

Highways Agency Performance Specification 2013-14 – Technical Note

Field	Notes
Short Title	Deliver Major Road Programme to Time and to Budget.
Performance Specification Reference	Output 9 - PS 4.18
Requirement / Output Details	The major roads programme outlined in Annex B should be delivered on time and to budget. The network operator should achieve cost performance and schedule performance indexes of at least one for the major schemes programme.
Technical Definition	<p>Delivering on time:</p> <p>Open to traffic 7 schemes as set out in Annex B that were under construction in April 2013 when the Performance Specification was published, within the financial year targeted. Financial years run from 1st April to 31st March.</p> <p>Start work in 2013/14 on 9 schemes as set out in Annex B within the quarter targeted. (Q1 = 1st April – 30th June; Q2 = 1st July – 30th Sept; Q3 = 1st Oct – 31st Dec; Q4 = 1st Jan – 31st Mar).</p> <p>Start work in 2014/15 on 6 schemes as set out in Annex B.</p> <p>Start of works dates are subject to statutory process.</p> <p>Delivering to budget:</p> <p>Deliver the 22 schemes listed in Annex B within a total budget of £3.3 bn.</p> <p>Programme CPI / SPI:</p> <p>For schemes in the construction phase, a measure based on a system of Earned Value Management (EVM) combines measurements of physical achievement (i.e. accomplishment of planned work), schedule performance (i.e. behind/ahead of schedule), and cost performance (i.e. under/over budget) within a single integrated methodology.</p> <p>SPI: Schedule Performance Index – i.e. Performance against time. CPI: Cost Performance Index – i.e. Performance against budget.</p> <p>SPI and CPI are both measured against the value of 1.0. This means that a project that has an SPI of 1.0 has completed all its activities within the time planned. A project with an SPI of 1.1 is ahead of the project plan by 10%. A project that has an SPI of 0.9 is behind in the project plan by 10%.</p> <p>A project that has a CPI of 1.0 is on budget, meaning the actual costs are equal to the estimated costs at activity level and that for every £1 spent</p>

Field	Notes
	<p>then £1 of work has been achieved. A CPI of 1.1 indicates that for every £1 spent, the project has achieved £1.10 worth of planned value against the original estimate. A CPI of 0.9 indicates that for every £1.00 spent, £0.90 of planned value has been achieved.</p> <p>CPIs and SPIs will be calculated at the programme level by consolidating scores from these projects in the construction phase.</p>
Rationale	<p>Delivery of the programme will support and facilitate economic growth by reducing time delays and associated costs from congestion and opening up routes to encourage development of housing and industry. Delivering to time and to budget will ensure the benefits are realised quickly and money is spent effectively.</p> <p>EVM is a project management technique that measures progress objectively. EVM has the ability to combine measurements of physical achievement (i.e. accomplishment of planned work), schedule performance (i.e. behind/ahead of schedule), and cost performance (i.e. under/over budget) within a single integrated methodology. EVM provides an early warning of performance problems while there is time for corrective action. In addition, EVM can assist in identifying scope creep, as well as demonstrating progress to stakeholders objectively.</p>
Formula	<p><u>Example (Illustrative)</u></p> <p>Cost Performance Index Budgeted cost of work performed (BCWP)(£) = £642 million Actual cost of work performed (ACWP) (£) = £600 million Cost Performance Index (CPI) = $= (\text{BCWP (£)}) / (\text{ACWP (£)})$ $= (£642\text{m}/£600\text{m}) = 1.07$</p> <p>Schedule Performance Index BCWP (£) = £642 million Budgeted cost of work scheduled (BCWS) (£) = £568 million Schedule Performance Index (SPI) = $= (\text{BCWP (£)}) / (\text{BCWS (£)})$ $= (£642\text{m}/£568\text{m}) = 1.13$</p> <p>Construction of the Baseline The following information for each project will be used to establish the baseline for monitoring:</p> <ul style="list-style-type: none"> a detailed fully costed, fully resourced programme plan will cover all the activities (e.g. structures, environmental activities etc) being undertaken by the contractor which constitute the final target cost. project risk will be added to the target cost to form the baseline for the project, against which the project EVM scores of CPI and SPI will be monitored.

Field	Notes
	<ul style="list-style-type: none"> • Lifetime scores for CPI and SPI will also be maintained, to allow schemes to be tracked across the whole programme. <p>The baseline will be adjusted for new construction starts during the year. Projects will only be added to the baseline and into the measurement process once target cost and start of works date has been agreed. The baseline on which CPI will be calculated will include the contribution towards the 20% that relates to the construction phase.</p> <p>Consolidation of project level EVM into programme level CPIs and SPIs will be calculated at the programme level by consolidating scores from these projects in the construction phase. The consolidation process will be a simple addition of project budgets, actual costs and budgeted cost of work completed to derive programme level CPIs and SPIs. Risk on a project is factored into the baseline. CPI and SPI are calculated at a contract and project level. This is then aggregated to programme performance. A programme level risk adjustment is made to the aggregated baseline of 5% to allow for programme slippage.</p> <p>Allowance for Risk and Contingency The baselines for the EVM indices are based upon the works costs as agreed with the contractors, with an additional element to denote that some of the project risks are held by the HA with the assumption some of these risks will be expected to materialise. Project risk will be incorporated into the baseline Budgeted Cost Of Work Scheduled at the start of the project – this forms a contingency allowance within the project EVM figure. It will be adjusted annually to reflect the remaining work at the beginning of each financial year.</p> <p>Programme risk by nature is not project specific and while distributed by project will be managed at the programme level, and as such it will not be included in the baseline. If programme level risks materialise they will be subject to the change control process and a decision reached on whether to adjust the baseline to compensate.</p>
Start Date	The EVM measure has been used since 2008-09 and reported in previous HA Annual Reports.
Performance	<p>A programme of road schemes delivered on time and to budget resulting in reduced congestion and improved journey time reliability.</p> <p>If the calculated SPI and CPI is at least 1.0 this will indicate the programme of schemes in construction is progressing to its cost and time schedule baselines, recognising that these will often be stretched targets.</p> <p>By adopting a programme approach to delivery and preparing contingency schemes, it might be appropriate to bring one or more schemes forward or into the programme if other schemes are delayed, e.g. through Statutory processes.</p>

Highways Agency Performance Specification 2013-14 – Technical Note

Field	Notes
Behavioural Impact	The index will continually incentivise delivery at lower costs and ahead of schedule.
Comparability	N/A
Collection Frequency	Performance is published annually in the HA Annual Report.
Clearance Process	Major Projects Director.
Time Lag	N/A
Data Source	HA management systems and monthly returns from contractors.
Type of Data	Management data.
Robustness and Data Limitations	The Major Projects Programme will be monitored by the Highways Agency Board.
Collecting Organisation	Highways Agency.
Return Format	Time - Dates by year / quarter (as applicable). Budget - £bn. CPI/SPI – Number.
Geographical Coverage	England.
How Indicator Can be Broken Down	By project.