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## Cost indices for infrastructure

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### **Contract price adjustment for cost fluctuation**

The NZTA publishes cost indices for use by approved organisations to adjust contract prices for cost fluctuation. This document explains how the NZTA calculates the indices and cost adjustment factors (CAFs), and how approved organisations are expected to use them.

Approved organisations may specify in contracts that amounts payable under the contract will be adjusted in accordance with an NZTA cost fluctuation index (refer to the NZTA *Procurement manual* section 6.6 *Contracts* and section 7.6 *Contracts*).

Approved organisations must advise potential suppliers that they intend to adjust contract prices for cost fluctuation in the request for proposal (RFP). They must also name the index or combination of indices that will be used and describe how indexation will be applied.

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### **Calculation of the NZTA cost indices**

The NZTA publishes five indices for use in infrastructure contracts:

1. Maintenance
2. Construction
3. Revised reseal
4. Bridges
5. Professional services.

The NZTA indices are calculated from seven indices published by Statistics New Zealand (Statistics NZ). The Statistics NZ indices include four producer price indices relevant to infrastructure, a consumer price index (for private transport), a labour index and a farm price index (for fuel and oil). The revised reseal index also uses a bitumen price index based on an index published by Platts Asia-Pacific which is intended to track the international price of bitumen. Calculation of the bitumen price index is discussed further below.

The Statistics NZ indices used as inputs to calculate the NZTA indices and the weights applied to each are given in the table below.

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## Cost indices for infrastructure continued

### Calculation of the NZTA cost indices continued

NZTA index	Input indices	Construction (PPIQ,SNE)	Transport & storage (PPIQ,SNI)	Road transport (PPIQ,SNO1)	All farming inputs price index (fuel and oil) (FPIQ,S191)	Labour index (LCIQ,SG53Z9)	Non-metallic mineral production (PPIQ,SNC12)	Private transport (CPIQ,SE907)	Bitumen price index
Maintenance		0.20	0.05	0.05	0.10	0.50	0.10		
Construction		0.20	0.05	0.05	0.10	0.40	0.20		
Revised reseal		0.20	0.05			0.15	0.20		0.40
Bridges		0.10	0.05		0.20	0.30	0.35		
Professional services						0.80		0.20	

The NZTA indices are published as tables of CAFs. The revised reseal index is updated monthly and all other NZTA indices are updated quarterly. The CAFs for a particular quarter are published within 10 weeks from the end of the quarter. For example, the CAF values applicable to works and services delivered in the quarter ending 30 September will usually be published early in December.

Refer to *Latest cost index values for infrastructure* at

<http://www.nzta.govt.nz/resources/procurement-manual/procurement-tools.html>.

### Using the NZTA indices

When a contract specifies that the price will be adjusted in accordance with an NZTA cost fluctuation index, the adjustment must be based on the original tender price multiplied by the relevant CAF.

The relevant CAF must be taken from the table derived from the NZTA index named in the contract, using the row in the table corresponding to the quarter in which tenders closed and the column for the quarter in which the works or services were undertaken. Using CAFs in any other way may result in a price adjustment that does not reflect the movement in costs since the works or services were priced or since tenders closed.

## Cost indices for infrastructure continued

### Using the NZTA indices continued

CAFs for a particular month will be published within five months from the end of the month in which works or services were undertaken. Approved organisations can use a number of methods to manage this delay in publication. If a monthly progress payment system is used, as prescribed in NZS3910:2003 *Conditions of contract for building and civil engineering construction*, the delay in publication of CAFs is handled as specified in appendix A *Cost fluctuation adjustment by indexation*, clause A7. When the CAF for a particular month has not been published, an interim payment is made using the CAF for the most recent quarter for which a value is available.

### Derivation of the bitumen price index

The NZTA's bitumen price index is calculated monthly and is based on the average monthly:

- spot price for Singapore HSFO 180, published by Platts Asia-Pacific
- US\$/NZ\$ exchange rate, published by the Reserve Bank of New Zealand.

The bitumen price index for any given month is calculated as follows.

$$BPI_{\text{current month}} = [((\text{HSFO}_{\text{previous month}} / \text{US}\$/\text{NZ}\$_{\text{previous month}}) \times 1.35) - \text{Jan 95}_{\text{base}} + 410] \times (1000/410)$$

Example using actual values for August 2001:

$$BPI_{\text{Aug 01}} = [((131.9716 / 0.4087) \times 1.35) - 204.59 + 410] \times 1000/410 = 1564$$

Points to note about the calculation of the index are:

1. A lag of one month is used (ie data from the previous month determines the index for next month).
2. The initial 'raw' index value (410) is the New Zealand Refining Co. list price for bitumen in NZ\$ per tonne for January 1995.
3. Each month, the 'raw' index changes by 1.35 times the NZ\$ change in the Singapore HSFO 180 price for that month.
4. The index is calculated from the 'raw' index by raising to a base of 1000 (as at January 1995) and lagging one month.