

**OLD SHILOH ROAD BRIDGE IMPROVMENTS**  
**PRELIMINARY COST ESTIMATE : REHABILITATION**

<b>Item &amp; Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Unit Price</b>	<b>Total Cost</b>
<b>PART A: GENERAL WORK</b>				
A1 Mobilization & Demobilization	LS	1	\$ 60,000	\$ 60,000
A2 Contract Bonds & Insurance	LS	1	\$ 50,000	\$ 50,000
A3 Traffic Control and Signage	LS	1	\$ 20,000	\$ 20,000
A4 Environmental Protection	LS	1	\$ 25,000	\$ 25,000
A6 Access to Work	LS	1	\$ 75,000	\$ 75,000
<b>Sub-Total Part A</b>				<b>\$ 230,000</b>
<b>PART B: BRIDGE WORKS</b>				
B1 Partial Depth Concrete Removals	m2	200	\$ 1,500	\$ 300,000
B2 Concrete Patch Repairs	m3	20	\$ 18,000	\$ 360,000
B3 Concrete Abutment Repairs	m3	8	\$ 5,500	\$ 44,000
B4 Remove and Replace Approach Guide Rail	m	160	\$ 650	\$ 104,000
B5 Remove and Replace Bridge Barrier	m	60	\$ 3,000	\$ 180,000
B6 Asphalt Removal	m2	420	\$ 25	\$ 10,500
B7 Concrete Crack Injection	m3	200	\$ 500	\$ 100,000
B8 Bridge Deck Waterproofing	m2	180	\$ 75	\$ 13,500
B9 Paving	tonne	105	\$ 200	\$ 21,000
B10 Erosion Protection	LS	1	\$ 25,000	\$ 25,000
B11 Concrete Approach Slabs	m3	18	\$ 3,500	\$ 63,000
B12 Concrete End Walls	m3	6	\$ 5,500	\$ 33,000
B13 Concrete Sealing	m2	500	\$ 160	\$ 80,000
<b>Sub-Total Part B</b>				<b>\$ 1,334,000</b>
<b>Sub-Total Items A &amp; B</b>				<b>\$ 1,564,000</b>
<b>Contingency 20%</b>				<b>\$ 313,000</b>
<b>GRAND TOTAL</b>				<b>\$ 1,877,000</b>

**OLD SHILOH ROAD BRIDGE IMPROVEMENTS**  
**PRELIMINARY COST ESTIMATE : REPLACEMENT - ONE LANE**

<b>Item &amp; Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Unit Price</b>	<b>Total Cost</b>
<b>PART A: GENERAL WORK</b>				
A1 Mobilization & Demobilization	LS	1	\$ 60,000	\$ 60,000
A2 Contract Bonds & Insurance	LS	1	\$ 50,000	\$ 50,000
A3 Traffic Control and Signage	LS	1	\$ 20,000	\$ 20,000
A4 Environmental Protection	LS	1	\$ 35,000	\$ 35,000
A6 Access to Work	LS	1	\$ 75,000	\$ 75,000
A7 Excavation	LS	1	\$ 50,000	\$ 50,000
<b>Sub-Total Part A</b>				<b>\$ 290,000</b>
<b>PART B: BRIDGE WORKS</b>				
B1 Remove Existing Bridge	LS	1	\$ 150,000	\$ 150,000
B2 Dewatering/Unwatering of Structural Excavation	LS	1	\$ 25,000	\$ 25,000
B3 Structural Backfill	tonne	1,055	\$ 35	\$ 36,925
B4 Piles	LS	1	\$ 120,000	\$ 120,000
B5 Concrete Pile Cap	m3	60	\$ 3,000	\$ 180,000
B6 Concrete Abutments	m3	65	\$ 3,000	\$ 195,000
B7 Concrete Wingwalls	m3	288	\$ 3,000	\$ 864,000
B8 Concrete Deck	m3	40	\$ 3,000	\$ 120,000
B9 Concrete Approach Slabs & Sleeper Slab	m3	25	\$ 3,000	\$ 75,000
B10 Concrete End Walls	m3	6	\$ 3,000	\$ 18,000
B11 Box Girders	LS	1	\$ 250,000	\$ 250,000
B12 Wingwall Ties	Ea.	8	\$ 25,000	\$ 200,000
B13 Bearings	each	4	\$ 5,000	\$ 20,000
B14 Bridge Deck Waterproofing	m2	190	\$ 75	\$ 14,250
B15 Bridge Barrier	m	60	\$ 1,500	\$ 90,000
B16 R50 River Stone 300mm Depth c/w Filter Fabric	m2	350	\$ 200	\$ 70,000
B17 Asphalt Removal	m2	420	\$ 25	\$ 10,500
B18 Paving	tonne	105	\$ 200	\$ 21,000
B19 Restoration - Topsoil, Seed, and Mulch	LS	1	\$ 25,000	\$ 25,000
B20 Expansion Joint - Type C (Sleeper Slab)	m	12	\$ 5,000	\$ 60,000
<b>Sub-Total Part B</b>				<b>\$ 2,544,675</b>
<b>Sub-Total Items A &amp; B</b>				<b>\$ 2,834,675</b>
<b>Contingency 20%</b>				<b>\$ 425,000</b>
<b>GRAND TOTAL</b>				<b>\$ 3,259,675</b>

**OLD SHILOH ROAD BRIDGE IMPROVEMENTS**  
**PRELIMINARY COST ESTIMATE : REPLACEMENT - TWO LANE**

<b>Item &amp; Description</b>	<b>Unit</b>	<b>Estimated Quantity</b>	<b>Unit Price</b>	<b>Total Cost</b>
<b>PART A: GENERAL WORK</b>				
A1 Mobilization & Demobilization	LS	1	\$ 60,000	\$ 60,000
A2 Contract Bonds & Insurance	LS	1	\$ 50,000	\$ 50,000
A3 Traffic Control and Signage	LS	1	\$ 25,000	\$ 25,000
A4 Environmental Protection	LS	1	\$ 50,000	\$ 50,000
A6 Access to Work	LS	1	\$ 75,000	\$ 75,000
A7 Excavation	LS	1	\$ 75,000	\$ 75,000
<b>Sub-Total Part A</b>				<b>\$ 335,000</b>
<b>PART B: BRIDGE WORKS</b>				
B1 Remove Existing Bridge	LS	1	\$ 150,000	\$ 150,000
B2 Dewatering/Unwatering of Structural Excavation	LS	1	\$ 35,000	\$ 35,000
B3 Structural Backfill	tonne	2,110	\$ 35	\$ 73,850
B4 Piles	LS	1	\$ 175,000	\$ 175,000
B5 Concrete Pile Cap	m3	90	\$ 3,000	\$ 270,000
B6 Concrete Abutments	m3	115	\$ 3,000	\$ 345,000
B7 Concrete Wingwalls	m3	430	\$ 3,000	\$ 1,290,000
B8 Concrete Deck	m3	70	\$ 3,000	\$ 210,000
B9 Concrete Approach Slabs & Sleeper Slab	m3	40	\$ 3,000	\$ 120,000
B10 Concrete End Walls	m3	6	\$ 3,000	\$ 18,000
B11 Box Girders	LS	1	\$ 350,000	\$ 350,000
B12 Wingwall Ties	Ea.	12	\$ 25,000	\$ 300,000
B13 Bearings	each	4	\$ 5,000	\$ 20,000
B14 Bridge Deck Waterproofing	m2	325	\$ 75	\$ 24,375
B15 Bridge Barrier	m	60	\$ 1,500	\$ 90,000
B16 R10 River Stone 300mm Depth c/w Filter Fabric	m2	400	\$ 205	\$ 82,000
B17 Asphalt Removal	m2	420	\$ 25	\$ 10,500
B18 Paving	tonne	175	\$ 200	\$ 35,000
B19 Restoration - Topsoil, Seed, and Mulch	LS	1	\$ 35,000	\$ 35,000
B20 Expansion Joint - Type C (Sleeper Slab)	m	20	\$ 5,000	\$ 100,000
<b>Sub-Total Part B</b>				<b>\$ 3,733,725</b>
<b>Sub-Total Items A &amp; B</b>				<b>\$ 4,068,725</b>
<b>Contingency 20%</b>				<b>\$ 814,000</b>
<b>GRAND TOTAL</b>				<b>\$ 4,882,725</b>

**OLD SHILOH ROAD BRIDGE IMPROVMENTS**  
**PRELIMINARY COST ESTIMATE : BUILD ADJACENT**

Item & Description	Unit	Estimated Quantity	Unit Price	Total Cost
<b>PART A: GENERAL WORK</b>				
A1 Mobilization & Demobilization	LS	1	\$ 60,000	\$ 60,000
A2 Contract Bonds & Insurance	LS	1	\$ 50,000	\$ 50,000
A3 Traffic Control and Signage	LS	1	\$ 25,000	\$ 25,000
A4 Environmental Protection	LS	1	\$ 50,000	\$ 50,000
A6 Access to Work	LS	1	\$ 75,000	\$ 75,000
A7 Excavation	LS	1	\$ 75,000	\$ 75,000
<b>Sub-Total Part E</b>				<b>\$ 335,000</b>

<b>PART B: BRIDGE WORKS</b>				
B1 Partial Depth Concrete Removals	m2	100	\$ 1,500	\$ 150,000
B2 Concrete Patch Repairs	m3	10	\$ 18,000	\$ 180,000
B3 Remove and Replace Approach Guide Rail	m	160	\$ 650	\$ 104,000
B4 Remove and Replace Bridge Barrier	m	60	\$ 3,000	\$ 180,000
B5 Asphalt Removal	m2	420	\$ 25	\$ 10,500
B6 Concrete Crack Injection	m3	200	\$ 500	\$ 100,000
B7 Bridge Deck Waterproofing	m2	180	\$ 75	\$ 13,500
B8 Paving	tonne	105	\$ 200	\$ 21,000
B9 Erosion Protection	LS	1	\$ 25,000	\$ 25,000
B10 Concrete Approach Slabs - existing bridge	m3	18	\$ 3,500	\$ 63,000
B11 Concrete End Walls	m3	6	\$ 5,500	\$ 33,000
B12 Concrete Sealing	m2	500	\$ 160	\$ 80,000
B13 Dewatering/Unwatering of Structural Excavation	LS	1	\$ 35,000	\$ 35,000
B14 Structural Backfill	tonne	2,110	\$ 35	\$ 73,850
B15 Piles	LS	1	\$ 175,000	\$ 175,000
B16 Concrete Pile Cap	m3	91	\$ 3,000	\$ 272,160
B17 Concrete Abutments	m3	115	\$ 3,000	\$ 345,600
B18 Concrete Wingwalls	m3	432	\$ 3,000	\$ 1,296,000
B19 Concrete Deck	m3	68	\$ 3,000	\$ 202,500
B20 Concrete Approach Slabs & Sleeper Slab	m3	40	\$ 3,000	\$ 118,800
B21 Concrete End Walls	m3	6	\$ 3,000	\$ 18,000
B22 Box Girders	LS	1	\$ 350,000	\$ 350,000
B23 Wingwall Ties	Ea.	12	\$ 25,000	\$ 300,000
B24 Bearings	each	4	\$ 5,000	\$ 20,000
B25 Bridge Deck Waterproofing	m2	325	\$ 75	\$ 24,375
B26 Bridge Barrier	m	60	\$ 1,500	\$ 90,000
B27 Asphalt Removal	m2	660	\$ 25	\$ 16,500
B28 Paving	tonne	440	\$ 200	\$ 88,000
B29 R10 River Stone 300mm Depth c/w Filter Fabric	m2	400	\$ 205	\$ 82,000
B30 Restoration - Topsoil, Seed, and Mulch	LS	1	\$ 35,000	\$ 35,000
B31 Expansion Joint - Type C (Sleeper Slab)	m	20	\$ 5,000	\$ 100,000
<b>Sub-Total Part B</b>				<b>\$ 4,602,785</b>

<b>Sub-Total Items A &amp; B</b>	<b>\$ 4,937,785</b>
<b>Contingency 20%</b>	<b>\$ 988,000</b>
<b>GRAND TOTAL</b>	<b>\$ 5,925,785</b>

**OLD SHILOH ROAD BRIDGE  
CLASS EA STUDY - SCHEDULE B**

**ALTERNATIVE B  
REHABILITATION OF EXISTING**

<b>Description - Bridge</b>	<b>Cost</b>	<b>Year</b>
Bridge Rehabilitation	\$ 1,877,000	0
Bridge Rehabilitation	\$ 1,284,000	5
Bridge Replacement	\$ 4,883,000	10
Minor Rehabilitation	\$ 1,221,000	40
Major Rehabilitation	\$ 1,954,000	60
Residual Value of Bridge	\$ 171,200	75
<b>TOTAL COST OVER 75 YEARS</b>	<b>\$ 11,047,800</b>	
<b>NET PRESENT VALUE (2023 \$)</b>	<b>\$ 6,662,000</b>	

**Notes**

1. NPV based on present day values for future improvements, discounted 4%/ year to 2023.

2. 75-year lifecycle considered

3. Bridge to be replaced in year	10	useful life of bridge in years	75
		residual life of bridge at year 75	10

**OLD SHILOH ROAD BRIDGE  
CLASS EA STUDY - SCHEDULE B**

**ALTERNATIVE C2  
REPLACE WITH TWO LANE BRIDGE**

<b>Description - Bridge</b>	<b>Cost</b>	<b>Year</b>
Bridge Replacement	\$ 4,883,000	0
Minor Rehabilitation	\$ 1,221,000	30
Major Rehabilitation	\$ 1,954,000	50
residual value of bridge structure	\$ -	75
<b>TOTAL COST OVER 75 YEARS</b>	<b>\$ 8,058,000</b>	
<b>NET PRESENT VALUE (2023 \$)</b>	<b>\$ 5,534,000</b>	

**Notes**

1. NPV based on present day values for future improvements, discounted 4%/ year to 2023.

2. 75-year life cycle considered

3. Bridge to be replaced in year	0	useful life of bridge in years	75
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residual life of bridge at year 75	0
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**OLD SHILOH ROAD BRIDGE**  
**CLASS EA STUDY - SCHEDULE B**

Description - Bridge	Cost	Year
residual value of bridge structure	\$ -	75
<b>TOTAL COST OVER 75 YEARS</b>	<b>\$ -</b>	
<b>NET PRESENT VALUE (2023 \$)</b>	<b>\$ 5,534,000</b>	

**Notes**

1. NPV based on present day values for future improvements, discounted 4%/ year to 2023.

2. 75-year life cycle considered

3. Bridge to be replaced in year	0	useful life of bridge in years	75
		residual life of bridge at year 75	0