125,000 | £3,649,549 |
| 5 | Mixed Core of Higher Density | 484.22 | 7037.23 | 0.70 | D | £600,000 | £422,234 |
| 5 | Residential mixed areas | 1281.79 | 64949.43 | 6.49 | D | £700,000 | £4,546,460 |
| 5 | Light Industrial Uses | 403.70 | 7370.26 | 0.74 | D | £525,000 | £386,938 |
| 5 | Open Space | 2180.41 | 56626.25 | 5.66 | D | £525,000 | £2,972,878 |
| 6 | Open Space | 2259.07 | 169795.20 | 16.98 | A | £125,000 | £2,122,440 |
| 6 | Residential mixed areas | 422.51 | 3999.85 | 0.40 | A | £175,000 | £69,997 |
| 6 | Mixed Core of Higher Density | 561.34 | 14591.04 | 1.46 | A | £125,000 | £182,388 |
| 6 | Light Industrial Uses | 729.88 | 21913.22 | 2.19 | A | £125,000 | £273,915 |
| 6 | Residential mixed areas | 375.18 | 3763.98 | 0.38 | A | £175,000 | £65,870 |
| | | | | | | TOTAL | £67,535,985 |

PREFERRED OPTION (1) (Revised)

| | |
|---------------------------------|--------------------|
| CENTRAL CORE | |
| Community Uses | |
| Gross Area | 2 ha |
| Density | 1700 sqm/ha |
| Floor Area | 3400 sqm |
| Construction Cost @ £1485/sqm | £5,000,000 |
| Capital Value @ 1290/sqm | £4,386,000 |
| Residual Value | -£614,000 |
| High Density Residential | |
| Gross Area | 2 ha |
| Density | 3000 sqm/ha |
| Floor Area | 6000 sqm |
| Construction Cost @ 1362/sqm | £8,000,000 |
| Capital Value @ £1995/sqm | £11,970,000 |
| Residual Value | £3,790,000 |
| RESIDENTIAL | |
| Gross Area | 58 ha |
| Net Area @ 80% | 46.4 ha |
| Density | 3000 sqm |
| Floor Area | 139,200 sqm |
| Construction Cost @ £1362/sqm | £189,590,000 |
| Capital Value @ £1995/sqm | £277,305,000 |
| Residual Value | £87,715,000 |
| EMPLOYMENT | |
| Gross Area | 49 ha |
| Net Area @ 80% | 39 ha |
| Density | 4132 sqm/ha |
| Floor Area | 161,974 sqm |
| Construction Cost @ £685/sqm | £110,952,000 |
| Capital Value @ £800/sqm | £129,579,000 |
| Residual Value | £18,627,000 |

Total Construction Costs: £313,542,000

Total Capital Value: £423,240,000

PREFERRED OPTION 2 (Revised)

| | |
|---------------------------------|---------------------|
| CENTRAL CORE | |
| Community Uses | |
| Gross Area | 2 ha |
| Density | 1700 sqm/ha |
| Floor Area | 3400 sqm |
| Construction Cost @ £1485/sqm | £5,000,000 |
| Capital Value @ 1290/sqm | £4,386,000 |
| Residual Value | -£614,000 |
| High Density Residential | |
| Gross Area | 2 ha |
| Density | 3000 sqm/ha |
| Floor Area | 6000 sqm |
| Construction Cost @ 1362/sqm | £8,000,000 |
| Capital Value @ £1995/sqm | £11,970,000 |
| Residual Value | £3,790,000 |
| RESIDENTIAL | |
| Gross Area | 79 ha |
| Net Area @ 80% | 63.2 ha |
| Density | 3000 sqm |
| Floor Area | 189,600 sqm |
| Construction Cost @ £1362/sqm | £258,235,200 |
| Capital Value @ £1995/sqm | £377,683,200 |
| Residual Value | £119,448,000 |
| EMPLOYMENT | |
| Gross Area | 28.45 ha |
| Net Area @ 80% | 22.76ha |
| Density | 4132 sqm/ha |
| Floor Area | 94,044 sqm |
| Construction Cost @ £685/sqm | £64,420,140 |
| Capital Value @ £800/sqm | £75,235,200 |
| Residual Value | £10,185,060 |

Total Construction Costs: £335,655,000

Total Capital Value: £469,274,400

Preferred Option 1 – Remediation Costs Assessment

| Zone | Type | Perimeter (m) | Area (m ²) | Ha. | Site Category (Water Risk High) | Cost per Hectare | Contamination Remediation Costs |
|------|--|---------------|------------------------|-------|---------------------------------|------------------|---------------------------------|
| 1 | Open Space | 726.92 | 22579.83 | 2.26 | A | £125,000 | £282,500 |
| 1 | Potential Mixed use – Future Expansion * | 1666.03 | 175663.33 | 17.57 | A | £125,000 | £2,196,250 |
| 2 | Open Space | 975.3 | 55174.33 | 5.52 | A | £125,000 | £690,000 |
| 2 | Open Space | 329.18 | 6288.6 | 0.63 | A | £125,000 | £78,750 |
| 2 | Mixed use – Future Expansion * | 782.86 | 34313.1 | 3.43 | A | £125,000 | £428,750 |
| 2 | Residential Mixed Area | 1581.29 | 170368.44 | 17.04 | D | £700,000 | £11,928,000 |
| 2 | Residential Mixed Area | 605.66 | 19354.65 | 1.94 | A | £175,000 | £339,500 |
| 3 | Open Space | 2009.02 | 50410.82 | 5.04 | A | £125,000 | £630,000 |
| 3 | Open Space | 2811.76 | 149706.97 | 14.97 | A | £125,000 | £1,871,250 |
| 3 | Residential Mixed Area | 909.15 | 29558.82 | 2.96 | B | £350,000 | £1,036,000 |
| 4 | Open Space | 1570.81 | 77290.58 | 7.73 | A | £125,000 | £966,250 |
| 4 | Residential Mixed Area | 2810.51 | 262038.58 | 36.2 | D | £700,000 | £25,340,000 |
| 4 | Employment Uses | 1841.44 | 159148.84 | 15.91 | D | £525,000 | £8,352,750 |
| 5 | Employment Uses | 1538.97 | 125388.82 | 12.54 | D | £525,000 | £6,583,500 |
| | | | | | | TOTAL | £60,723,500 |

Preferred Option 2 – Remediation Costs Assessment

| Zone | Type | Perimeter (m) | Area (m ²) | Ha. | Site Category (Water Risk High) | Cost per Hectare | Contamination Remediation Costs |
|------|--|---------------|------------------------|-------|---------------------------------|------------------|---------------------------------|
| 1 | Open Space | 726.92 | 22579.83 | 2.26 | A | £125,000 | £282,500 |
| 1 | Potential Mixed use – Future Expansion * | 1666.03 | 175663.33 | 17.57 | A | £175,000 | £3,074,750 |
| 2 | Open Space | 975.3 | 55174.33 | 5.52 | A | £125,000 | £690,000 |
| 2 | Open Space | 329.18 | 6288.6 | 0.63 | A | £125,000 | £78,750 |
| 2 | Mixed use – Future Expansion * | 782.86 | 34313.1 | 3.43 | A | £175,000 | £600,625 |
| 2 | Residential Mixed Area | 1581.29 | 170368.44 | 17.04 | D | £700,000 | £11,928,000 |
| 2 | Residential Mixed Area | 605.66 | 19354.65 | 1.94 | A | £175,000 | £339,500 |
| 3 | Open Space | 2009.02 | 50410.82 | 5.04 | A | £125,000 | £630,000 |
| 3 | Open Space | 2811.76 | 149706.97 | 14.97 | A | £125,000 | £1,871,250 |
| 3 | Residential Mixed Area | 909.15 | 29558.82 | 2.96 | B | £350,000 | £1,036,000 |
| 4 | Open Space | 1570.81 | 77290.58 | 7.73 | A | £125,000 | £966,250 |
| 4 | Residential Mixed Area | 2810.51 | 262038.58 | 36.2 | D | £700,000 | £25,340,000 |
| 4 | Employment Uses | 1841.44 | 159148.84 | 15.91 | D | £525,000 | £8,352,750 |
| 5 | Employment Uses | 1538.97 | 125388.82 | 12.54 | D | £525,000 | £6,583,500 |
| | | | | | | TOTAL | £61,773,500 |