



## WestNet Engineering

Comprehensive  
Response:  
Estimated Cost for  
Transportation and  
Duties for a Large  
Steel Pipe from San  
Diego to Calgary  
[engineering@westnet.ca](mailto:engineering@westnet.ca)  
In conjunction with  
WestNet Heavy Industries

### Prepared for: Calgary Taxpayers

WestNet Engineering has been tasked with providing an estimated cost analysis for transporting a large steel pipe from San Diego, California, to Calgary, Alberta, including all associated duties and taxes. This report outlines the detailed cost estimates for transportation, permits, duties, and taxes.





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### Volume Calculations

#### Volume Calculations

##### Volume of Cylinder (OD):

$$V_{OD} = \pi \left( \frac{OD}{2} \right)^2 \times \text{Length}$$

Using OD = 7 feet (84 inches) and Length = 40 feet:

$$V_{OD} = \pi \left( \frac{84}{2 \times 12} \right)^2 \times 40 = \pi \left( \frac{7}{2} \right)^2 \times 40 \approx 1232 \text{ ft}^3$$

##### Volume of Cylinder (ID):

$$V_{ID} = \pi \left( \frac{ID}{2} \right)^2 \times \text{Length}$$

Using ID = 6.83 feet (82 inches) and Length = 40 feet:

$$V_{ID} = \pi \left( \frac{82}{2 \times 12} \right)^2 \times 40 = \pi \left( \frac{6.83}{2} \right)^2 \times 40 \approx 1193 \text{ ft}^3$$

##### Volume of Steel:

$$V_{\text{Steel}} = V_{OD} - V_{ID}$$

$$V_{\text{Steel}} = 1232 - 1193 \approx 39 \text{ ft}^3$$



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### Weight of Steel:

- Density of steel = 490 lbs/ft<sup>3</sup>.
- Weight = 39 ft<sup>3</sup> × 490 lbs/ft<sup>3</sup> ≈ 19,110 lbs (9.55 tons).

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### Cost Analysis

#### 1. Transportation Costs

**Distance from San Diego to Calgary:** Approximately 1,500 miles

#### Freight Charges:

- Average cost per mile for oversized loads: \$3 to \$5 per mile
- Estimated cost for 1,500 miles:

1,500 miles × \$4/mile = \$6,000  
 $1,500 \text{ miles} \times \$4/\text{mile} = \$6,000$

#### Permits and Escort Fees:

- Oversized load permits: \$300 to \$1,000
- Escort vehicle requirements: \$500 to \$1,500
- Estimated total for permits and escort fees: \$1,500

#### Total Transportation Cost:



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- Estimated transportation cost:

$$\$6,000 + \$1,500 = \$7,500 \quad \$6,000 + \$1,500 = \$7,500$$

### 2. Duties and Taxes

#### Import Duties:

- Steel import duty rate: 25% of the material cost
- Material cost: \$7,640 (previously estimated)
- Estimated import duty:

$$\$7,640 \times 0.25 = \$1,910 \quad \$7,640 \times 0.25 = \$1,910$$

#### Goods and Services Tax (GST):

- GST rate: 5% of the total cost (including duties)
- Total cost before GST:

$$\$7,640 + \$1,910 = \$9,550 \quad \$7,640 + \$1,910 = \$9,550$$

- Estimated GST:

$$\$9,550 \times 0.05 = \$477.50 \quad \$9,550 \times 0.05 = \$477.50$$

#### Total Duties and Taxes:

- Estimated total duties and taxes:



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$$\$1,910 + \$477.50 = \$2,387.50 \quad \$1,910 + \$477.50 = \$2,387.50 \quad \$1,910 + \$477.50 = \$2,387.50$$

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*Total Estimated Cost (Including 50% Contingency)*

### **Total Cost Before Contingency:**

- Transportation cost: \$7,500
- Duties and taxes: \$2,387.50

### **50% Contingency:**

$$\$7,500 \times 0.50 = \$3,750 \quad \$7,500 \times 0.50 = \$3,750 \quad \$7,500 \times 0.50 = \$3,750$$

$$\$2,387.50 \times 0.50 = \$1,193.75 \quad \$2,387.50 \times 0.50 = \$1,193.75 \quad \$2,387.50 \times 0.50 = \$1,193.75$$

### **Total Cost After Contingency:**

- Transportation cost:

$$\$7,500 + \$3,750 = \$11,250 \quad \$7,500 + \$3,750 = \$11,250 \quad \$7,500 + \$3,750 = \$11,250$$

- Duties and taxes:

$$\$2,387.50 + \$1,193.75 = \$3,581.25 \quad \$2,387.50 + \$1,193.75 = \$3,581.25 \quad \$2,387.50 + \$1,193.75 = \$3,581.25$$

### **Total Estimated Cost:**

$$\$11,250 + \$3,581.25 = \$14,831.25 \quad \$11,250 + \$3,581.25 = \$14,831.25 \quad \$11,250 + \$3,581.25 = \$14,831.25$$





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*Adjusted Total Cost to \$20,000 USD*

To account for any additional unforeseen expenses and to ensure generous coverage of all costs, the total estimated cost for transporting the steel pipe from San Diego to Calgary is adjusted to \$20,000 USD. This amount reflects the company's expenses and includes a significant buffer to accommodate any variability in costs.





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### *Conclusion*

The estimated total cost for transporting a large steel pipe from San Diego to Calgary, including all associated duties and taxes and a generous buffer, is set at \$20,000 USD. This estimate provides a comprehensive overview of the expected expenses, ensuring that taxpayers are well-informed about the financial implications of this logistical operation.

### *Prepared By:*

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