How does Fuel / Asphalt Escalation Work?

Stepping through the SCRs

Updated April 2017

109.06A Adjustments for Price Fluctuations.
(Added Subsection).

Price adjustments for pay items listed in Table 109-1 will be made when the price fluctuation for products used in the performance of the work exceed specified limits. Adjustments are not intended to compensate for normal day-to-day fluctuations, seasonal changes, or to serve as a guarantee of full compensation for price fluctuations. It does provide for sharing in a portion of the risk, which could result from unusual price fluctuations. No price adjustments will be made for work performed beyond the fixed completion date.

Escalation is for shared risk of unusual price fluctuation in Ultra Low Sulfur #2 Diesel products.

Table 109-1
Pricing Adjustment Pay Items

Line Item Number	Pay Item Number	Pay Item Description	Product
A0500	20402-0000	Subexcavation	Fuel
A0520	20411-0000	Select Borrow	Fuel
A0860	40101-5600	Superpave pavement	Asphalt binder & Fuel

Table 109-1 will have the items that are subject to fuel and/or asphalt escalation.

Monthly adjustments will be accrued with the payment or rebate to be made in the final voucher. A partial price adjustment payment may be made once every 12 months or when the unpaid accrued increase exceeds $10,000 when requested in writing. The Government will withhold a rebate when the deductive accrual exceeds $10,000.

Payment
Every 12 months
Or
>$10,000 with a request in writing

Rebate
>$10,000

The maximum allowable monthly and final adjustment for payment to the Contractor or rebate to the Government is limited to 50% of the Base Price Index.

Base Price Index is the average price of fuel or asphalt when the contract is awarded.

ASPHALT

(a) **Asphalt binder adjustment.** The Government will determine price indexes using price data obtained from the *Asphalt Weekly Monitor*® by Poten and Partners, Inc. The weekly high and low selling price data for PG 64-22 or PG 58-22 paving grade reported for the Pacific Northwest, Seattle, WA will be averaged and used to establish a Base Price Index (BPI) and a Monthly Performance Price Index (MPPI). These indexes are defined as follows:

(1) **Base Price Index.** The Base Price Index (BPI) is a price index determined by the arithmetic average for prices in the four *Asphalt Weekly Monitor*® publications immediately preceding the bid opening.

$$BPI_{(Asphalt\ Binder)} = \$\ 300.63\ per\ ton$$

(2) **Monthly Performance Price Index.** The Monthly Performance Price Index (MPPI) is the arithmetic average of the weekly price data from four *Asphalt Weekly Monitor*® publications issued before the last Wednesday of the month in which the work was performed.

The BPI and MPPI will be posted at:

http://flh.fhwa.dot.gov/business/resources/construction/escalation/wfl/.

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The BPI and MPPI will be posted at:

http://flh.fhwa.dot.gov/business/resources/construction/escalation/wfl/

The MPPI is the average price for each month.
This is used to determine a payment or a rebate.

ASPHALT

Average Monthly Asphalt Prices for 2017 ($/US ton)

	Eastern Montana	Western Montana	Northern Wyoming	Boise	Northern Idaho	Seattle	Portland
January	$305.00	$295.00	$310.00	$352.50	$335.00	$300.00	$322.50
February	$305.00	$297.50	$313.75	$353.13	$338.75	$300.00	$339.38
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							

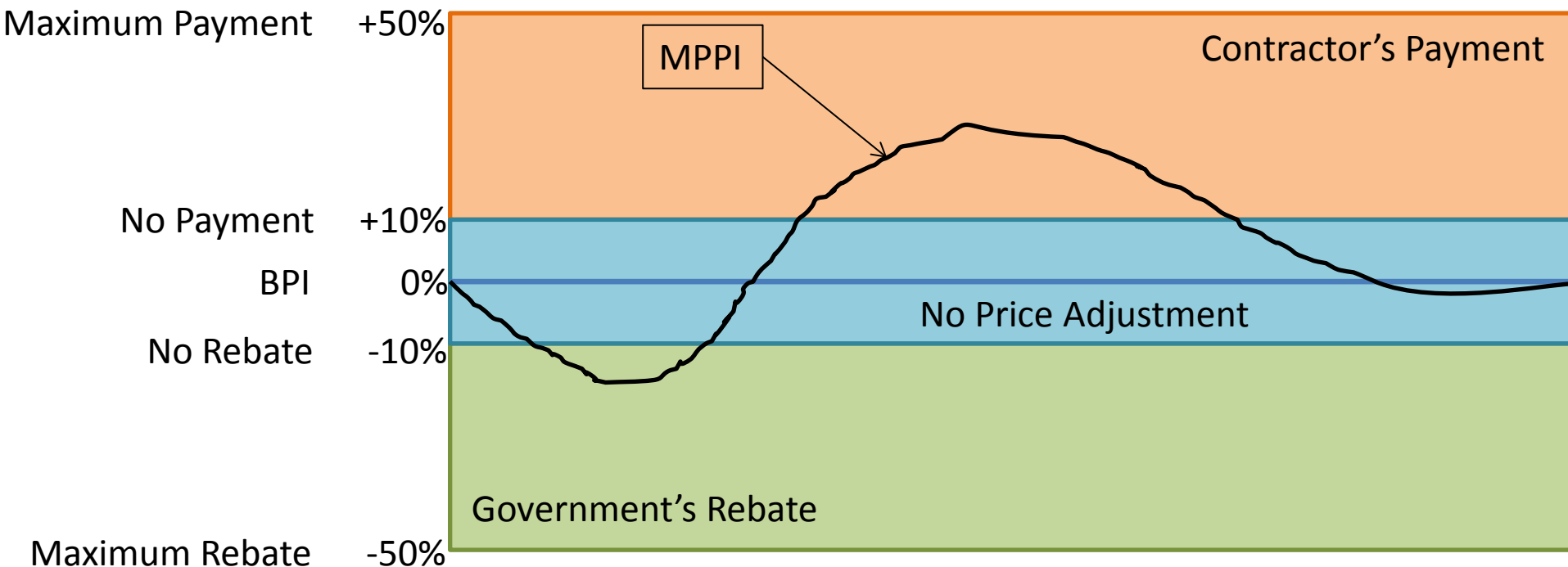This is what the MPPIs look like.

ASPHALT

Asphalt binder contained in recycled asphalt pavement (RAP) incorporated into the mix will be excluded from price adjustments. Price adjustments to asphalt binder will be calculated by the Government using a ratio of the MPPI/BPI to determine price adjustments as follows:

If there is RAP in the mix, that oil percentage will be taken out of the escalation amount.

ASPHALT

Asphalt binder contained in recycled asphalt pavement (RAP) incorporated into the mix will be excluded from price adjustments. Price adjustments to asphalt binder will be calculated by the Government using a ratio of the MPPI/BPI to determine price adjustments as follows:

- **No price adjustment** – When the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for asphalt binder used in construction work performed during the relevant month.

Maximum Payment	+50%	MPPI — Contractor's Payment
No Payment	+10%	
BPI	0%	No Price Adjustment
No Rebate	-10%	
		Government's Rebate
Maximum Rebate	-50%	

The +/-10% of the BPI is considered normal day-to-day fluctuation.

ASPHALT

Asphalt binder contained in recycled asphalt pavement (RAP) incorporated into the mix will be excluded from price adjustments. Price adjustments to asphalt binder will be calculated by the Government using a ratio of the MPPI/BPI to determine price adjustments as follows:

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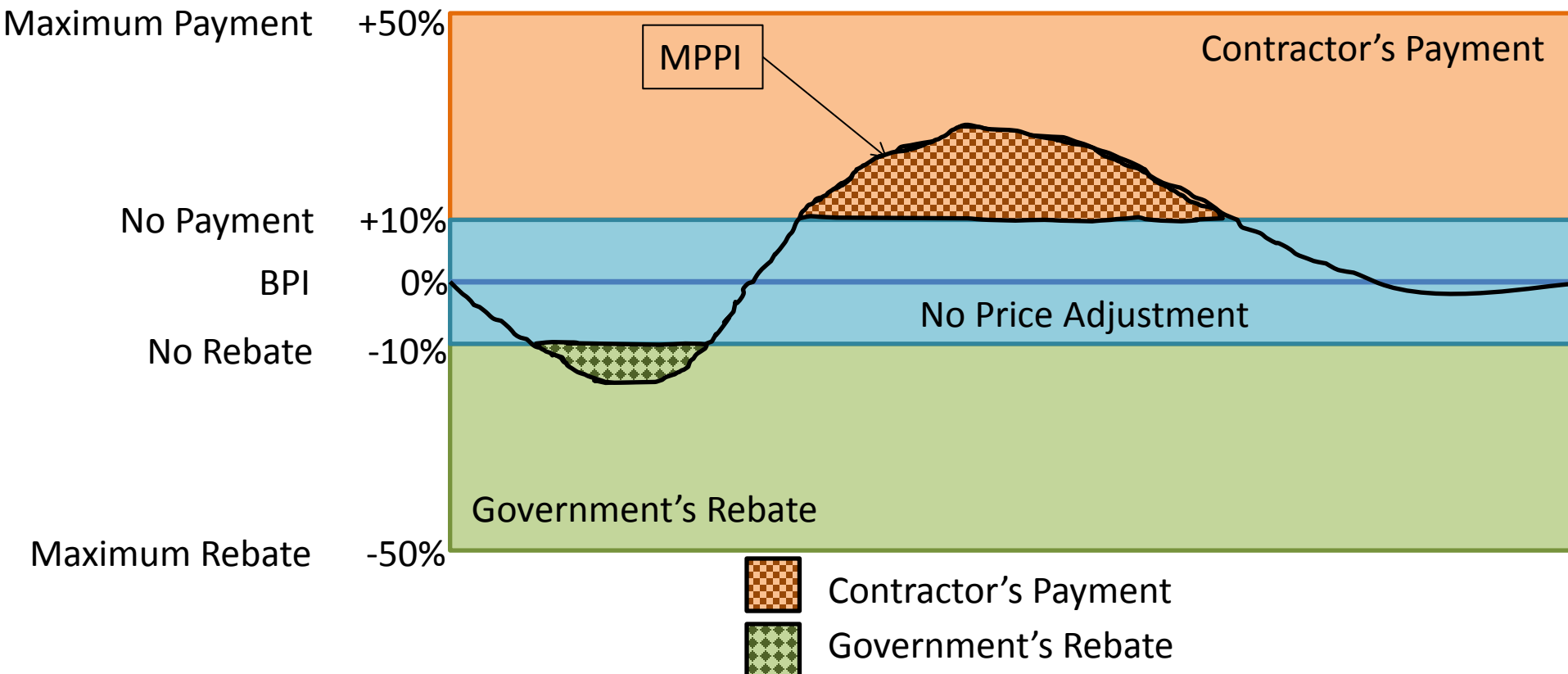
ASPHALT

- **Government rebate** – When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate as follows:

  Government Rebate = (0.90 – MPPI/BPI) (BPI) (Q)

- **Contractor payment** – When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment as follows:

  Contractor Payment = (MPPI/BPI – 1.10) (BPI) (Q)

where:

Q = Table 109-1 pay item quantity (tons or metric tons) x ((% Asphalt Binder/100) – (% RAP/100 x % asphalt binder in RAP/100));

% Asphalt Binder = % Binder by Mass of Total Mix from the approved job-mix formula;

% RAP = percent recycled asphalt pavement from the approved job-mix formula; and

% asphalt binder in RAP = percent of asphalt binder in recycled asphalt pavement from the approved job-mix formula.

When calculating the payment or rebate, the Government will round each portion of the calculation to two decimal places.

ASPHALT

Example 1:

BPI = 306.63
MPPI = 300.00
MPPI/BPI = $\frac{300.00}{306.63}$ = 0.98

Since the MPPI/BPI is between 0.9 and 1.1, there is no adjustment.

Example 2:

BPI = 306.63
MPPI = 350.00
MPPI/BPI = $\frac{330.00}{306.63}$ = 1.08

Since the MPPI/BPI is between 0.9 and 1.1, there is no adjustment.

ASPHALT

Example 3:

BPI = 306.63
MPPI = 250.00
MPPI/BPI = $\frac{250.00}{306.63} = 0.82$
0.82 = <0.90 = Government Rebate
% Asphalt binder = 5.8%
% RAP = 20%
% Asphalt Binder in RAP = 5.67%
Tons Placed = 5216.15 tons

$$Q = Tons\ Placed\ * \left(\frac{\%\ Asphalt\ Binder}{100} - \left(\frac{\%\ RAP}{100} * \frac{\%\ Asphalt\ Binder\ in\ RAP}{100}\right)\right)$$

$$Q = 5{,}216.15 * \left(\frac{5.8}{100} - \left(\frac{20}{100} * \frac{5.67}{100}\right)\right) = 243.39$$

$$Government\ Rebate = \left(0.90 - \frac{MPPI}{BPI}\right) * BPI *$$

$$Government\ Rebate = (0.90 - 0.82) * 306.63 * 243.39 = \$5{,}970.45$$

ASPHALT

Example 4:

BPI = 306.63

MPPI = 372.00

MPPI/BPI = $\frac{372.00}{306.63}$ = 1.21

1.21 = >1.10 = Contractor Payment

% Asphalt binder = 5.8%

% RAP = 20%

% Asphalt Binder in RAP = 5.67%

Tons Placed = 5216.15 tons

$$Q = Tons\ Placed\ * \left(\frac{\%\ Asphalt\ Binder}{100} - \left(\frac{\%\ RAP}{100} * \frac{\%\ Asphalt\ Binder\ in\ RAP}{100}\right)\right)$$

$$Q = 5{,}216.15 * \left(\frac{5.8}{100} - \left(\frac{20}{100} * \frac{5.67}{100}\right)\right) = 243.39$$

$$Contractor\ Payment = \left(\frac{MPPI}{BPI} - 1.10\right) * BPI * Q$$

$$Contractor\ Payment = (1.21 - 1.10) * 306.63 * 243.39 = \$8{,}209.37$$

ASPHALT

Example 5:

BPI = 306.63

MPPI = 150.00

MPPI/BPI = $\frac{150.00}{306.63} = 0.49$

0.49 = <0.90 = Government Rebate

Can only go as low as 0.50

% Asphalt binder = 5.8%

% RAP = 20%

% Asphalt Binder in RAP = 5.67%

Tons Placed = 5216.15 tons

$$Q = Tons\ Placed\ * \left(\frac{\%\ Asphalt\ Binder}{100} - \left(\frac{\%\ RAP}{100} * \frac{\%\ Asphalt\ Binder\ in\ RAP}{100} \right) \right)$$

$$Q = 5{,}216.15 * \left(\frac{5.8}{100} - \left(\frac{20}{100} * \frac{5.67}{100} \right) \right) = 243.39$$

$$Government\ Rebate = \left(0.90 - \frac{MPPI}{BPI} \right) * BPI * Q$$

$$Government\ Rebate = (0.90 - 0.50) * 306.63 * 243.39 = \$29{,}852.27$$

ASPHALT

Example 6:

BPI = 306.63

MPPI = 520.00

MPPI/BPI = $\frac{520.00}{306.63} = 1.69$

1.69 = >1.10 = Contractor Payment

Can only go as high as 1.50

% Asphalt binder = 5.8%

% RAP = 20%

% Asphalt Binder in RAP = 5.67%

Tons Placed = 5216.15 tons

$$Q = Tons\ Placed\ *\left(\frac{\%\ Asphalt\ Binder}{100} - \left(\frac{\%\ RAP}{100} * \frac{\%\ Asphalt\ Binder\ in\ RAP}{100}\right)\right)$$

$$Q = 5,216.15 * \left(\frac{5.8}{100} - \left(\frac{20}{100} * \frac{5.67}{100}\right)\right) = 243.39$$

$$Contractor\ Payment = \left(\frac{MPPI}{BPI} - 1.10\right) * BPI * Q$$

$$Contractor\ Payment = (1.50 - 1.10) * 306.63 * 243.39 = \$29,852.27$$

Fuel

(b) Fuel Price Adjustment. The Government will determine price indexes for fuel using price data obtained from the Oil Price Information Service (OPIS) which publishes a daily report (Monday through Friday) on gasoline and distillate reseller prices. Gross No. 2 Distillate rack average price data for Ultra Low Sulfur No. 2 Diesel fuel reported for Seattle City and PADD 962 will be averaged and used to establish a Base Price Index (BPI) and a Monthly Performance Price Index (MPPI). These indexes are defined as follows:

(1) Base Price Index. The Base Price Index (BPI) is a price index determined by the arithmetic average as specified above, reported in the OPIS publications for the four weeks immediately preceding the bid opening.

$$BPI_{\text{(LOW SULFUR, NO. 2 DIESEL FUEL)}} = \$\ 1.69 \text{ per U.S. gallon}$$

(2) Monthly Performance Price Index. The Monthly Performance Price Index (MPPI) is the arithmetic average of the weekly price data from OPIS publications issued before the last Wednesday of the month in which the work was performed.

The BPI and MPPI will be posted at:

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Fuel

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The BPI and MPPI will be posted at:

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The MPPI is the average price for each month. This is used to determine a payment or a rebate.
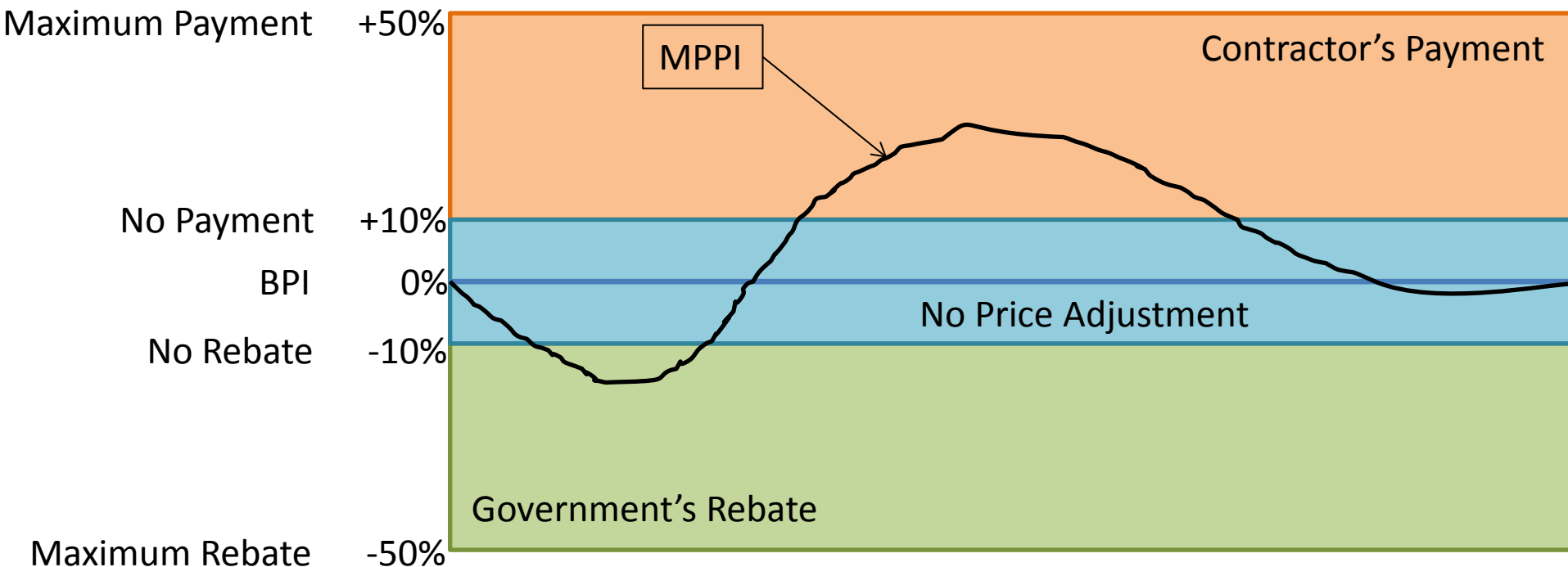
Fuel

Average Monthly Fuel Prices for 2017 ($/gallon)

	Seattle	Boise	Portland	Spokane	Bozeman	Missoula	Great Falls
January	1.75	1.74	1.79	1.87	1.74	1.78	1.73
February	1.71	1.90	1.77	1.90	1.78	1.84	1.78
March							
April							
May							
June							
July							
August							
September							
October							
November							
December							

This is what the MPPIs look like.

Fuel

Price adjustments to fuel will be calculated by the Government using a ratio of the MPPI/BPI to determine price adjustments as follows:

- **No price adjustment** – When the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for fuel used in construction work performed during the relevant month.

Maximum Payment	+50%	Contractor's Payment
		MPPI
No Payment	+10%	
BPI	0%	
No Rebate	-10%	No Price Adjustment
		Government's Rebate
Maximum Rebate	-50%	

The +/-10% of the BPI is considered normal day-to-day fluctuation.

Fuel

Price adjustments to fuel will be calculated by the Government using a ratio of the MPPI/BPI to determine price adjustments as follows:

- **No price adjustment** – When the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for fuel used in construction work performed during the relevant month.
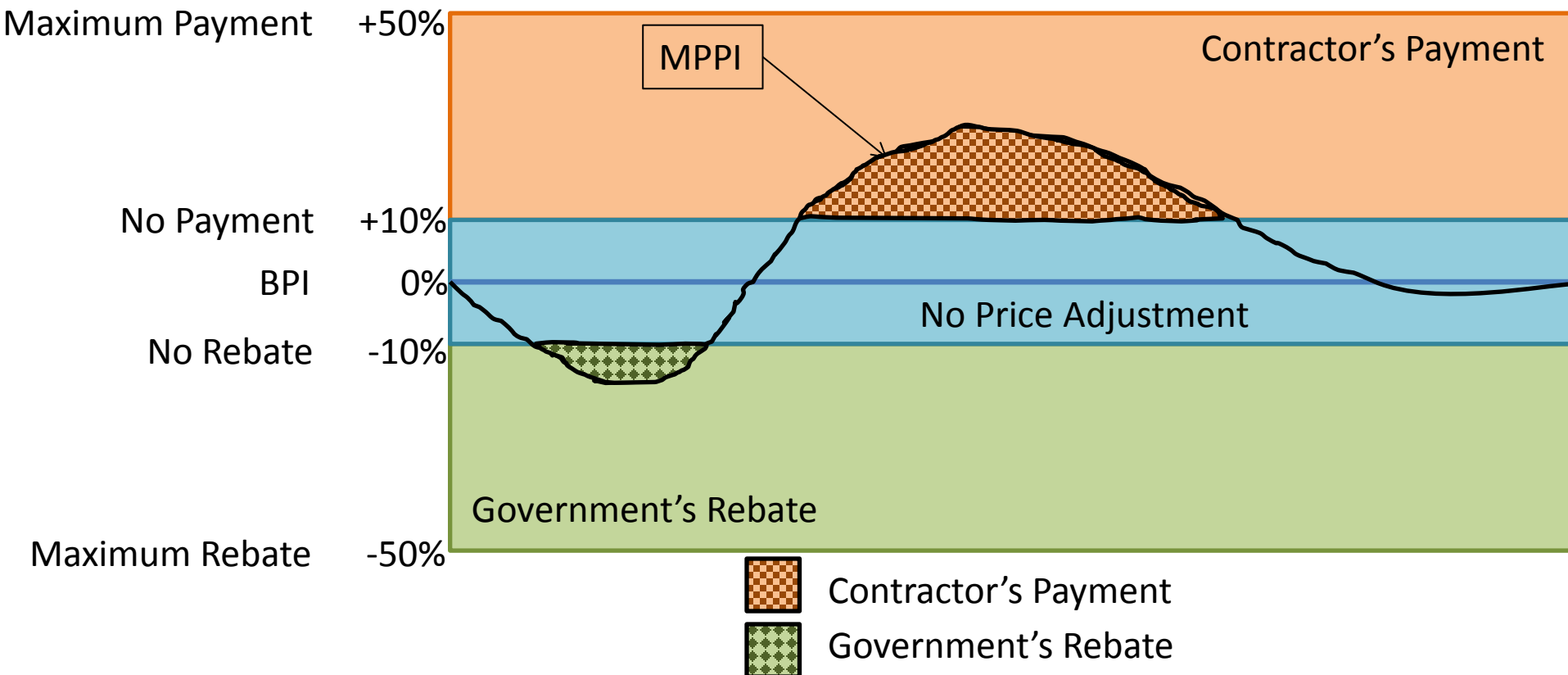
Fuel

- **Government rebate** – When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate as follows:

- **Contractor payment** – When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment as follows:

  Contractor Payment = (MPPI/BPI – 1.10) (BPI) (Q) (FUF)

where:

Q = Quantity of work on the project during the progress payment period for pay items shown in Table 109-1.

FUF = Fuel Usage Factor shown in Table 109-2.

When calculating the payment or rebate, the Government will round each portion of the calculation to two decimal places.

Fuel

Table 109-2
Fuel Usage Factors

Pay Items	Fuel Usage Factor[2]
Section 204 – Excavation and Embankment 20402 Subexcavation	0.30 gallons/yard^3 (0.39 gallons/meter^3)
Section 204 – Excavation and Embankment 20411 Select borrow[1]	0.70 gallons/ton (0.77 gallons/metric ton)
Section 401 – Superpave Hot Asphalt Concrete Pavement 40101 Superpave pavement	2.40 gallons/ton (2.65 gallons/metric ton)

[1] The Government will convert pay item quantities to match Fuel Usage Factor units.
[2] Fuel Usage Factor based on U.S. gallons.

Fuel

Example 1:

BPI = 3.19
MPPI = 2.97
MPPI/BPI = $\frac{2.97}{3.19} = 0.93$

Since the MPPI/BPI is between 0.9 and 1.1, there is no adjustment.

Example 2:

BPI = 3.19
MPPI = 3.34
MPPI/BPI = $\frac{3.34}{3.19} = 1.06$

Since the MPPI/BPI is between 0.9 and 1.1, there is no adjustment.

Fuel

Example 3:

BPI = 3.19
MPPI = 2.54
MPPI/BPI = $\frac{2.54}{3.19}$ = 0.80
0.80 = <0.90 = Government Rebate
Material = 20402 Subexcavation
Quantity = 10,346.1 yards^3
FUF = 0.30 gallons/yard^3

$$Government\ Rebate = \left(0.90 - \frac{MPPI}{BPI}\right) * BPI * Q * FUF$$

$$Government\ Rebate = (0.90 - 0.80) * 3.19 * 10{,}346.1 * 0.30 = \$990.12$$

Fuel

Example 4:

BPI = 3.19
MPPI = 3.65
MPPI/BPI = $\frac{3.65}{3.19}$ = 1.14
1.14 = >1.10 = Contractor Payment
Material = 20402 Subexcavation
Quantity = 10,346.1 yards^3
FUF = 0.30 gallons/yard^3

$$Contractor\ Payment = \left(\frac{MPPI}{BPI} - 1.10\right) * BPI * Q * FUF$$
$$Contractor\ Payment = (1.14 - 1.10) * 3.19 * 10{,}346.1 * 0.30 = \$396.05$$

Fuel

Example 5:

BPI = 3.19

MPPI = 1.52

MPPI/BPI = $\frac{1.52}{3.19} = 0.48$

0.48 = <0.90 = Government Rebate

Can only go as low as 0.50

Material = 20402 Subexcavation

Quantity = 10,346.1 yards^3

FUF = 0.30 gallons/yard^3

$$Government\ Rebate = \left(0.90 - \frac{MPPI}{BPI}\right) * BPI * Q * FUF$$

$$Government\ Rebate = (0.90 - 0.50) * 3.19 * 10{,}346.1 * 0.30 = \$3{,}960.49$$

Fuel

Example 6:

BPI = 3.19

MPPI = 4.96

MPPI/BPI = $\frac{4.96}{3.19} = 1.55$

1.55 = >1.10 = Contractor Payment

Can only go as high as 1.50

Material = 20402 Subexcavation

Quantity = 10,346.1 yards^3

FUF = 0.30 gallons/yard^3

$$Contractor\ Payment = \left(\frac{MPPI}{BPI} - 1.10\right) * BPI * Q * FUF$$

$$Contractor\ Payment = (1.50 - 1.10) * 3.19 * 10{,}346.1 * 0.30 = \$3960.49$$

Project Engineer's Responsibility

- Make sure you let Final Review know when your mix design has been approved
- Make sure asphalt/fuel escalation items are paid for in the month that the work is preformed
  - Project Engineer will track fuel/asphalt items monthly and give estimated quantities to Final Review
  - If the paynotes for that item reflect the correct quantities, just make note in your email when submitting your estimate.
- Escalation is not paid on modification items