Title:	**Economic Appraisal Summary**
Number:	Appendix D
Date:	20/03/2016
Author:	Neil Taylor
Project Code:	2150
Rev:	v1-0

1 INTRODUCTION

1.1 This appendix summarises the evidence used and key assumptions made to complete the scheme impact proforma (Appendix C) for the D2N2 Sustainable Travel Transition Year (STTY) funding bid. It also draws on independent evaluation data derived from LSTF projects delivered between 2011 and 2015, which have been factored to the STTY bid outputs in a separate spreadsheet model (Appendix E). This approach was adopted in order to take full advantage of the available evidence from local LSTF projects and programmes, on whose legacy the D2N2 STTY programme seeks to build. It allowed for a more accurate, and localised, estimation of the benefits associated with proposed project outputs and anticipated outcomes.

1.2 The remainder of this note is structured around the sections of the DfT's scheme impact proforma, to explain how entered data were calculated:

- Section 2 discusses cycling and walking elements of the bid package
- Section 3 covers reduction in car travel estimates
- Section 4 summarises the approach to estimating local public transport impacts
- Section 5 covers the other monetisable benefits not included in DfT's scheme impact proforma, but incorporated as anticipated wider benefits of the STTY bid.
- Section 6 discusses the treatment of estimated benefits and costs in value for money calculations.
- Section 7 provides a guide to navigating the spreadsheet model in Appendix E.
- Section 8 summarises the key assumptions used to develop the spreadsheet model in Appendix E.

2 ESTIMATING CYCLING AND WALKING TRIP CHANGES

2.1 Impacts relating to cycling and walking are anticipated to arise wholly through increased trip-making among programme beneficiaries. The estimated increase in the number of users per day reported in the scheme impacts proforma was derived from the estimated increase in walking and cycling trips that is projected to occur as a result of individual projects. Evidence from LSTF project delivery in the Derby and Nottingham urban areas, mean it is possible to suggest that:

- The 120 Wheels2Work bike loan recipients are likely to experience a 20% increase in the proportion of their weekly commuting trips that are made by bike. This results in an estimated 56 additional trips per bike loan (assumed to last an average of 5 months of the 10 month delivery period), giving 6,760 additional trips across the STTY intervention period. (See tab 2. Wheels2Work tab in Appendix E).
- The 500 beneficiaries of Bike It in Derby and Jobseeker/Further Education cycle training initiatives in Nottingham are likely to make an additional 101 cycling trips in the 12 months following their receipt of support and advice. This assumes the average 39

minutes of additional cycling per day translates into an average of 1.9 x 5.2km (NTS average cycle trip length) cycle trips per week (See tab 3. JS 16-19 cycle training in Appendix E).

- The 200 people receiving recycled bikes and cycle maintenance training through BikeBackDerby and equivalent initiatives run in Nottingham are likely to experience a 30% increase in the proportion of their weekly commuting trips that are made by bike. As such we calculated they will make an additional 85 cycling trips in the 5 month period (half programme duration, to reflect average uptake) following their receipt of a bike and skills development. This assumes the National Travel Survey average of 13 commuter trips per week are being made over this period. (See tab 4. Bike recycling and training in Appendix E).
- Recipients of household PTP will experience a 107% increase in cycling (up to 5.3% of all trips from 2.6%) and 82% increase in walking (up to 20% of all trips from 11%) based on evidence from Nottinghamshire County Council's household PTP interventions delivered in 2013-2015. National Travel Survey data on average number of trips by mode per annum were factored by these percentage increases in order to estimate the change in trip numbers (See tab 5. PTP in Appendix E).
- The 1,500 people expected to participate in a D2N2-wide workplace challenge will make an average of 5.46 additional cycle trips and 3.01 additional walking trips each during the challenge period (derived from out-turn data from the Sustrans workplace challenges delivered in Nottingham between 2013 and 2015). Post-challenge impacts of 11.8 miles of additional cycling and 1.1 miles of additional walking per week were converted into trips and included in a total estimate of additional walk and cycle trips that would be generated by the challenge run in the STTY period (See tab 6. Workplace Challenge, and column H in tab STTY Overview, in Appendix E).
- The 2,000 beneficiaries of adult cycle training initiatives in Derby and Nottingham are likely to make an additional 101 cycling trips in the 12 months following their receipt of support and advice. This assumes the average 39 minutes of additional cycling per day translates into 1.9 x 5.2km (NTS average cycle trip length) cycle trips per week (See tab 8. Adult Cycle Training in Appendix E).
- The 63% of regular users of the Citycard Cycle hire service in Nottingham will undertake an additional 21 mins of cycling per week as a result of the service being present in the city, generating a total of 57,000 new cycle trips and 786 new cyclists who would not have access to a bike without the cycle hire scheme (See tab 9. CC cycle hire in Appendix E).

2.2 When summed together across the Derby and Nottingham housing market areas covered by the STTY bid, it is estimated that over 475,000 additional cycling, and 1.5 million additional walking trips will be completed by STTY beneficiaries in the period 2016/17 (See tab STTY Overview in Appendix E). These additional walking and cycling trip totals have been divided by 365 to give an estimate of additional daily walking and cycling trips (new users per day), which results in an additional:

- 1,304 cycle trips/users per day
- 4,315 walk trips/users per day

2.3 These additional values were then added to baseline values for cycling and walking users per day. The baseline values were calculated by dividing the estimated total number of cycle trips completed in the Derby and Nottingham housing market areas (derived from the mode split of total trips estimated for the combined urban areas, from area traffic model outputs) by 365 (to devise a daily value of cycle trips/users).

2.4 These values were sense-tested by comparing the populations of the Derby and Nottingham housing market areas (~ 1.5 million people) by the current mode split for cycle trips in Nottingham (3%), which gives an indicative 45,000 daily cycle trips. As such the baseline value of ~35,000 daily cycle users was considered to be a reasonable estimate, given some are likely to make multiple trips. Local cordon counts, which capture some cycling activity, were also used to sense-check the estimates.

3 ESTIMATING REDUCTIONS IN CAR TRAVEL

3.1 As above, impacts relating to reductions in car travel reported in the scheme impacts proforma have been estimated based on evidence of travel behaviour change reported in independent evaluations of LSTF project delivery in the Derby and Nottingham urban areas between 2011 and 2015. From these underlying data it is possible to suggest that:

- The 500 beneficiaries of Bike It in Derby and Jobseeker/Further Education cycle training initiatives in Nottingham are likely to make an average of 4.6 fewer car trips per week following the receipt of cycle training. This equates to an average of 242 fewer car trips per beneficiary in the 12 months in the 12 months following their receipt of support and advice. We conservatively assumed that 50% of beneficiaries would achieve this car trip reduction (to allow for any survey sampling bias) to calculate a reduction of 60,398 car trips over the 2016/17 funding period (See tab 3. JS 16-19 cycle training in Appendix E).
- The 200 people receiving recycled bikes and cycle maintenance training through BikeBackDerby and equivalent initiatives run in Nottingham are likely to experience a 5% reduction in the proportion of their weekly commuting trips that are made by car. As such we calculated they will each make an 14 fewer car trips in the 5 month period (half programme duration, to reflect average uptake) following their receipt of a bike and skills development. This assumes the National Travel Survey average of 13 commuter trips per week are being made over this period. We conservatively assumed that 50% of beneficiaries would achieve this car trip reduction (to allow for any survey sampling bias) to calculate a reduction of 38,929 car trips over the 2016/17 funding period (See tab 4. Bike recycling and training in Appendix E)
- The 10,000 household PTP beneficiaries will experience an average 12.5% reduction in car use (reflecting a 25% reduction in SOV car use, and a 28% increase in car sharing), resulting in them each making an average of 73 fewer car trips in the period 2016/17. Since this was an average value, and the underlying data were of a high quality, we applied this average across all 10,000 beneficiaries (having already allowed for a 21.5% participation rate among households) to estimate a total reduction in car trips of 745,663 over the STTY delivery period (See tab 5. PTP in Appendix E).
- The 1,500 people expected to participate in a D2N2-wide workplace challenge will each make an average of 9.41 fewer car trips during the challenge period (derived from out-turn data from the Sustrans workplace challenges delivered in Nottingham between 2013 and 2015). No post-challenge impacts were taken into account for car trips. When applied to all challenge participants, it equates to an estimated reduction in car trips of 13,922 over the STTY delivery period (See tab 6. Workplace Challenge in Appendix E).
- The impact of workplace travel planning activity (including grants for sustainable transport infrastructure) is being evaluated by Transport for Quality of Life across the 12 Large LSTF projects. Evidence in the interim report suggests an average 2.5% reduction in SOV car mode share at beneficiary workplaces as a result of LSTF interventions. In the absence of any local data from Derby and Nottingham (DCC's evaluation report covering Connected business engagement will be published in Spring

2016), this level of impact has been assumed for the STTY funding bid and applied to the local commuter travel mode share for Derby (67% baseline for SOV travel to work). Factoring the 2.5% reduction in SOV car trips to the 75,000 employees that are covered by existing business travel networks established in Derby and Nottingham, and which will continue to be supported with STTY funding, suggests each employee will make an average of 2.5 fewer SOV car trips per annum – giving a total of 182,778 fewer car trips over the 2016/17 delivery period. (See tab 7. Workplace TP + Grants in Appendix E).

- The 2,000 beneficiaries of adult cycle training initiatives in Derby and Nottingham are likely to make an average of 4.6 fewer car trips per week following the receipt of cycle training. This equates to an average of 242 fewer car trips per beneficiary in the 12 months following their receipt of support and advice. We conservatively assumed that 50% of beneficiaries would achieve this car trip reduction (to allow for any survey sampling bias) to calculate a reduction of 241,593 car trips over the 2016/17 funding period (See tab 8. Adult Cycle Training in Appendix E).
- The 63% of regular users of the Citycard Cycle hire service in Nottingham will undertake an additional 91 fewer car trips per week as a result of the service being present in the city, generating a reduction of 27,311 car trips over the 10 month STTY fund's delivery period (See tab 9. CC cycle hire in Appendix E).

3.2 When summed together across the Derby and Nottingham housing market areas covered by the STTY bid, it is estimated that 1,334,996 fewer car trips will be completed by STTY beneficiaries in the period 2016/17 (See tab STTY Overview, row 18, in Appendix E). This reduction in car trips has been applied to the 'With Scheme' column in the scheme impacts proforma, with all data presented on an annualised basis. Traffic levels have been estimated based on the estimated reduction in vehicle kilometres travelled, which was calculated by multiplying the NTS average car trip distance of 13.8km by the reduced number of trips.

3.3 The 'Without scheme' baseline values for traffic levels (km and vehicle hours) and person trip numbers have been derived from Derby and Nottingham Area Traffic Model estimates for the period 2015/16. Although a small change in traffic speeds is likely, owing to the reduction in estimated car trips, it has not been modelled as any changes are anticipated to be very small as a result of this revenue funding package.

3.4 Mode share estimates for the 'without scheme' scenario have also been derived from the Derby and Nottingham Area Traffic Models. 'With scheme' mode share has been estimated by adding/subtracting the changes in walk/cycle/public transport/car trip numbers calculated using the methodologies described in sections 2, 3, and 4 of this note.

3.5 These values were sense-tested by comparing the populations of the Derby and Nottingham housing market areas (~ 1.5 million people) by the current mode split values for each mode multiplied by the average trip distance (by mode) from the National Travel Survey. Where available, local traffic cordon count data were also used to corroborate these estimates.

4 ESTIMATING CHANGES IN PUBLIC TRANSPORT TRIPS

4.1 The only variable considered to change as a result of the D2N2 STTY proposal in respect of local public transport is the number of trips being made. As with the calculations for walk/cycle, and car trips, the changes in public transport use were estimated from independent evaluation data of the impacts of similar LSTF-funded initiatives delivered in

Derby and Nottingham between 2011 and 2015. Drawing on this evidence it was possible to estimate the following public transport trip impacts on a project-by-project basis:

- Distributing a total of 3,400 subsidised public transport passes to jobseekers in the Derby and Nottingham housing market areas is estimated to result in over 190,000 additional bus trips, and 45,000 additional tram trips. This was calculated on the basis that discounted travel passes distributed through LSTF 2014/15 in Nottingham resulted in each beneficiary purchasing an average of 27 local public transport tickets, with which they made an average of 3.1 public transport trips per purchase: 27% by tram and 73% by bus. (See tab 1. Jobseeker PT Subsidy in Appendix E for more details).
- The 10,000 household PTP beneficiaries will experience an average 3% reduction in bus use and a 33% reduction in tram use based on data collected through previous Nottinghamshire PTP interventions. This is largely because of increases in walking, cycling, and car sharing trips; and works out at an average of 0.2 fewer bus trips and 2 fewer tram trips per beneficiary, per annum. Factored-up to the anticipated number of beneficiaries, this is estimated to equate to 1,674 fewer bus trips and 21,231 fewer tram trips during 2016/17 as a result of this intervention. (See tab 5. PTP in Appendix E).
- The 63% of regular users of the Citycard Cycle hire service in Nottingham will undertake an average of 0.4 fewer local public transport trips each week based on evidence from the independent evaluation of the Nottingham LSTF programme, resulting from travel; behaviour shifts in favour of cycling. It was assumed that 90% of these trips are by bus and 10% are by tram. When factored-up across the 10 month delivery period and all regular Citycard cycle hire Citycard hire users, it results in an estimated 52,000 fewer bus trips and 5,780 fewer tram trips. (See tab 9. CC cycle hire in Appendix E).

4.2 When summed together across the Derby and Nottingham housing market areas covered by the STTY bid, it is estimated there will be a net increase of 137,492 additional bus trips, and 18,006 additional tram trips by STTY beneficiaries in the period 2016/17 (See tab STTY Overview, rows 15 and 16, in Appendix E). This increase in public transport trips has been applied to the 'With Scheme' column in the scheme impacts proforma, with all data presented on an annualised basis.

4.3 The 'Without scheme' baseline values for public transport trip numbers have been derived from Derby and Nottingham Area Traffic Model estimates for the period 2015/16. Although a very small change in the average public transport fare may occur as a result of the public transport fare reductions being offered to jobseekers in Derby and Nottingham, the small proportion of total public transport trips they represent is considered to be imperceptible.

4.4 These values were sense-tested by comparing the populations of the Derby and Nottingham housing market areas (~ 1.5 million people) by the current mode split values for each mode multiplied by the average trip distance (by mode) from the National Travel Survey.

5 ESTIMATING OTHER MONETISABLE BENEFITS

5.1 The following estimated monetisable benefits are not covered by the DfT's scheme impact proforma, but have been included in the Benefit:Cost Ratio calculation for the D2N2 STTY programme:

- The economic value of health benefits generated through increases in physical activity, calculated using the World Health Organisation's HEAT tool.

- Economic disbenefit associated with increased numbers of cycle accidents, and the benefit associated with reduced absenteeism resulting from increases in cycling activity.
- The economic benefit associated with Gross Value Added (GVA) of jobseekers being supported into employment opportunities that they could not access without discounted public transport or bike loans.
- The social value of public transport trips made by jobseekers, which could not otherwise be made for affordability reasons.
- Third party revenue benefits arising from cycling events and recycled bike sales.

5.2 The remainder of this section explains how benefits were calculated in respect of these categories of wider economic benefit.

Using the HEAT tool to monetise health benefits of physical activity

5.3 The health benefits that resulted from increases in cycling and walking trips were calculated on a project-by-project basis. The average increase in trip numbers per beneficiary estimated over the course of the STTY 2016/17 delivery period was input, along with an assumption that each additional cycling trip was 5.2km long, and each walking trip was 1.5km long (the National Travel Survey average trip lengths from 2014).

5.4 Where available from LSTF project evaluation data (e.g. Sustrans workplace challenge data from recorded trips), the average increase in minutes of walking or cycling per beneficiary, per day was used alongside an assumption that each beneficiary undertakes an average of 124 days of cycling per annum (the default HEAT tool value) / 250 days of walking per annum. The HEAT tool was only used to calculate the beneficial value of additional walking and cycling activity within the 10 month STTY delivery period. No assumption was made regarding the lasting health impacts of the interventions that will be supported through in the D2N2 area through this programme.

5.5 Across all walking and cycling initiatives it was assumed that 50% of beneficiaries had adopted the more sustainable travel behaviours reported in evaluation survey data. This allowed for potential sampling bias, and the expectation that respondents may be prone to overstating their self-reported uptake in healthier behaviours while others may not have made any changes to their travel behaviours.

When summed across all projects that resulted in increases in cycling and walking, the HEAT tool estimated a reduced risk of mortality of 3% among beneficiaries taking up walking and cycling, compared to individuals who do not regularly walk or cycle. An estimated 2.7 deaths per year will be prevented, which gives an annual economic benefit of £2,503,000 in 2016/17.

Disbenefit associated with increased numbers of cycle accidents and absenteeism benefits

5.6 Across all D2N2 STTY projects it was estimated that 25% of cycling activity would be undertaken by new cyclists, drawing on evidence from Nottingham LSTF projects delivered between 2011-2015. This yielded an estimate of 2,508 more people cycling regularly in the D2N2 area over the course of the delivery period.

5.7 Monetised absenteeism benefits and cycle accident disbenefits were calculated based on the increased cycling activity, in accordance with WebTAG guidance in TAG Unit A4.1. The methodologies applied are as follows:

- Cycle accident disbenefits:
  - Start with change in cycle km travelled (new cycling trips multiplied by average distance of 5.2km)
  - Divide by current cyclist accident rate per billion km (from WebTAG databook Table A 4.1.3)
  - Multiply by the average cost for incidents of different levels of severity (See Appendix E, Cell B63:G84 for calculation)
  - Multiply by assumed 5% increase in accident likelihood for every 100% increase in cycling activity.
- Absenteeism benefits:
  - Start with estimated number of new cyclists
  - Multiply by 26% to reflect estimate of number of trips that are made by commuters (from local data collected for Nottingham City Council Cycle City Ambition Bid)
  - Multiply by absenteeism benefit value of 0.4 days per cycle commuter
  - Multiply by average of 7.5 working hours per day and business value of time £20.20 for a cyclist (WebTAG Table A 1.3.1 Nov 2014 - Cyclist Value).

When summed across all D2N2 STTY proposed projects, the total cycle accident disbenefit is estimated at -£58,750 in 2016/17, while the total benefit from reduced absenteeism is estimated at +£39,777.

Gross Value Added (productivity) benefit of supporting jobseekers into employment

5.8 The Gross Value Added of employment benefits from LSTF jobs and positions filled by jobseekers used the average productivity value of £42,698 (at 2015 prices)[1] for Greater Nottingham and applied this to the English Partnerships' Additionality calculation in Table 5-4 of their 2008 guide[2], which applies to business support for employment:

- Multiply job values by 90% to account for leakage.
- Multiply that value by 50% to account for displacement of the jobs being filled.
- Multiply the emerging value by 1.15 to account for wider economic multiplier effects

5.9 An independent evaluation of the Nottingham Jobseeker Kangaroo half-price public transport fare initiative, delivered through LSTF between 2011 and 2015, found that 13% of beneficiaries found a full time job and 8% found a part time job. Of these people, 83% stated that they would not have been able to find employment without the half price public transport fare offer, which enabled them to afford public transport travel when attending

[1] Obtained from ONS subregional productivity data for Nottingham (Feb 2015). Table D1 in: http://www.ons.gov.uk/ons/rel/regional-trends/regional-economic-analysis/sub-regional-productivity--february-2015/index.html, last accessed: 20/03/2016.

[2] English Partnerships (2008) *Additionality Guide: A standard approach to assessing the additional impact of interventions.* Available online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191511/Additionality_Guide_0.pdf, last accessed: 11/03/2016

interviews and starting work. These data were used to calculate an estimated number of full time equivalent (FTE) and part-time equivalent (PTE) jobs that will be filled as a result of the STTY interventions proposed for the D2N2 area.

5.10 An example of this worked calculation can be found in Appendix E, Tab '1. Jobseeker PT Subsidy', cells A31:D38; which reveals that a total of 480 FTE posts are estimated to be filled through the subsidised public transport travel initiative. A further 7 FTE posts are anticipated to be filled as a result of Bike Back Derby (3 posts) and Wheels2Work (4 posts) initiatives, giving a total estimate of 487 additional FTE posts for the 2016/17 STTY delivery period. An example of the worked GVA calculation can be found in Appendix E, Tab '1. Jobseeker PT Subsidy', cells A40:D43.

When summed across all D2N2 STTY proposed projects, the total estimated Gross Value Added of jobseekers being supported into 487 FTE posts is £2,255,395.

Social value of newly generated public transport trips made by jobseekers

5.11 The social value of public transport trips that could not be made by jobseekers without the subsidised public transport fares on offer through the D2N2 STTY programme was estimated based on independent evaluation evidence from a similar initiative's delivery through the Nottingham Urban Area LSTF programme from 2011-2015. It revealed that 21% of jobseekers would not have been able to travel by public transport to access interviews or employment without the subsidised fare they received.

5.12 The methodology set out in WebTAG Unit A1.3 for calculating the social impacts of bus travel[3] was followed, with the 285,000 additional public transport trips multiplied by 21% to estimate almost 60,000 trips that would not have been made without the public transport fare discount available to jobseekers. This total was multiplied by the non-concessionary pass holder value for generated return bus trips (£8.17 at 2010 prices, factored to 2015 prices: £8.90) divided by two (to account for return trips).

When summed across the 60,000 previously infeasible (on affordability grounds) public transport trips it is estimated will be made through the course of the STTY 2016/17 delivery period, this methodology suggests a total social value of new public transport trips made by jobseekers of £265,886.

Third party revenue benefits from cycling events and recycled bike sales

5.13 Third party revenue benefits were additionally included on the following basis:

- Estimated revenues from ticket sales for cycling events, which are forecast to be £130,000 across two cycling major cycling events to be held in Summer 2016. These estimates come from previous local delivery of similar initiatives through the course of the LSTF 2011-15 programmes in Derby and Nottingham.
- Estimated sales of recycled bikes through the Derby and Nottingham bike recycling initiatives. The total number of bikes has been defined based on the estimated number

[3] Calculated using the approach defined in Mott MacDonald (2013) *Monetising Social Impacts of Bus Travel, which now also forms part of DfT WebTAG Unit A1.3)*. Available online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/226804/how-to-calculate-social-benefits.pdf, last accessed: 13/01/16

of beneficiaries (200 people). The average value per bike sale (£123) was calculated based on total revenues and the number of bike sales in 2013/14 from Derby Connected programme monitoring data. Calculations can be found in Appendix E, Tab '4. Bike Recycling + training', Cells A33:B37.

When summed together, these net third party revenue benefits total an estimate of £174,552 for the STTY delivery year of 2016/17.

6 TREATMENT OF BENEFITS AND COSTS IN VALUE FOR MONEY CALCULATION

6.1 The present value of estimated benefits was calculated across all proposed STTY projects, in 2015 prices.

Sensitivity testing

6.2 These were sensitivity testing on a project-by-project basis, wherever available data allowed. This was typically achieved by:

- Varying the estimated degree of uptake/behavioural change across all recorded project beneficiaries, relative to sample outcome surveys (where used). Except for where levels of behaviour changes were known from previous projects (e.g. through 100% samples, or corroborative monitoring data), sensitivity tests considered the impact of between 30% and 70% of all project beneficiaries making the reported levels of change to their patterns of travel behaviour. For most projects, it was assumed that 50% of beneficiaries would make the level of travel behaviour change reported through LSTF evaluation monitoring surveys.
- Varying the average number of walking and cycling days for projects that involved changes in physical activity levels. This variable was altered through the spreadsheet model and the HEAT for Cycling tool, with an average of 124 cycling days (default value, derived from Stockholm) and 250 walking days (double the number of cycling days) used consistently for HEAT tool estimates of monetary value derived from physical activity.
- Varying the average walk, cycle, car and public transport trip distances (and speeds, for walk and cycle trips), based on different published variables. Average data derived from the latest National Travel Survey (2014) were used in cases where these data were not specifically available through previous LSTF project monitoring surveys.
- Using national average data to assume levels of new public transport trip-making. With the exception of the Jobseeker Kangaroo project (public transport subsidy for jobseekers), previous LSTF project monitoring and evaluation surveys did not seek to determine the proportions of public transport trips that were completely new (i.e. generated as a result of incentives of offers) and consequently risked over-stating the scale of benefits created by LSTF-funded projects. This was addressed by using standard WebTAG values derived from previous research relating to the social value of new bus trips, for which matrices of trip generation factors have been created for DfT.

Treatment of delayed future benefits

6.3 The 2016/17 programme is expected to have some legacy benefits in the subsequent year arising from the complementary nature of other initiatives being delivered in the Nottingham and Derby Housing Market Areas (in particular, major new cycle routes). All being revenue-funded, and heavily dependent upon on-going funding to exist, these legacy benefits are conservatively assumed to halve in 2017/18, then disappear altogether when STTY funding ceases in April 2017.

Programme costs

6.4 The total funded cost of the D2N2 STTY programme is £2.344m of revenue funding. This is made up of £1.870m of central government funding, £0.339m of local authority revenue match contributions, and £0.1345m of third party revenue contributions.

Value for Money calculation

6.5 When considering costs for the purpose of Value for Money calculation, it was considered appropriate to take into account the extent that benefits were estimated through the STTY 2016/17 delivery period, and delayed future benefits. Consequently, two different Benefit:Cost ratios were calculated, to reflect low (conservative) and high (optimistic) scenarios for Net Present Value benefits. These comprised:

- All programme costs, estimated Net Present Value benefits, and estimated future benefits (assumed at a 50% level of decay in 2017/18).
- All programme costs, and estimated Net Present Value benefits.

6.6 Adopting this approach allowed for further sensitivity testing in respect of estimating the value for money of the D2N2 STTY programme.

7 NAVIGATING APPENDIX E (APPRAISAL SPREADSHEET MODEL)

7.1 The STTY impact evaluation spreadsheet model contained in Appendix E is structured into the following tabs:

Bid packages and costs	Breakdown of workstrands, key measures, targets, costs, central government funding required, local authority match-funding contributions, and third party contributions required to deliver the D2N2 STTY programme.
AST for report	Appraisal Summary Tables modified from WebTAG templates for simplified presentation of programme level benefits and costs. Cells are linked from the STTY Overview programme.
STTY Overview	Headline summary of estimated outputs and benefits calculated on a project-by-project basis and grouped by workstrand. Cells are linked to individual project appraisal tabs within the spreadsheet model.
Assumptions	Master tab containing all cross-referenced assumptions for appraisal of each project. Values in cells highlighted yellow can be changed to reflect updated data derived from third party sources (e.g. WebTAG data book tables). Data sources are referenced and hyperlinked.
Coloured Tabs	Individual project benefit estimates, with explanations on approach and data sources annotated in-line. Tabs are colour coded to signify which Workstrand they relate to, and data in these sheets feeds the Overview sheet.

8 KEY ASSUMPTIONS USED TO DEVELOP THE SPREADSHEET MODEL

8.1 The assumptions used in the spreadsheet model have been explained in-line with each project tab's calculations, so that it should be easy to follow the logic applied to project outcome data. The following core assumptions underpinned the spreadsheet model's development:

- For consistency, costs and benefits were calculated or factored to 2015 prices using GDP deflator values published in the WebTAG data book.

- Where not measured through project monitoring activity, average trip distances and annual trip numbers were derived from the latest National Travel Survey data (2014).
- Carbon emission estimates presented in the STTY Overview tab were calculated using DECC's published values for average emissions per vehicle KM travelled, and costed using WebTAG (wherever possible, for 'Greenhouse Gases') or the non-traded DECC carbon values.
- Marginal external costs were calculated using WebTAG's cost values for inner and outer conurbations for other roads, based on the value (in £) per vehicle kilometre reduced.
- Unless known through explicit LSTF project monitoring questions/sample coverage, we assumed that 50% of sustainable travel intervention beneficiaries had adopted the behaviours reported through monitoring survey data and the remaining 50% had not.