

# GILA RIVER DIVERSION, CONVEYANCE AND STORAGE ALTERNATIVES

## PRELIMINARY COST ESTIMATE

### Cost Estimate for GBIC Proposal (Diversion Structure and Conveyances)

Item	Description	Quantity	Unit	Unit Price	Amount
<b>CONSTRUCTION</b>					
1	Mobilization / Demobilization	10%	%	-	\$83,000
2	Construction Surveying and Staking	3%	%	-	\$25,000
3	Materials Testing	3%	%	-	\$25,000
<b>Diversion</b>					
4	Diversion Structure	1	LS	\$600,000	\$600,000
<b>Conveyances</b>					
5	Diversion Structure to Ft West Ditch	1	LS	\$136,000	\$136,000
6	Ft West Ditch to Gila Farm Ditch	1	LS	\$95,000	\$95,000
	Subtotal all construction items				\$964,000
	Contingency	30%	%		\$289,000
	<b>CONSTRUCTION SUBTOTAL</b>				<b>\$1,253,000</b>
<b>Non-Construction</b>					
7	Topographic Survey & Mapping (Diversion Site and Ditch Alignments)	8	AC	\$5,000	\$41,000
8	Design	10%	%	\$125,000	\$125,000
9	Permitting, Environmental & Geotechnical Investigations	1	LS	\$130,000	\$130,000
10	Right-of-Way Easement Development (Ditch)	9	EA	\$750	\$7,000
11	Easement Acquisition (Ditch)	7	AC	\$1,000	\$7,000
12	Construction Observation and Management	8%	%	\$100,000	\$100,000
	<b>NON-CONSTRUCTION SUBTOTAL</b>				<b>\$410,000</b>
	Total all Items				<b>\$1,663,000</b>
	NMGRT	6.1875%	%		\$103,000
	<b>GRAND TOTAL</b>				<b>\$1,766,000</b>

This estimate of construction cost is only an opinion. BHI cannot and does not guarantee that proposals, bids, or actual Construction Costs will not vary from this opinion.

# GILA RIVER DIVERSION, CONVEYANCE AND STORAGE ALTERNATIVES

## PRELIMINARY COST ESTIMATE

### Cost Estimate for GBIC Proposal (Diversion Structure)

Item	Description	Quantity	Unit	Unit Price	Amount
<b>Construction</b>					
<b>Combined Rock Vane Weir Diversion Structure</b>					
1	Mobilization / Demobilization	10%	%	-	\$60,000
2	Construction Surveying and Staking	3%	%	-	\$18,000
3	Materials Testing	3%	%	-	\$18,000
4	Temporary Construction Dam and Dewatering	1	LS	\$200,000	\$200,000
5	Excavation, fill and compact	419	CY	\$16	\$7,000
6	Rock excavation, fill and compact	180	CY	\$100	\$18,000
7	Reinforced concrete	48	CY	\$800	\$38,000
8	Grouted Boulders	454	CY	\$700	\$318,000
9	Headgates	6	EA	\$2,800	\$17,000
	<b>CONSTRUCTION SUBTOTAL</b>				<b>\$694,000</b>
	Contingency	30%	%		\$208,000
	<b>CONSTRUCTION SUBTOTAL</b>				<b>\$902,000</b>
<b>Non-Construction</b>					
10	Topographic Survey & Mapping (Diversion Site)	1	AC	\$5,000	\$5,000
11	Design	10%	%	\$90,000	\$90,000
12	Permitting, Environmental & Geotechnical Investigations	1	LS	\$50,000	\$50,000
13	Construction Observation and Management	8%	%	\$72,000	\$72,000
	<b>NON-CONSTRUCTION SUBTOTAL</b>				<b>\$217,000</b>
	Total all Items				<b>\$1,119,000</b>
	NMGRT	6.1875%	%		\$69,000
	<b>GRAND TOTAL</b>				<b>\$1,188,000</b>

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- Notes:**
- Excavation earthwork spans the length of the rock vane weir structure 245', 2 layers of 1.5 m diameter rocks would require excavation of 5'x10' with 1' additional making area 6'x11' along length of weir
  - Rock excavation is estimated at 30% of total excavation, traditional excavation at 70% of total excavation
  - Reinforced concrete quantity is equal to 2x reinforced concrete for one diversion structure. Reinforced concrete volume includes headwall, diversion ditch transition to earthen channel, and concrete lining for diversion structure and headwall, dimensions shown on Figure 16, Concrete lining assumes 1.5' thickness in main diversion structure and 0.75' thickness in diversion ditch transition
  - Rock vane weir costs span entire length of rock weir 245' plus and additional 245' for second layer of structure in main channel

# GILA RIVER DIVERSION, CONVEYANCE AND STORAGE ALTERNATIVES

## PRELIMINARY COST ESTIMATE

### Cost Estimate for GBIC Proposal (Earthen Ditch from Diversion to Ft West Ditch)

Item	Description	Quantity	Unit	Unit Price	Amount
<b>Construction</b>					
<b>Earthen Embankments</b>					
1	Mobilization / Demobilization	10%	%	-	\$14,000
2	Construction Surveying and Staking	3%	%	-	\$4,000
3	Materials Testing	3%	%	-	\$4,000
4	Site clearing and grubbing including tree removal and disposal	4	AC	\$1,000	\$4,000
5	Foundation Preparation	8,765	SY	\$2	\$18,000
6	Excavation and Backfill	3,896	CY	\$16	\$62,000
7	24" Siphon	600	LF	\$86	\$52,000
<b>CONSTRUCTION SUBTOTAL</b>					<b>\$158,000</b>
	Contingency	30%	%		\$47,000
<b>CONSTRUCTION SUBTOTAL</b>					<b>\$205,000</b>
<b>Non-Construction</b>					
8	Topographic Survey & Mapping (Ditch Alignment)	4	AC	\$5,000	\$19,000
9	Design	10%	%	\$21,000	\$21,000
10	Permitting, Environmental & Geotechnical Investigations	1	LS	\$40,000	\$40,000
11	Right-of-Way Easement Development (Ditch)	5	EA	\$750	\$4,000
12	Easement Acquisition (Ditch)	4	AC	\$1,000	\$4,000
13	Construction Observation and Management	8%	%	\$16,000	\$16,000
<b>NON-CONSTRUCTION SUBTOTAL</b>					<b>\$104,000</b>
Total all Items					<b>\$309,000</b>
	NMGRT	6.1875%	%		\$19,000
<b>GRAND TOTAL</b>					<b>\$328,000</b>

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- Notes:
1. Site clearing and grubbing spans 3287' along the ditch with a width of 50'
  2. Foundation preparation was for 24' of embankment spanning 3287'
  3. Place and compact embankment for the embankment shown in Figure 20, Area of one embankment = 16 sq. ft. spanning 3287'
  4. Easement acquisition spans 3287' and allows for 50' right of way

# GILA RIVER DIVERSION, CONVEYANCE AND STORAGE ALTERNATIVES

## PRELIMINARY COST ESTIMATE

### Cost Estimate for GBIC Proposal (Earthen Ditch from Ft West Ditch to Gila Farm Ditch)

Item	Description	Quantity	Unit	Unit Price	Amount
<b>Construction</b>					
<b>Earthen Embankments</b>					
1	Mobilization / Demobilization	10%	%	-	\$10,000
2	Construction Surveying and Staking	3%	%	-	\$3,000
3	Materials Testing	3%	%	-	\$3,000
4	Site clearing and grubbing including tree removal and disposal	4	AC	\$1,000	\$4,000
5	Foundation Preparation	8,149	SY	\$2	\$16,000
6	Excavation and Backfill	3,633	CY	\$16	\$58,000
7	24" Siphon	200	LF	\$86	\$17,000
<b>CONSTRUCTION SUBTOTAL</b>					<b>\$111,000</b>
	Contingency	30%	%		\$33,000
<b>CONSTRUCTION SUBTOTAL</b>					<b>\$144,000</b>
<b>Non-Construction</b>					
8	Topographic Survey & Mapping (Ditch Alignment)	4	AC	\$5,000	\$18,000
9	Design	10%	%	\$14,000	\$14,000
10	Permitting, Environmental & Geotechnical Investigations	1	LS	\$40,000	\$40,000
11	Right-of-Way Easement Development (Ditch)	4	EA	\$750	\$3,000
12	Easement Acquisition (Ditch)	4	AC	\$1,000	\$4,000
13	Construction Observation and Management	8%	%	\$12,000	\$12,000
<b>NON-CONSTRUCTION SUBTOTAL</b>					<b>\$91,000</b>
Total all Items					<b>\$235,000</b>
	NMGRT	6.1875%	%		\$15,000
<b>GRAND TOTAL</b>					<b>\$250,000</b>

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- Notes:
1. Site clearing and grubbing spans 3056' along the ditch with a width of 50'
  2. Foundation preparation was for 24' of embankment spanning 3056'
  3. Place and compact embankment for the embankment shown in Figure 20, Area of one embankment = 16 sq. ft. spanning 3065'
  4. Easement acquisition spans 3065' and allows for 50' right of way

# GILA RIVER DIVERSION, CONVEYANCE AND STORAGE ALTERNATIVES

## PRELIMINARY COST ESTIMATE

**Table G16: Estimated Annual Operations and Maintenance Costs**

**GBIC Proposal**

<b>Item #</b>	<b>Item Description</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Price</b>	<b>Amount</b>
1	Parts and Repairs (1% of Construction Costs)	\$ 1,253,000	%	1%	\$ 13,000
2	Equipment (50% of Parts and Repairs)	\$ 13,000	%	50%	\$ 6,500
3	Labor (1/4 Time Operator)	0.25	EA	\$ 55,000	\$ 13,750
4	Miscellaneous training, insurance, etc. (per operator)	3	month	\$ 1,000	\$ 3,000
	<b>Total</b>				<b>\$ 36,250</b>