ESTIMATE WORKSHEET

FEATURE:

Klamath River Dams Removal
Partial Removal Option
Copco No. 1 Dam & Powerplant Removal
Escalation NOT Included
SUMMARY ESTIMATE

PROJECT: Klamath River, Northern California/Southern Oregon

WOID: AF652 | **ESTIMATE LEVEL:** Feasibility
REGION: MP | **PRICE LEVEL:** Jul-2010
FILE: C:\Estimating\Klamath\Klamath River Dams\Removal - Partial\Feasibility Estimates\Copco 1\[Copco 1 - Partial Removal Crystal Ball - with Escalation - 2011-04.xlsx]Copco 1 - Full - with Esc

PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	MPL QUANTITY	MP QUANTITY	MPH QUANTITY	UNIT	MPL UNIT PRICE	MP UNIT PRICE	MPH UNIT PRICE	MPL TOTAL	MP TOTAL	MPH TOTAL
	1	Furnish, Install, and Remove Barge-Mounted Crane in Reservoir for Dam Removal	8130	1	1	1	LS	$340,000.00	$350,000.00	$370,000.00	$340,000.00	$350,000.00	$370,000.00
	2	Remove Sediment from Diversion Tunnel Intake to provide access	8130	30	30	30	CY	$1,700.00	$2,000.00	$3,000.00	$51,000.00	$60,000.00	$90,000.00
	3	Furnish, Install, and Remove Large Crane on Right Abutment	8130	1	1	1	LS				$0.00	$0.00	$0.00
	4	Remove Water from behind Tailrace Cofferdam	8130	0	0	0	GAL				$0.00	$0.00	$0.00
	5	Riprap Protection on Cofferdam	8130	0	0	0	CY				$0.00	$0.00	$0.00
	6	Provide Dewatering behind Tailrace Cofferdam	8130	0	0	0	LS				$0.00	$0.00	$0.00
	7	Remove Current Diversion Tunnel Plug	8130	195	195	195	CY	$1,400.00	$1,500.00	$1,800.00	$273,000.00	$292,500.00	$351,000.00
	8	Construct Embankment Cofferdam in Tailrace	8130	0	0	0	CY				$0.00	$0.00	$0.00
	9	Furnish, Install & Remove 3-6'x6' Fabricated Slide Gates	8420	40,500	40,500	40,500	LBS	$12.00	$15.00	$18.00	$486,000.00	$607,500.00	$729,000.00
	10	Remove Concrete Dam down to Elev. 2476	8130	36,000	36,000	36,000	CY	$290.00	$300.00	$320.00	$10,440,000.00	$10,800,000.00	$11,520,000.00
	11	Remove Concrete Intake Structure on Right Abutment	8130	0	0	0	CY				$0.00	$0.00	$0.00
	12	Remove Structural Steel from Spillway	8130	55,000	55,000	55,000	LBS	$0.70	$1.00	$1.50	$38,500.00	$55,000.00	$82,500.00
	13	Install Diversion Tunnel Plugs	8130	24	24	24	CY	$1,100.00	$1,200.00	$1,300.00	$26,400.00	$28,800.00	$31,200.00
	14	Remove Diversion Tunnel Control Structure Concrete	8130	0	0	0	CY				$0.00	$0.00	$0.00
	15	Remove & Dispose of Hand Rails	8420	11,000	11,000	11,000	LBS	$0.70	$1.00	$1.50	$7,700.00	$11,000.00	$16,500.00
	16	Remove & Dispose of Radial Gates	8420	140,500	140,500	140,500	LBS	$0.70	$1.00	$1.50	$98,350.00	$140,500.00	$210,750.00
	17	Remove & Dispose of Radial Gate stoplogs	8420	18,000	18,000	18,000	LBS	$0.70	$1.00	$1.50	$12,600.00	$18,000.00	$27,000.00
	18	Remove & Dispose of Stoplog hoist, track and supports	8420	26,000	26,000	26,000	LBS	$0.70	$1.00	$1.50	$18,200.00	$26,000.00	$39,000.00
	19	Remove & Dispose of 3 sections of 23' of 72"Ø steel lining (embedded)	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	20	Remove & Dispose of 3 - 72" butterfly valves (embedded)	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	21	Remove & Dispose of 3-72" flapper valves with remote mechanical	8420	78,000	78,000	78,000	LBS	$2.50	$3.00	$5.00	$195,000.00	$234,000.00	$390,000.00
	22	Remove & Dispose of Spillway gate motor & control panel	8430	1	1	1	EA	$900.00	$1,000.00	$1,500.00	$900.00	$1,000.00	$1,500.00
	23	Remove & Dispose of Distribution equipment , panelboards	8430	1	1	1	EA	$5,000.00	$6,000.00	$7,000.00	$5,000.00	$6,000.00	$7,000.00
	24	Remove Powerhouse Concrete down to top of rock under the Powerhouse	8130	0	0	0	CY				$0.00	$0.00	$0.00
	25	Remove Powerhouse Structural Steel	8130	0	0	0	LBS				$0.00	$0.00	$0.00
	26	Remove & Dispose of 2 - Governor oil systems	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	27	Remove & Dispose of Cooling water and bearing oil systems	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	28	Remove & Dispose of 4 - Horizontal Tandem Francis Turbines	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	29	Remove & Dispose of 2 - 40 Ton indoor cranes	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	30	Remove & Dispose of Compressed Air system	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	31	Remove & Dispose of 2 - CO2 systems	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	32	Remove & Dispose of Plant Water and Fire Protection	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	33	Remove & Dispose of Transformer Oil Fire protection	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	34	Remove & Dispose of Unwatering Piping	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	35	Remove & Dispose of Drainage Piping	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	35A	Remove Petroleum Products from Mechanical Equipment	8420	1,250	1,250	1,250	GAL	$9.00	$10.00	$12.00	$11,250.00	$12,500.00	$15,000.00
	36	Remove & Dispose of Horizontal AC Generator, Indoor Open Frame	8430	0	0	0	EA				$0.00	$0.00	$0.00
	37	Remove & Dispose of Excitation equipment for 12.5 MVA Generator	8430	0	0	0	EA				$0.00	$0.00	$0.00
	38	Remove & Dispose of Surge protection equip. for 12.5 MVA Generator	8430	0	0	0	EA				$0.00	$0.00	$0.00
	39	Remove & Dispose of Neutral grounding equip. for 12.5 MVA Generator	8430	0	0	0	EA				$0.00	$0.00	$0.00
	40	Remove & Dispose of Generator Switchgear, 5kV-includes unit breakers	8430	0	0	0	EA				$0.00	$0.00	$0.00
	41	Remove & Dispose of Station Service Switchgear, 600 volt -(5 sections)	8430	0	0	0	EA				$0.00	$0.00	$0.00
	42	Remove & Dispose of Unit and plant control switchboard	8430	0	0	0	EA				$0.00	$0.00	$0.00
	43	Remove & Dispose of Battery system	8430	1	1	1	EA	$9,000.00	$10,000.00	$12,000.00	$9,000.00	$10,000.00	$12,000.00
	44	Remove & Dispose of Raceways, Conduit and Cable	8430	0	0	0	EA				$0.00	$0.00	$0.00
	45	Remove & Dispose of Misc. power & control boards	8430	0	0	0	EA				$0.00	$0.00	$0.00
	46	Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase, 5000kVA	8430	0	0	0	EA				$0.00	$0.00	$0.00

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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	MPL QUANTITY	MP QUANTITY	MPH QUANTITY	UNIT	MPL UNIT PRICE	MP UNIT PRICE	MPH UNIT PRICE	MPL TOTAL	MP TOTAL	MPH TOTAL
	47	Remove & Dispose of Step-up Transformers, indoor, oil-filled, 1-phase, 4165 kVA	8430	0	0	0	EA				$0.00	$0.00	$0.00
	48	Remove & Dispose of Seven 40-Ton Travelling Crane motors - hoist	8430	0	0	0	EA				$0.00	$0.00	$0.00
	49	Remove & Dispose of 40-Ton Travelling Crane control equipment	8430	0	0	0	EA				$0.00	$0.00	$0.00
	50	Remove & Dispose of 40-Ton Travelling Crane Festoon Cable	8430	0	0	0	EA				$0.00	$0.00	$0.00
	51	Remove & Dispose of Four 15-Ton Overhead Crane motors - hoist	8430	0	0	0	EA				$0.00	$0.00	$0.00
	52	Remove & Dispose of 15-Ton Overhead Crane control equipment	8430	0	0	0	EA				$0.00	$0.00	$0.00
	53	Remove & Dispose of 15-Ton Overhead Crane Festoon Cable	8430	0	0	0	EA				$0.00	$0.00	$0.00
	53A	Remove Oil from Oiled-filled Step-up Transformers	8430	10,500	10,500	10,500	GAL	$9.00	$10.00	$12.00	$94,500.00	$105,000.00	$126,000.00
	54	Remove & Dispose of 69-kV circuit breakers, oil-filled, PCB	8430	2	2	2	EA	$2,500.00	$3,000.00	$3,500.00	$5,000.00	$6,000.00	$7,000.00
	55	Remove & Dispose of 69-kV disconnect switches, group-operated	8430	2	2	2	EA	$1,000.00	$1,500.00	$2,000.00	$2,000.00	$3,000.00	$4,000.00
	56	Remove & Dispose of 60-foot wood poles	8430	12	12	12	EA	$900.00	$1,000.00	$1,300.00	$10,800.00	$12,000.00	$15,600.00
	57	Remove & Dispose of 30-foot wood crossarms	8430	24	24	24	EA	$400.00	$500.00	$600.00	$9,600.00	$12,000.00	$14,400.00
	58	Remove & Dispose of 69-kV insulator strings	8430	12	12	12	EA	$300.00	$400.00	$500.00	$3,600.00	$4,800.00	$6,000.00
	59	Remove & Dispose of Transmission Line No. 3	8430	1.66	1.66	1.66	MILE	$25,000.00	$30,000.00	$40,000.00	$41,500.00	$49,800.00	$66,400.00
	60	Remove & Dispose of Transmission Line No. 15	8430	1.23	1.23	1.23	MILE	$25,000.00	$30,000.00	$40,000.00	$30,750.00	$36,900.00	$49,200.00
	61	Remove & Dispose of Transmission Line No. 26-1	8430	0.07	0.07	0.07	MILE	$25,000.00	$30,000.00	$40,000.00	$1,750.00	$2,100.00	$2,800.00
	62	Remove & Dispose of Transmission Line No. 26-2	8430	0.07	0.07	0.07	MILE	$25,000.00	$30,000.00	$40,000.00	$1,750.00	$2,100.00	$2,800.00
	63	Remove gate house #1 from top of dam	8130	0	0	0	SF				$0.00	$0.00	$0.00
	64	Remove gate house #2 from top of dam	8130	0	0	0	SF				$0.00	$0.00	$0.00
	65	Remove Concrete Items associated with 10 ft. diam. Penstocks, reinf. Concrete	8130	0	0	0	CY				$0.00	$0.00	$0.00
	66	Plug 14-foot diameter penstock with concrete	8130	0	0	0	CY				$0.00	$0.00	$0.00
	67	Remove & Dispose of 8 screens	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	68	Remove & Dispose of 8 Water Gates	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	69	Remove & Dispose of 3 - 30"Ø x 25' stand pipes	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	70	Remove & Dispose of 14' Ø penstock pipe	8420	0	0	0	LBS				$0.00	$0.00	$0.00
	71	Remove & Dispose of 10' Ø penstock pipe	8140	0	0	0	LBS				$0.00	$0.00	$0.00
	72	Temporary Access Roads	8220	7	7	7	MILE	$60,000.00	$50,000.00	$100,000.00	$420,000.00	$350,000.00	$700,000.00
	73	Spring Ground Seeding	8220	420	420	0	ACRES	$3,000.00	$3,500.00	$4,000.00	$1,260,000.00	$1,470,000.00	$0.00
	74	Spring Barge Seeding	8220	82	82	0	ACRES	$5,000.00	$6,500.00	$8,000.00	$410,000.00	$533,000.00	$0.00
	75	Spring Aerial Seeding	8220	300	300	802	ACRES	$6,500.00	$7,500.00	$15,000.00	$1,950,000.00	$2,250,000.00	$12,030,000.00
	76	Fall Ground Seeding	8220	201	401	602	ACRES	$3,000.00	$3,500.00	$4,000.00	$603,000.00	$1,403,500.00	$2,408,000.00
	77	Riparian Pole Planting	8220	170	170	170	ACRES	$4,000.00	$8,500.00	$10,000.00	$680,000.00	$1,445,000.00	$1,700,000.00
	78	Weed Management	8220	201	401	602	ACRES	$1,000.00	$1,500.00	$2,000.00	$201,000.00	$601,500.00	$1,204,000.00
	79	Fall Ground Seeding	8220	321	321	321	ACRES	$3,000.00	$3,500.00	$4,000.00	$963,000.00	$1,123,500.00	$1,284,000.00
	80	Weed Management	8220	321	321	321	ACRES	$1,000.00	$1,500.00	$2,000.00	$321,000.00	$481,500.00	$642,000.00
	81	Sitework - Clear and Grub Disposal Area	8313	5.5	5.5	5.5	ACRES	$5,000.00	$6,000.00	$7,000.00	$27,500.00	$33,000.00	$38,500.00
	82	Sitework - Soil Cover for Disposal Area	8313	18,000	18,000	18,000	CY	$45.00	$50.00	$60.00	$810,000.00	$900,000.00	$1,080,000.00
	83	Access/Haul Road Improvements - Soil Excavation	8313	4,500	4,500	9,000	CY	$12.00	$13.00	$14.00	$54,000.00	$58,500.00	$126,000.00
	84	Access/Haul Road Improvements - Rock Excavation	8313	4,500	4,500	9,000	CY	$35.00	$40.00	$45.00	$157,500.00	$180,000.00	$405,000.00
	85	Access/Haul Road Improvements - Soil Backfill	8313	16,000	16,000	30,000	CY	$45.00	$50.00	$55.00	$720,000.00	$800,000.00	$1,650,000.00
	86	Access/Haul Road Improvements - 4" Gravel Surfacing	8313	0	320	320	TON	$80.00	$100.00	$120.00	$0.00	$32,000.00	$38,400.00
	87	County Road Improvements - Asphalt Overlay Repair - Juniper Road	8313	3	3	3	MILE	$35,000.00	$40,000.00	$350,000.00	$105,000.00	$120,000.00	$1,050,000.00
	88	County Road Improvements - Asphalt Overlay Repair - Copco Road	8313	19	19	19	MILE	$35,000.00	$40,000.00	$350,000.00	$665,000.00	$760,000.00	$6,650,000.00
	89	Mallard Cove - Concrete total	BLM	106	106	106	CY	$200.00	$300.00	$400.00	$21,200.00	$31,800.00	$42,400.00
	90	Mallard Cove - 25'x5' Dock made of composite decking and poly floats	BLM	1	1	1	EA	$2,000.00	$2,500.00	$3,000.00	$2,000.00	$2,500.00	$3,000.00
	91	Mallard Cove - 20'x5' Gangway w/ aluminum frame and railings	BLM	1	1	1	EA	$1,500.00	$2,000.00	$2,500.00	$1,500.00	$2,000.00	$2,500.00
	92	Mallard Cove - Signs to be removed and hauled away	BLM	6	6	6	EA	$250.00	$300.00	$350.00	$1,500.00	$1,800.00	$2,100.00
	93	Mallard Cove - Wood plank tables to be removed and hauled away	BLM	8	8	8	EA	$90.00	$100.00	$120.00	$720.00	$800.00	$960.00

BUREAU OF RECLAMATION

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SUMMARY ESTIMATE

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PLANT ACCOUNT	PAY ITEM	DESCRIPTION	CODE	MPL QUANTITY	MP QUANTITY	MPH QUANTITY	UNIT	MPL UNIT PRICE	MP UNIT PRICE	MPH UNIT PRICE	MPL TOTAL	MP TOTAL	MPH TOTAL
	94	Mallard Cove - Parking area to be regraded, ripped, seeded and planted	BLM	2.5	2.5	2.5	ACRES	$20,000.00	$25,000.00	$30,000.00	$50,000.00	$62,500.00	$75,000.00
	95	Copco Cove - Concrete total	BLM	84	84	84	CY	$200.00	$300.00	$400.00	$16,800.00	$25,200.00	$33,600.00
	96	Copco Cove - Dock abutment railing made of 2.5" dia. steel pipe	BLM	25	25	25	LF	$35.00	$40.00	$45.00	$875.00	$1,000.00	$1,125.00
	97	Copco Cove - Signs to be removed and hauled away	BLM	6	6	6	EA	$250.00	$300.00	$350.00	$1,500.00	$1,800.00	$2,100.00
	98	Copco Cove - Wood plank tables to be removed and hauled away	BLM	2	2	2	EA	$90.00	$100.00	$120.00	$180.00	$200.00	$240.00
	99	Copco Cove - Regrade, rip, seed and plant disturbed areas	BLM	2.3	2.3	2.3	ACRES	$20,000.00	$25,000.00	$30,000.00	$46,000.00	$57,500.00	$69,000.00
		Subtotal 1									$21,703,425.00	$25,615,100.00	$45,424,575.00
		Mobilization (MPL ~ 5%; MP ~ 5%; MPH ~ 5%)		1	1	1	ls	$1,100,000.00	$1,300,000.00	$2,300,000.00	$1,100,000.00	$1,300,000.00	$2,300,000.00
		Subtotal 1 w/ mobilization											
		Escalation to Notice to Proceed (NTP)									$0.00	$0.00	$0.00
		NOT INCLUDED											
		Design Contingencies (MPL ~ 8%; MP ~ 10%; MPH ~ 15%)		1	1	1	ls	$2,196,575.00	$3,084,900.00	$7,177,760.00	$2,196,575.00	$3,084,900.00	$7,177,760.00
		APS = Allowance for Procurement		1	1	1	ls	$0.00	$0.00	$1,097,665.00	$0.00	$0.00	$1,097,665.00
		Strategies (if applicable) (MPL ~ 0%; MP ~ 0%; MPH ~ 2%)											
		CONTRACT COST									**$25,000,000.00**	**$30,000,000.00**	**$56,000,000.00**
		Construction Contingencies (MPL ~ 18%; MP ~ 20%; MPH ~ 25%)		1	1	1	ls	$4,000,000.00	$6,000,000.00	$14,000,000.00	$4,000,000.00	$6,000,000.00	$14,000,000.00
		FIELD COST									**$29,000,000.00**	**$36,000,000.00**	**$70,000,000.00**
		Non-Contract Cost (MPL ~ 62%; MP ~ 65%; MPH ~ 71%)		1	1	1	ls	$18,000,000.00	$23,000,000.00	$50,000,000.00	$18,000,000.00	$23,000,000.00	$50,000,000.00
		CONSTRUCTION COST									**$47,000,000.00**	**$59,000,000.00**	**$120,000,000.00**

Notes: This estimate does not include non-contract costs and should not be used for funding purposes.
Reference documents RM D&S Cost Estimate (FAC 09-01) and RM D&S CCE and PCE (FAC 09-02)

QUANTITIES			PRICES		
BY	See Group Worksheets	CHECKED: See Group Worksheets	BY	Craig Grush, P.E.	CHECKED
DATE PREPARED	1/20/2011	PEER REVIEW: See Group Worksheets	DATE PREPARED	06/02/11	PEER REVIEW

06-02-11
6/3/11

Crystal Ball Report - Full
Simulation started on 6/8/2011 at 11:54:02
Simulation stopped on 6/8/2011 at 11:54:44

Run preferences:	
Number of trials run	10,000
Monte Carlo	
Seed	999
Precision control on	
Confidence level	95.00%
Run statistics:	
Total running time (sec)	41.17
Trials/second (average)	243
Random numbers per sec	28,663
Crystal Ball data:	
Assumptions	118
Correlations	0
Correlated groups	0
Decision variables	0
Forecasts	3

TECHNICAL SERVICE CENTER
ESTIMATING, SPECIFICATIONS
AND VALUE PROGRAM GROUP
UNIT PRICES BY Craig A. Grusy
DATE 6/8/2011

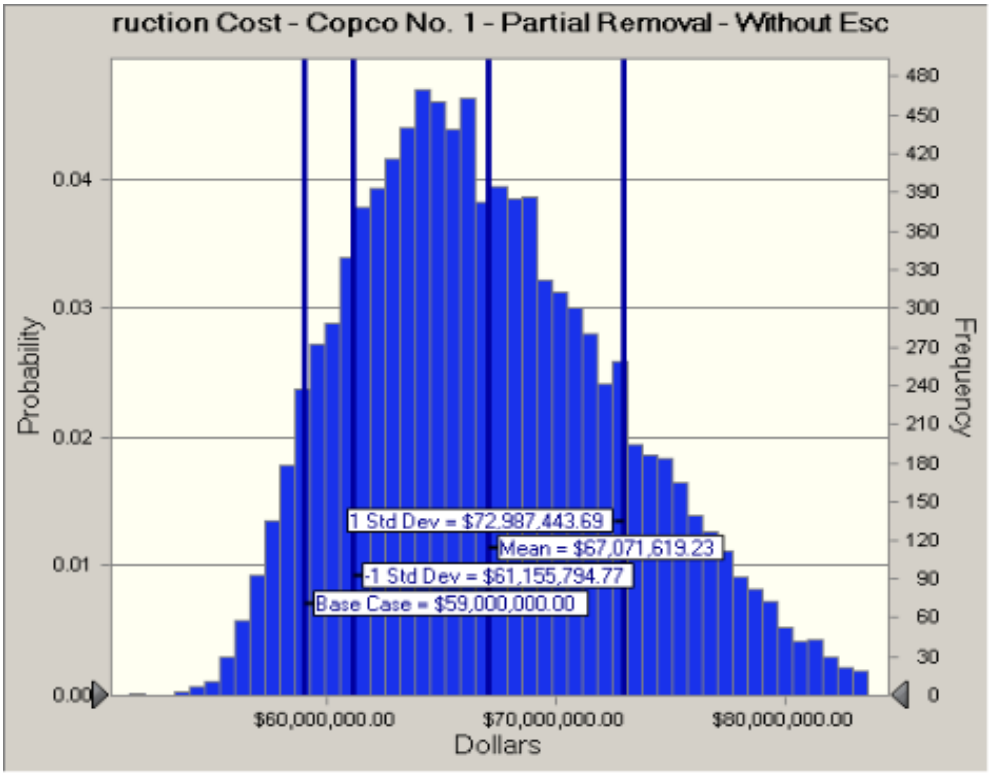
DATE	PEER REVIEWER(S)	CODE
6/9/11	Signature DAN MAY Printed Name	8170
	Signature Printed Name	
Author Initials	PEER REVIEW NOT REQUIRED	

Forecasts

Worksheet: [Copco 1 - Partial Removal Crystal Ball - without Escalation - 2011-04.xls]Copco 1

Forecast: Construction Cost - Copco No. 1 - Partial Removal - Without Escalation Cell: U129

Summary:
Entire range is from $51,342,861.93 to $90,638,468.04
Base case is $59,000,000.00
After 10,000 trials, the std. error of the mean is $59,158.24



Forecast: Construction Cost - Copco No. 1 - Partial Removal - Without Escalation (cont'd) **Cell: U129**

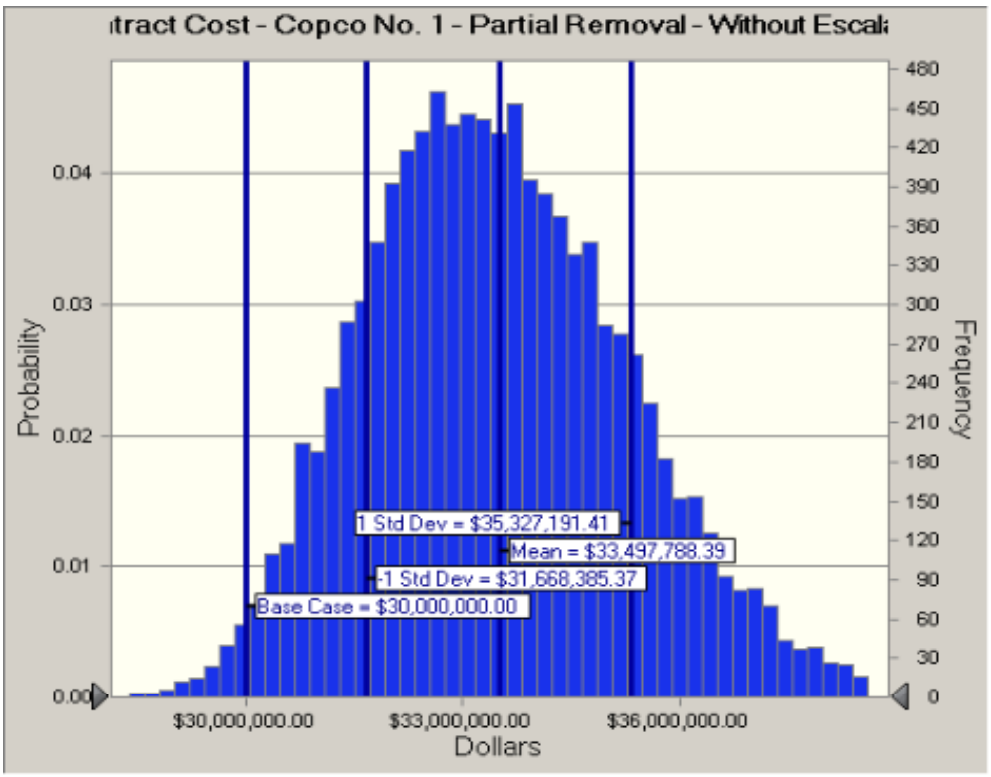
Statistics:	Forecast values
Trials	10,000
Mean	$67,071,619.23
Median	$66,341,698.50
Mode	---
Standard Deviation	$5,915,824.46
Variance	$34,996,979,085,265.10
Skewness	0.5224
Kurtosis	2.95
Coeff. of Variability	0.0882
Minimum	$51,342,861.93
Maximum	$90,638,468.04
Range Width	$39,295,606.11
Mean Std. Error	$59,158.24

Percentiles:	Forecast values
0%	$51,342,861.93
10%	$59,864,919.45
20%	$61,841,766.75
30%	$63,442,111.71
40%	$64,887,834.65
50%	$66,339,421.44
60%	$68,022,724.21
70%	$69,825,928.90
80%	$72,117,139.42
90%	$75,317,490.46
100%	$90,638,468.04

Forecast: Contract Cost - Copco No. 1 - Partial Removal - Without Escalation **Cell: U125**

Summary:

Entire range is from $28,189,145.50 to $40,757,494.90
Base case is $30,000,000.00
After 10,000 trials, the std. error of the mean is $18,294.03



Forecast: Contract Cost - Copco No. 1 - Partial Removal - Without Escalation (cont'd) Cell: U125

Statistics:	Forecast values
Trials	10,000
Mean	$33,497,788.39
Median	$33,374,726.65
Mode	---
Standard Deviation	$1,829,403.02
Variance	$3,346,715,407,656.47
Skewness	0.3606
Kurtosis	3.02
Coeff. of Variability	0.0546
Minimum	$28,189,145.50
Maximum	$40,757,494.90
Range Width	$12,568,349.40
Mean Std. Error	$18,294.03

Percentiles:	Forecast values
0%	$28,189,145.50
10%	$31,245,112.94
20%	$31,920,140.66
30%	$32,436,587.32
40%	$32,902,335.45
50%	$33,374,635.79
60%	$33,853,099.97
70%	$34,395,434.23
80%	$35,034,582.01
90%	$35,911,319.76
100%	$40,757,494.90

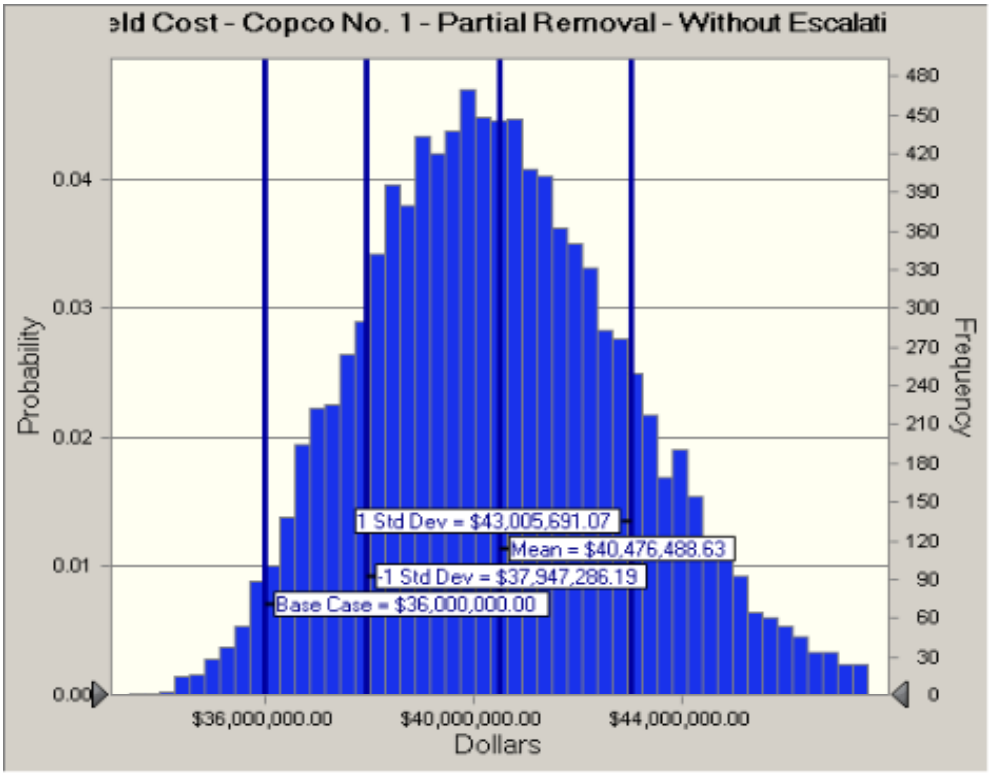
Forecast: Field Cost - Copco No. 1 - Partial Removal - Without Escalation **Cell: U127**

Summary:

Entire range is from $32,994,863.44 to $50,620,368.46

Base case is $36,000,000.00

After 10,000 trials, the std. error of the mean is $25,292.02



Forecast: Field Cost - Copco No. 1 - Partial Removal - Without Escalation (cont'd) Cell: U127

Statistics:	Forecast values
Trials	10,000
Mean	$40,476,488.63
Median	$40,322,462.90
Mode	---
Standard Deviation	$2,529,202.44
Variance	$6,396,864,996,901.06
Skewness	0.3286
Kurtosis	2.94
Coeff. of Variability	0.0625
Minimum	$32,994,863.44
Maximum	$50,620,368.46
Range Width	$17,625,505.02
Mean Std. Error	$25,292.02

Percentiles:	Forecast values
0%	$32,994,863.44
10%	$37,275,871.90
20%	$38,286,050.95
30%	$39,019,073.79
40%	$39,689,837.01
50%	$40,322,127.12
60%	$40,978,921.88
70%	$41,709,018.12
80%	$42,611,949.03
90%	$43,868,343.10
100%	$50,620,368.46

End of Forecasts

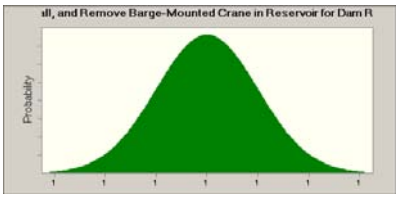
Assumptions

Worksheet: [Copco 1 - Partial Removal Crystal Ball - without Escalation - 2011-04.xls]Copco 1

Assumption: 1 Furnish, Install, and Remove Barge-Mounted Crane in Reservoir for Dam R **Cell: L14**

Normal distribution with parameters:

Mean	1	(=L14)
Std. Dev.	0	(=0.000001)



Assumption: 1 Furnish, Install, and Remove Barge-Mounted Crane in Reservoir for Dam R **Cell: R14**

BetaPERT distribution with parameters:

Minimum	$340,000.00	(=Q14)
Likeliest	$350,000.00	(=R14)
Maximum	$370,000.00	(=S14)

Assumption: 10 Remove Concrete Dam down to Elev. 2476 Quantity **Cell: L23**

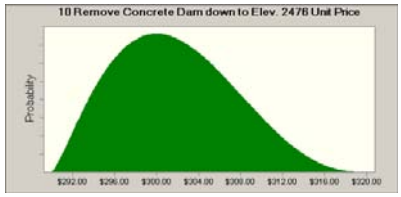
Normal distribution with parameters:

Mean	36,000	(=L23)
Std. Dev.	0	(=0.000001)

Assumption: 10 Remove Concrete Dam down to Elev. 2476 Unit Price **Cell: R23**

BetaPERT distribution with parameters:

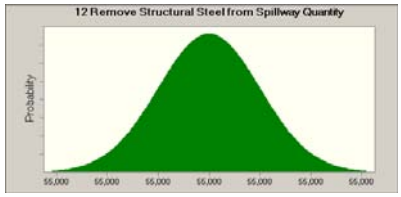
Minimum	$290.00	(=Q23)
Likeliest	$300.00	(=R23)
Maximum	$320.00	(=S23)



Assumption: 12 Remove Structural Steel from Spillway Quantity **Cell: L25**

Normal distribution with parameters:

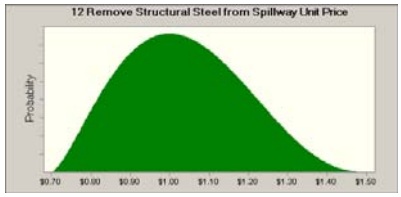
Mean	55,000	(=L25)
Std. Dev.	0	(=0.000001)



Assumption: 12 Remove Structural Steel from Spillway Unit Price **Cell: R25**

BetaPERT distribution with parameters:

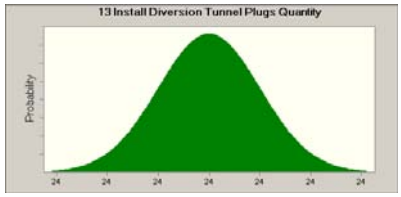
Minimum	$0.70	(=Q25)
Likeliest	$1.00	(=R25)
Maximum	$1.50	(=S25)



Assumption: 13 Install Diversion Tunnel Plugs Quantity **Cell: L26**

Normal distribution with parameters:

Mean	24	(=L26)
Std. Dev.	0	(=0.000001)



Assumption: 13 Install Diversion Tunnel Plugs Unit Price **Cell: R26**

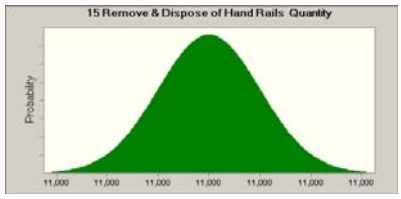
BetaPERT distribution with parameters:

Minimum	$1,100.00	(=Q26)
Likeliest	$1,200.00	(=R26)
Maximum	$1,300.00	(=S26)

Assumption: 15 Remove & Dispose of Hand Rails Quantity **Cell: L28**

Normal distribution with parameters:

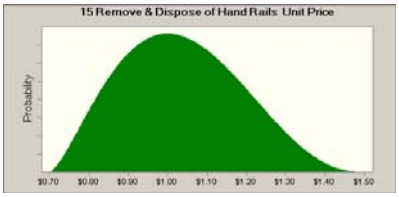
Mean	11,000	(=L28)
Std. Dev.	0	(=0.000001)



Assumption: 15 Remove & Dispose of Hand Rails Unit Price **Cell: R28**

BetaPERT distribution with parameters:

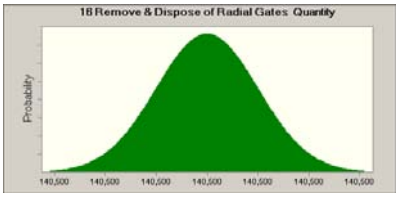
Minimum	$0.70	(=Q28)
Likeliest	$1.00	(=R28)
Maximum	$1.50	(=S28)



Assumption: 16 Remove & Dispose of Radial Gates Quantity **Cell: L29**

Normal distribution with parameters:

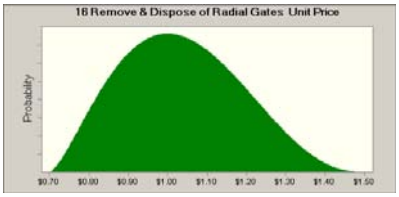
Mean	140,500	(=L29)
Std. Dev.	0	(=0.000001)



Assumption: 16 Remove & Dispose of Radial Gates Unit Price **Cell: R29**

BetaPERT distribution with parameters:

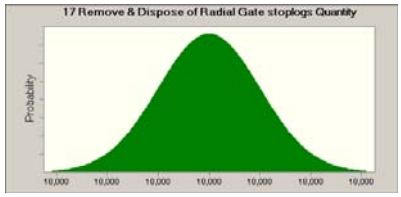
Minimum	$0.70	(=Q29)
Likeliest	$1.00	(=R29)
Maximum	$1.50	(=S29)



Assumption: 17 Remove & Dispose of Radial Gate stoplogs Quantity **Cell: L30**

Normal distribution with parameters:

Mean	18,000	(=L30)
Std. Dev.	0	(=0.000001)



Assumption: 17 Remove & Dispose of Radial Gate stoplogs Unit Price **Cell: R30**

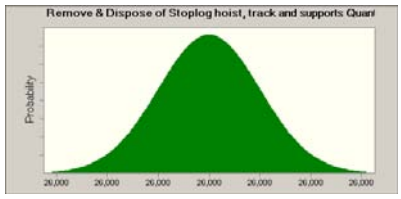
BetaPERT distribution with parameters:

Minimum	$0.70	(=Q30)
Likeliest	$1.00	(=R30)
Maximum	$1.50	(=S30)

Assumption: 18 Remove & Dispose of Stoplog hoist, track and supports Quantity **Cell: L31**

Normal distribution with parameters:

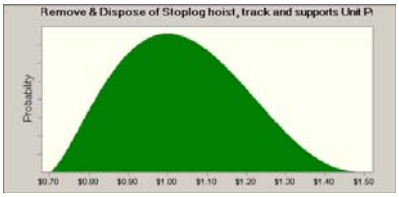
Mean	26,000	(=L31)
Std. Dev.	0	(=0.000001)



Assumption: 18 Remove & Dispose of Stoplog hoist, track and supports Unit Price **Cell: R31**

BetaPERT distribution with parameters:

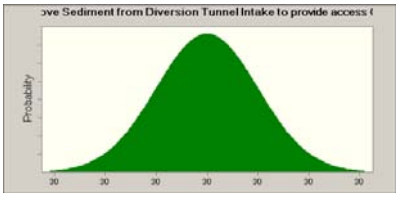
Minimum	$0.70	(=Q31)
Likeliest	$1.00	(=R31)
Maximum	$1.50	(=S31)



Assumption: 2 Remove Sediment from Diversion Tunnel Intake to provide access Quantity **Cell: L15**

Normal distribution with parameters:

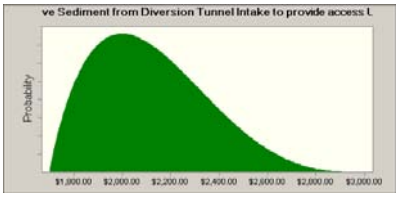
Mean	30	(=L15)
Std. Dev.	0	(=0.000001)



Assumption: 2 Remove Sediment from Diversion Tunnel Intake to provide access Unit Price **Cell: R15**

BetaPERT distribution with parameters:

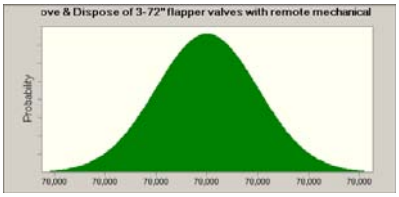
Minimum	$1,700.00	(=Q15)
Likeliest	$2,000.00	(=R15)
Maximum	$3,000.00	(=S15)



Assumption: 21 Remove & Dispose of 3-72" flapper valves with remote mechanical Quantity Cell: L34

Normal distribution with parameters:

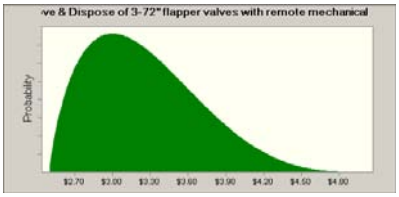
Mean	78,000	(=L34)
Std. Dev.	0	(=0.000001)



Assumption: 21 Remove & Dispose of 3-72" flapper valves with remote mechanical Unit: Cell: R34

BetaPERT distribution with parameters:

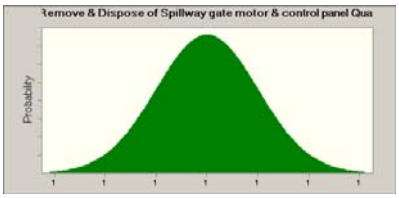
Minimum	$2.50	(=Q34)
Likeliest	$3.00	(=R34)
Maximum	$5.00	(=S34)



Assumption: 22 Remove & Dispose of Spillway gate motor & control panel Quantity Cell: L35

Normal distribution with parameters:

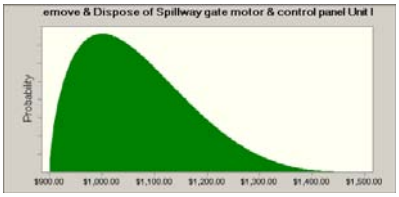
Mean	1	(=L35)
Std. Dev.	0	(=0.000001)



Assumption: 22 Remove & Dispose of Spillway gate motor & control panel Unit Price **Cell: R35**

BetaPERT distribution with parameters:

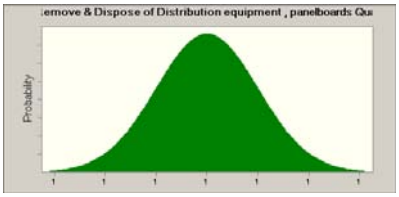
Minimum	$900.00	(=Q35)
Likeliest	$1,000.00	(=R35)
Maximum	$1,500.00	(=S35)



Assumption: 23 Remove & Dispose of Distribution equipment , panelboards Quantity **Cell: L36**

Normal distribution with parameters:

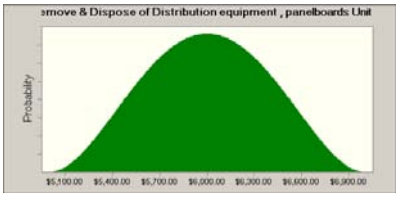
Mean	1	(=L36)
Std. Dev.	0	(=0.000001)



Assumption: 23 Remove & Dispose of Distribution equipment , panelboards Unit Price **Cell: R36**

BetaPERT distribution with parameters:

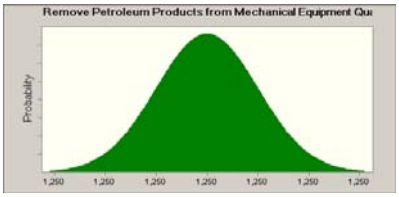
Minimum	$5,000.00	(=Q36)
Likeliest	$6,000.00	(=R36)
Maximum	$7,000.00	(=S36)



Assumption: 35A Remove Petroleum Products from Mechanical Equipment Quantity **Cell: L49**

Normal distribution with parameters:

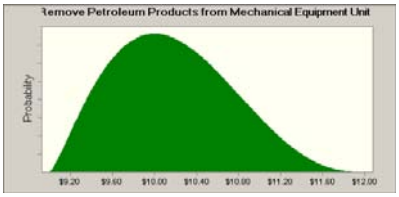
Mean	1,250	(=L49)
Std. Dev.	0	(=0.000001)



Assumption: 35A Remove Petroleum Products from Mechanical Equipment Unit Price **Cell: R49**

BetaPERT distribution with parameters:

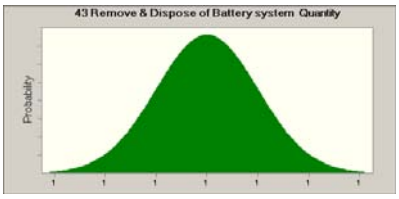
Minimum	$9.00	(=Q49)
Likeliest	$10.00	(=R49)
Maximum	$12.00	(=S49)



Assumption: 43 Remove & Dispose of Battery system Quantity **Cell: L57**

Normal distribution with parameters:

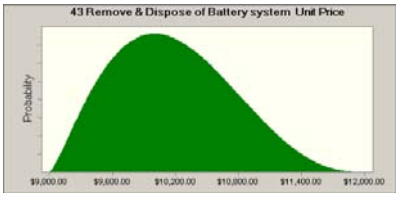
Mean	1	(=L57)
Std. Dev.	0	(=0.000001)



Assumption: 43 Remove & Dispose of Battery system Unit Price **Cell: R57**

BetaPERT distribution with parameters:

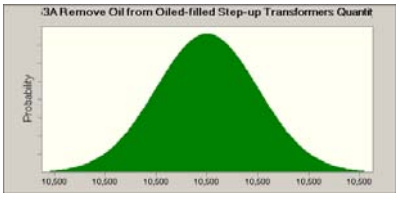
Minimum	$9,000.00	(=Q57)
Likeliest	$10,000.00	(=R57)
Maximum	$12,000.00	(=S57)



Assumption: 53A Remove Oil from Oiled-filled Step-up Transformers Quantity **Cell: L68**

Normal distribution with parameters:

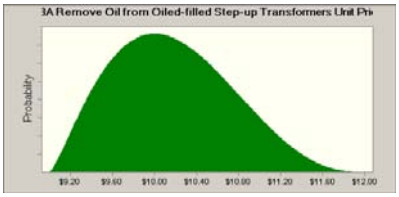
Mean	10,500	(=L68)
Std. Dev.	0	(=0.000001)



Assumption: 53A Remove Oil from Oiled-filled Step-up Transformers Unit Price **Cell: R68**

BetaPERT distribution with parameters:

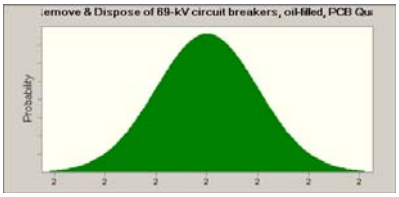
Minimum	$9.00	(=Q68)
Likeliest	$10.00	(=R68)
Maximum	$12.00	(=S68)



Assumption: 54 Remove & Dispose of 69-kV circuit breakers, oil-filled, PCB QuantityCell: L69

Normal distribution with parameters:

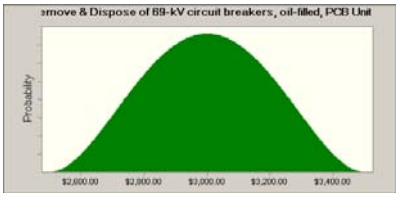
Mean	2	(=L69)
Std. Dev.	0	(=0.000001)



Assumption: 54 Remove & Dispose of 69-kV circuit breakers, oil-filled, PCB Unit PricCell: R69

BetaPERT distribution with parameters:

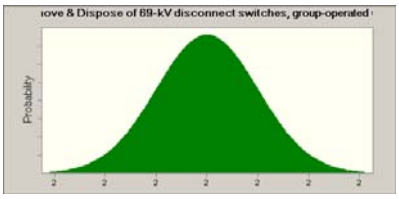
Minimum	$2,500.00	(=Q69)
Likeliest	$3,000.00	(=R69)
Maximum	$3,500.00	(=S69)



Assumption: 55 Remove & Dispose of 69-kV disconnect switches, group-operated QCell: L70

Normal distribution with parameters:

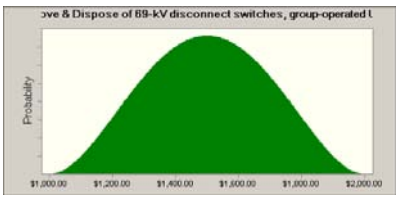
Mean	2	(=L70)
Std. Dev.	0	(=0.000001)



Assumption: 55 Remove & Dispose of 69-kV disconnect switches, group-operated Unit Price **Cell: R70**

BetaPERT distribution with parameters:

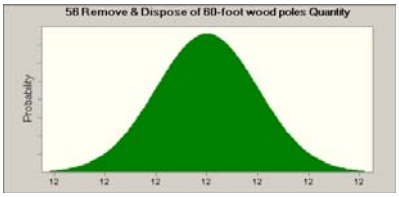
Minimum	$1,000.00	(=Q70)
Likeliest	$1,500.00	(=R70)
Maximum	$2,000.00	(=S70)



Assumption: 56 Remove & Dispose of 60-foot wood poles Quantity **Cell: L71**

Normal distribution with parameters:

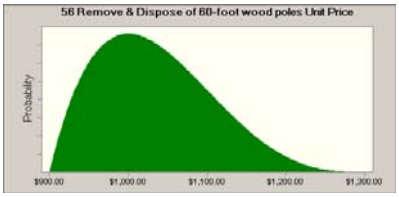
Mean	12	(=L71)
Std. Dev.	0	(=0.000001)



Assumption: 56 Remove & Dispose of 60-foot wood poles Unit Price **Cell: R71**

BetaPERT distribution with parameters:

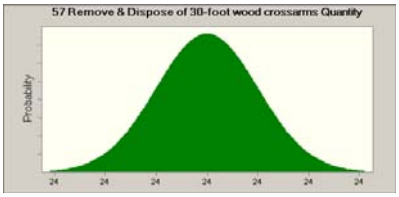
Minimum	$900.00	(=Q71)
Likeliest	$1,000.00	(=R71)
Maximum	$1,300.00	(=S71)



Assumption: 57 Remove & Dispose of 30-foot wood crossarms Quantity **Cell: L72**

Normal distribution with parameters:

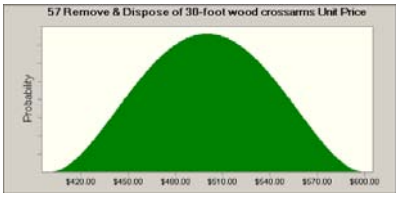
Mean	24	(=L72)
Std. Dev.	0	(=0.000001)



Assumption: 57 Remove & Dispose of 30-foot wood crossarms Unit Price **Cell: R72**

BetaPERT distribution with parameters:

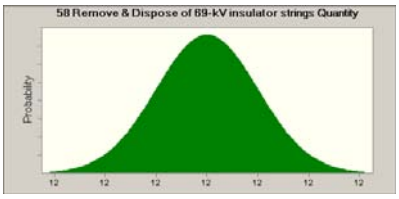
Minimum	$400.00	(=Q72)
Likeliest	$500.00	(=R72)
Maximum	$600.00	(=S72)



Assumption: 58 Remove & Dispose of 69-kV insulator strings Quantity **Cell: L73**

Normal distribution with parameters:

Mean	12	(=L73)
Std. Dev.	0	(=0.000001)



Assumption: 58 Remove & Dispose of 69-kV insulator strings Unit Price **Cell: R73**

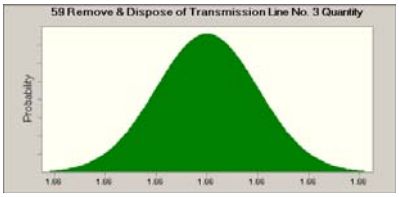
BetaPERT distribution with parameters:

Minimum	$300.00	(=Q73)
Likeliest	$400.00	(=R73)
Maximum	$500.00	(=S73)

Assumption: 59 Remove & Dispose of Transmission Line No. 3 Quantity **Cell: L74**

Normal distribution with parameters:

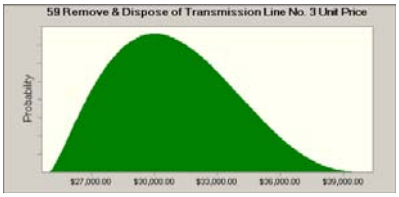
Mean	1.66	(=L74)
Std. Dev.	0.00	(=0.000001)



Assumption: 59 Remove & Dispose of Transmission Line No. 3 Unit Price **Cell: R74**

BetaPERT distribution with parameters:

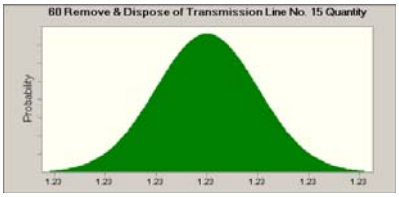
Minimum	$25,000.00	(=Q74)
Likeliest	$30,000.00	(=R74)
Maximum	$40,000.00	(=S74)



Assumption: 60 Remove & Dispose of Transmission Line No. 15 Quantity **Cell: L75**

Normal distribution with parameters:

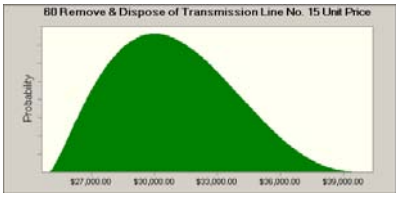
Mean	1.23	(=L75)
Std. Dev.	0.00	(=0.000001)



Assumption: 60 Remove & Dispose of Transmission Line No. 15 Unit Price **Cell: R75**

BetaPERT distribution with parameters:

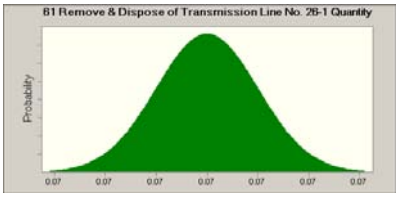
Minimum	$25,000.00	(=Q75)
Likeliest	$30,000.00	(=R75)
Maximum	$40,000.00	(=S75)



Assumption: 61 Remove & Dispose of Transmission Line No. 26-1 Quantity **Cell: L76**

Normal distribution with parameters:

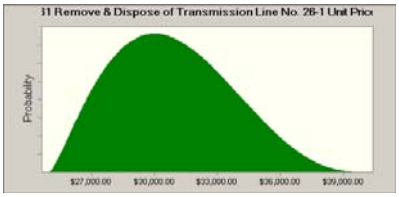
Mean	0.07	(=L76)
Std. Dev.	0.00	(=0.000001)



Assumption: 61 Remove & Dispose of Transmission Line No. 26-1 Unit Price **Cell: R76**

BetaPERT distribution with parameters:

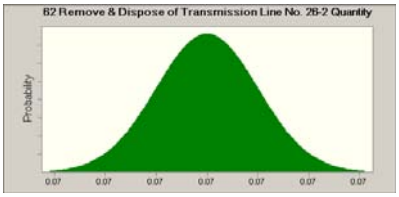
Minimum	$25,000.00	(=Q76)
Likeliest	$30,000.00	(=R76)
Maximum	$40,000.00	(=S76)



Assumption: 62 Remove & Dispose of Transmission Line No. 26-2 Quantity **Cell: L77**

Normal distribution with parameters:

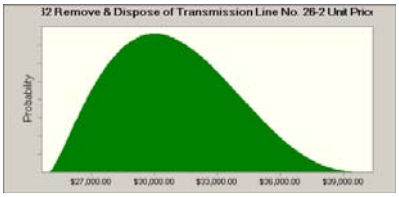
Mean	0.07	(=L77)
Std. Dev.	0.00	(=0.000001)



Assumption: 62 Remove & Dispose of Transmission Line No. 26-2 Unit Price **Cell: R77**

BetaPERT distribution with parameters:

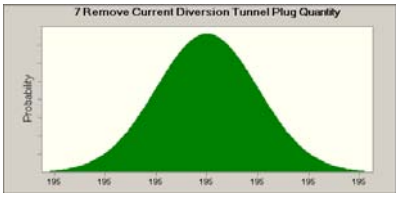
Minimum	$25,000.00	(=Q77)
Likeliest	$30,000.00	(=R77)
Maximum	$40,000.00	(=S77)



Assumption: 7 Remove Current Diversion Tunnel Plug Quantity **Cell: L20**

Normal distribution with parameters:

Mean	195	(=L20)
Std. Dev.	0	(=0.000001)



Assumption: 7 Remove Current Diversion Tunnel Plug Unit Price **Cell: R20**

BetaPERT distribution with parameters:

Minimum	$1,400.00	(=Q20)
Likeliest	$1,500.00	(=R20)
Maximum	$1,800.00	(=S20)

Assumption: 72 Temporary Access Roads Quantity **Cell: L87**

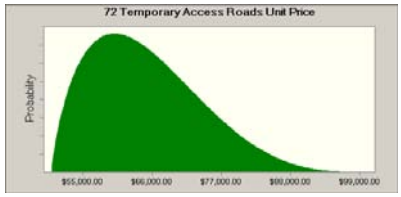
Normal distribution with parameters:

Mean	7	(=L87)
Std. Dev.	0	(=0.000001)

Assumption: 72 Temporary Access Roads Unit Price **Cell: R87**

BetaPERT distribution with parameters:

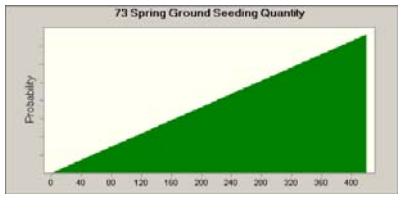
Minimum	$50,000.00	(=R87)
Likeliest	$60,000.00	(=Q87)
Maximum	$100,000.00	(=S87)



Assumption: 73 Spring Ground Seeding Quantity **Cell: L88**

Triangular distribution with parameters:

Minimum	0	(=M88)
Likeliest	420	(=L88)
Maximum	420	(=K88)



Assumption: 73 Spring Ground Seeding Unit Price **Cell: R88**

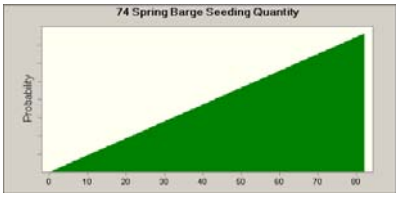
BetaPERT distribution with parameters:

Minimum	$3,000.00	(=Q88)
Likeliest	$3,500.00	(=R88)
Maximum	$4,000.00	(=S88)

Assumption: 74 Spring Barge Seeding Quantity **Cell: L89**

Triangular distribution with parameters:

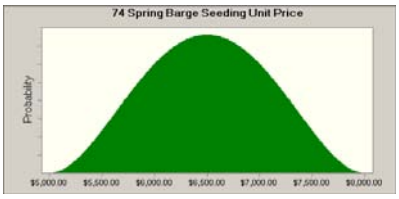
Minimum	0	(=M89)
Likeliest	82	(=L89)
Maximum	82	(=K89)



Assumption: 74 Spring Barge Seeding Unit Price **Cell: R89**

BetaPERT distribution with parameters:

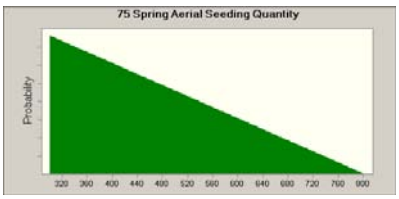
Minimum	$5,000.00	(=Q89)
Likeliest	$6,500.00	(=R89)
Maximum	$8,000.00	(=S89)



Assumption: 75 Spring Aerial Seeding Quantity **Cell: L90**

Triangular distribution with parameters:

Minimum	300	(=K90)
Likeliest	300	(=L90)
Maximum	802	(=M90)



Assumption: 75 Spring Aerial Seeding Unit Price **Cell: R90**

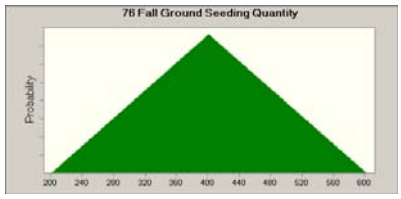
BetaPERT distribution with parameters:

Minimum	$6,500.00	(=Q90)
Likeliest	$7,500.00	(=R90)
Maximum	$15,000.00	(=S90)

Assumption: 76 Fall Ground Seeding Quantity **Cell: L91**

Triangular distribution with parameters:

Minimum	201	(=K91)
Likeliest	401	(=L91)
Maximum	602	(=M91)



Assumption: 76 Fall Ground Seeding Unit Price **Cell: R91**

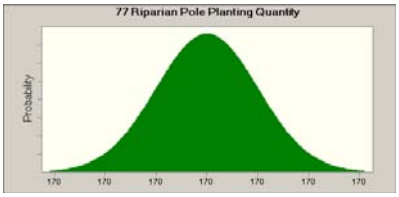
BetaPERT distribution with parameters:

Minimum	$3,000.00	(=Q91)
Likeliest	$3,500.00	(=R91)
Maximum	$4,000.00	(=S91)

Assumption: 77 Riparian Pole Planting Quantity **Cell: L92**

Normal distribution with parameters:

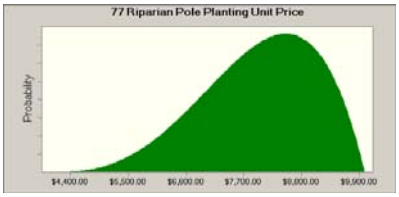
Mean	170	(=L92)
Std. Dev.	0	(=0.000001)



Assumption: 77 Riparian Pole Planting Unit Price **Cell: R92**

BetaPERT distribution with parameters:

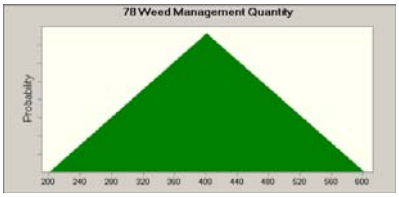
Minimum	$4,000.00	(=Q92)
Likeliest	$8,500.00	(=R92)
Maximum	$10,000.00	(=S92)



Assumption: 78 Weed Management Quantity **Cell: L93**

Triangular distribution with parameters:

Minimum	201	(=K93)
Likeliest	401	(=L93)
Maximum	602	(=M93)



Assumption: 78 Weed Management Unit Price **Cell: R93**

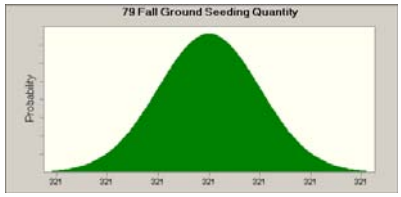
BetaPERT distribution with parameters:

Minimum	$1,000.00	(=Q93)
Likeliest	$1,500.00	(=R93)
Maximum	$2,000.00	(=S93)

Assumption: 79 Fall Ground Seeding Quantity **Cell: L94**

Normal distribution with parameters:

Mean	321	(=L94)
Std. Dev.	0	(=0.000001)



Assumption: 79 Fall Ground Seeding Unit Price **Cell: R94**

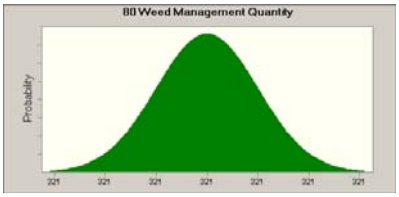
BetaPERT distribution with parameters:

Minimum	$3,000.00	(=Q94)
Likeliest	$3,500.00	(=R94)
Maximum	$4,000.00	(=S94)

Assumption: 80 Weed Management Quantity **Cell: L95**

Normal distribution with parameters:

Mean	321	(=L95)
Std. Dev.	0	(=0.000001)



Assumption: 80 Weed Management Unit Price **Cell: R95**

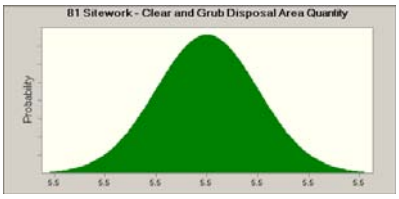
BetaPERT distribution with parameters:

Minimum	$1,000.00	(=Q95)
Likeliest	$1,500.00	(=R95)
Maximum	$2,000.00	(=S95)

Assumption: 81 Sitework - Clear and Grub Disposal Area Quantity **Cell: L96**

Normal distribution with parameters:

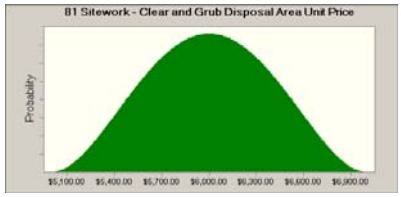
Mean	5.5	(=L96)
Std. Dev.	0.0	(=0.000001)



Assumption: 81 Sitework - Clear and Grub Disposal Area Unit Price **Cell: R96**

BetaPERT distribution with parameters:

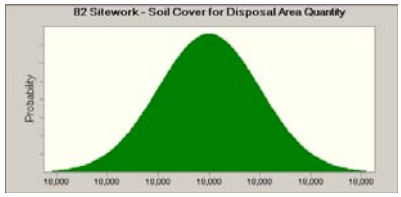
Minimum	$5,000.00	(=Q96)
Likeliest	$6,000.00	(=R96)
Maximum	$7,000.00	(=S96)



Assumption: 82 Sitework - Soil Cover for Disposal Area Quantity **Cell: L97**

Normal distribution with parameters:

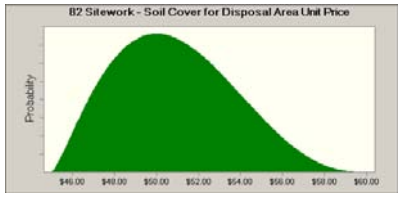
Mean	18,000	(=L97)
Std. Dev.	0	(=0.000001)



Assumption: 82 Sitework - Soil Cover for Disposal Area Unit Price **Cell: R97**

BetaPERT distribution with parameters:

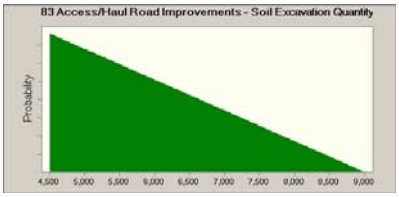
Minimum	$45.00	(=Q97)
Likeliest	$50.00	(=R97)
Maximum	$60.00	(=S97)



Assumption: 83 Access/Haul Road Improvements - Soil Excavation Quantity **Cell: L98**

Triangular distribution with parameters:

Minimum	4,500	(=K98)
Likeliest	4,500	(=L98)
Maximum	9,000	(=M98)



Assumption: 83 Access/Haul Road Improvements - Soil Excavation Unit Price **Cell: R98**

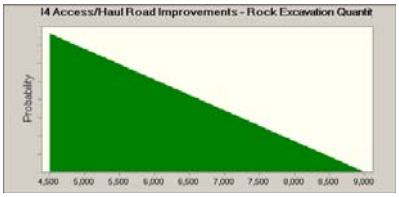
BetaPERT distribution with parameters:

Minimum	$12.00	(=Q98)
Likeliest	$13.00	(=R98)
Maximum	$14.00	(=S98)

Assumption: 84 Access/Haul Road Improvements - Rock Excavation Quantity **Cell: L99**

Triangular distribution with parameters:

Minimum	4,500	(=K99)
Likeliest	4,500	(=L99)
Maximum	9,000	(=M99)



Assumption: 84 Access/Haul Road Improvements - Rock Excavation Unit Price **Cell: R99**

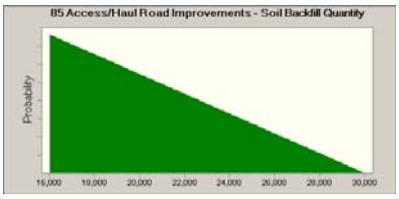
BetaPERT distribution with parameters:

Minimum	$35.00	(=Q99)
Likeliest	$40.00	(=R99)
Maximum	$45.00	(=S99)

Assumption: 85 Access/Haul Road Improvements - Soil Backfill Quantity **Cell: L100**

Triangular distribution with parameters:

Minimum	16,000	(=K100)
Likeliest	16,000	(=L100)
Maximum	30,000	(=M100)



Assumption: 85 Access/Haul Road Improvements - Soil Backfill Unit Price **Cell: R100**

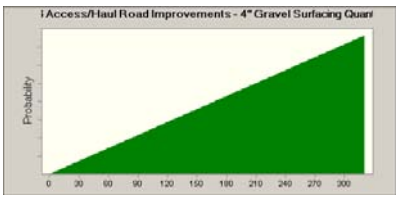
BetaPERT distribution with parameters:

Minimum	$45.00	(=Q100)
Likeliest	$50.00	(=R100)
Maximum	$55.00	(=S100)

Assumption: 86 Access/Haul Road Improvements - 4" Gravel Surfacing Quantity **Cell: L101**

Triangular distribution with parameters:

Minimum	0	(=K101)
Likeliest	320	(=L101)
Maximum	320	(=M101)



Assumption: 86 Access/Haul Road Improvements - 4" Gravel Surfacing Unit Price **Cell: R101**

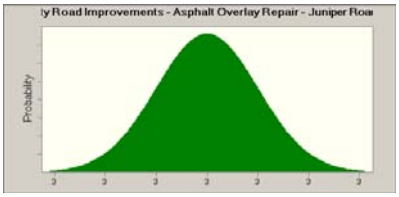
BetaPERT distribution with parameters:

Minimum	$80.00	(=Q101)
Likeliest	$100.00	(=R101)
Maximum	$120.00	(=S101)

Assumption: 87 County Road Improvements - Asphalt Overlay Repair - Juniper Road Qua **Cell: L102**

Normal distribution with parameters:

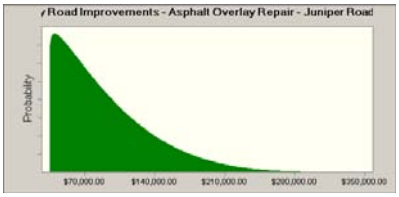
Mean	3	(=L102)
Std. Dev.	0	(=0.000001)



Assumption: 87 County Road Improvements - Asphalt Overlay Repair - Juniper Road **CellUnit R102**

BetaPERT distribution with parameters:

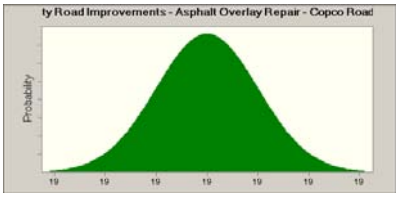
Minimum	$35,000.00	(=Q102)
Likeliest	$40,000.00	(=R102)
Maximum	$350,000.00	(=S102)



Assumption: 88 County Road Improvements - Asphalt Overlay Repair - Copco Road **CellUnit L103**

Normal distribution with parameters:

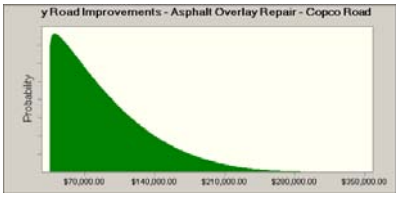
Mean	19	(=L103)
Std. Dev.	0	(=0.000001)



Assumption: 88 County Road Improvements - Asphalt Overlay Repair - Copco Road **CellUnit R103**

BetaPERT distribution with parameters:

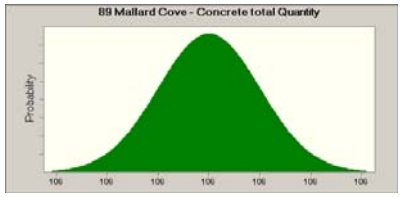
Minimum	$35,000.00	(=Q103)
Likeliest	$40,000.00	(=R103)
Maximum	$350,000.00	(=S103)



Assumption: 89 Mallard Cove - Concrete total Quantity **Cell: L104**

Normal distribution with parameters:

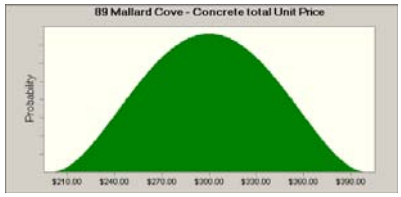
Mean	106	(=L104)
Std. Dev.	0	(=0.000001)



Assumption: 89 Mallard Cove - Concrete total Unit Price **Cell: R104**

BetaPERT distribution with parameters:

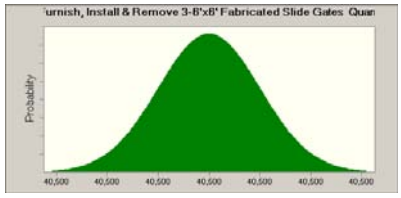
Minimum	$200.00	(=Q104)
Likeliest	$300.00	(=R104)
Maximum	$400.00	(=S104)



Assumption: 9 Furnish, Install & Remove 3-6'x6' Fabricated Slide Gates Quantity **Cell: L22**

Normal distribution with parameters:

Mean	40,500	(=L22)
Std. Dev.	0	(=0.000001)



Assumption: 9 Furnish, Install & Remove 3-6'x6' Fabricated Slide Gates Unit Price Cell: R22

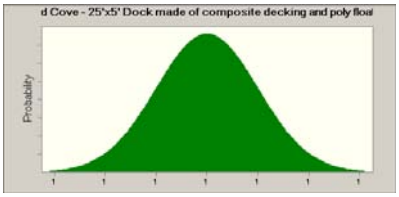
BetaPERT distribution with parameters:

Minimum	$12.00	(=Q22)
Likeliest	$15.00	(=R22)
Maximum	$18.00	(=S22)

Assumption: 90 Mallard Cove - 25'x5' Dock made of composite decking and poly floats Qu Cell: L105

Normal distribution with parameters:

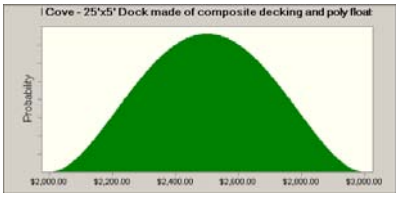
Mean	1	(=L105)
Std. Dev.	0	(=0.000001)



Assumption: 90 Mallard Cove - 25'x5' Dock made of composite decking and poly floats Un Cell: R105

BetaPERT distribution with parameters:

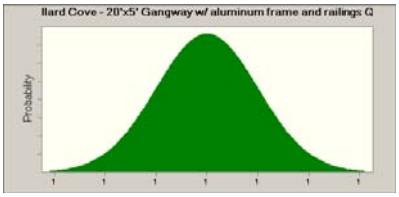
Minimum	$2,000.00	(=Q105)
Likeliest	$2,500.00	(=R105)
Maximum	$3,000.00	(=S105)



Assumption: 91 Mallard Cove - 20'x5' Gangway w/ aluminum frame and railings Quantity **Cell: L106**

Normal distribution with parameters:

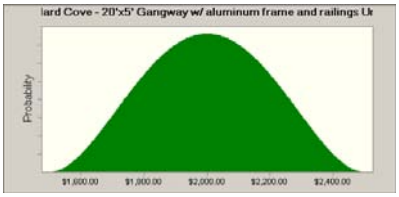
Mean	1	(=L106)
Std. Dev.	0	(=0.000001)



Assumption: 91 Mallard Cove - 20'x5' Gangway w/ aluminum frame and railings Unit Price **Cell: R106**

BetaPERT distribution with parameters:

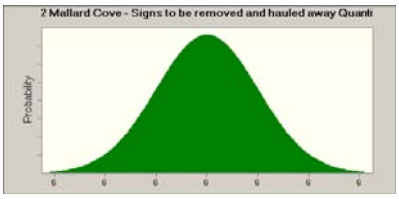
Minimum	$1,500.00	(=Q106)
Likeliest	$2,000.00	(=R106)
Maximum	$2,500.00	(=S106)



Assumption: 92 Mallard Cove - Signs to be removed and hauled away Quantity **Cell: L107**

Normal distribution with parameters:

Mean	6	(=L107)
Std. Dev.	0	(=0.000001)



Assumption: 92 Mallard Cove - Signs to be removed and hauled away Unit Price **Cell: R107**

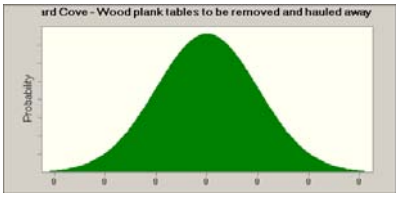
BetaPERT distribution with parameters:

Minimum	$250.00	(=Q107)
Likeliest	$300.00	(=R107)
Maximum	$350.00	(=S107)

Assumption: 93 Mallard Cove - Wood plank tables to be removed and hauled away Quantity **Cell: L108**

Normal distribution with parameters:

Mean	8	(=L108)
Std. Dev.	0	(=0.000001)



Assumption: 93 Mallard Cove - Wood plank tables to be removed and hauled away Unit Pri **Cell: R108**

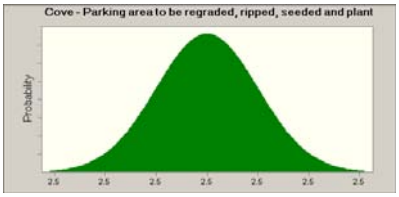
BetaPERT distribution with parameters:

Minimum	$90.00	(=Q108)
Likeliest	$100.00	(=R108)
Maximum	$120.00	(=S108)

Assumption: 94 Mallard Cove - Parking area to be regraded, ripped, seeded and plant **Cell: Q109**

Normal distribution with parameters:

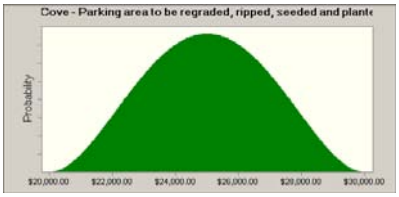
Mean	2.5	(=L109)
Std. Dev.	0.0	(=0.000001)



Assumption: 94 Mallard Cove - Parking area to be regraded, ripped, seeded and plant **Cell: R109**

BetaPERT distribution with parameters:

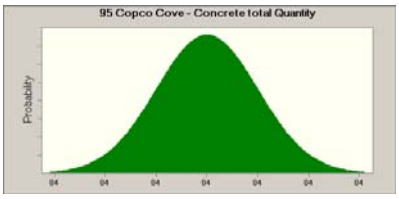
Minimum	$20,000.00	(=Q109)
Likeliest	$25,000.00	(=R109)
Maximum	$30,000.00	(=S109)



Assumption: 95 Copco Cove - Concrete total Quantity **Cell: L110**

Normal distribution with parameters:

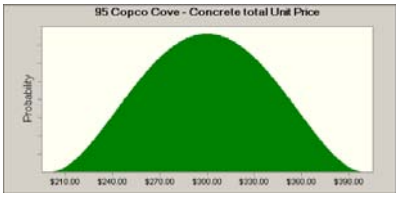
Mean	84	(=L110)
Std. Dev.	0	(=0.000001)



Assumption: 95 Copco Cove - Concrete total Unit Price **Cell: R110**

BetaPERT distribution with parameters:

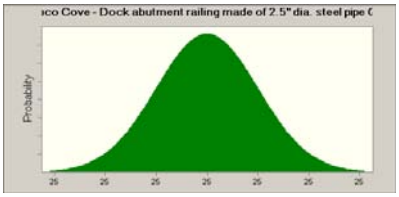
Minimum	$200.00	(=Q110)
Likeliest	$300.00	(=R110)
Maximum	$400.00	(=S110)



Assumption: 96 Copco Cove - Dock abutment railing made of 2.5" dia. steel pipe Quantity **Cell: L111**

Normal distribution with parameters:

Mean	25	(=L111)
Std. Dev.	0	(=0.000001)



Assumption: 96 Copco Cove - Dock abutment railing made of 2.5" dia. steel pipe Unit Price **Cell: R111**

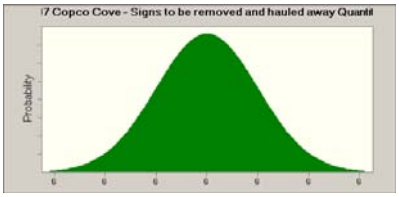
BetaPERT distribution with parameters:

Minimum	$35.00	(=Q111)
Likeliest	$40.00	(=R111)
Maximum	$45.00	(=S111)

Assumption: 97 Copco Cove - Signs to be removed and hauled away Quantity **Cell: L112**

Normal distribution with parameters:

Mean	6	(=L112)
Std. Dev.	0	(=0.000001)



Assumption: 97 Copco Cove - Signs to be removed and hauled away Unit Price **Cell: R112**

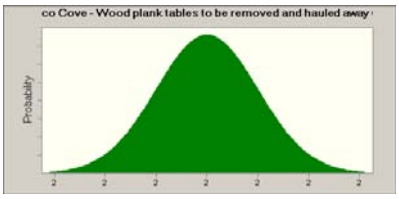
BetaPERT distribution with parameters:

Minimum	$250.00	(=Q112)
Likeliest	$300.00	(=R112)
Maximum	$350.00	(=S112)

Assumption: 98 Copco Cove - Wood plank tables to be removed and hauled away Quantity **Cell: L113**

Normal distribution with parameters:

Mean	2	(=L113)
Std. Dev.	0	(=0.000001)



Assumption: 98 Copco Cove - Wood plank tables to be removed and hauled away Unit Pri Cell: R113

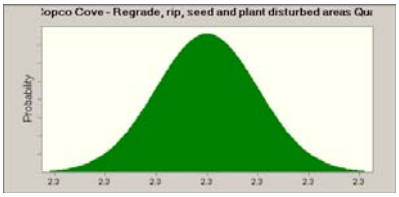
BetaPERT distribution with parameters:

Minimum	$90.00	(=Q113)
Likeliest	$100.00	(=R113)
Maximum	$120.00	(=S113)

Assumption: 99 Copco Cove - Regrade, rip, seed and plant disturbed areas Quantity Cell: L114

Normal distribution with parameters:

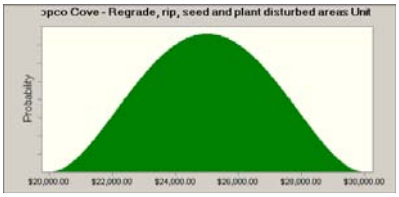
Mean	2.3	(=L114)
Std. Dev.	0.0	(=0.000001)



Assumption: 99 Copco Cove - Regrade, rip, seed and plant disturbed areas Unit Price Cell: R114

BetaPERT distribution with parameters:

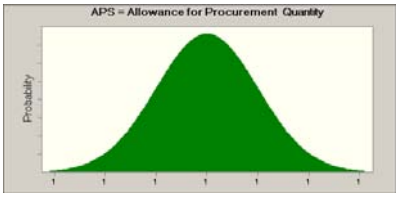
Minimum	$20,000.00	(=Q114)
Likeliest	$25,000.00	(=R114)
Maximum	$30,000.00	(=S114)



Assumption: APS = Allowance for Procurement Quantity **Cell: L123**

Normal distribution with parameters:

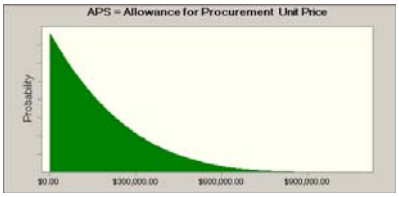
Mean	1	(=L123)
Std. Dev.	0	(=0.000001)



Assumption: APS = Allowance for Procurement Unit Price **Cell: R123**

BetaPERT distribution with parameters:

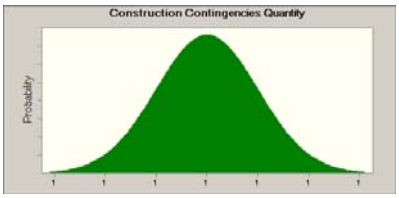
Minimum	$0.00	(=Q123)
Likeliest	$0.00	(=R123)
Maximum	$1,097,665.00	(=S123)



Assumption: Construction Contingencies Quantity **Cell: L126**

Normal distribution with parameters:

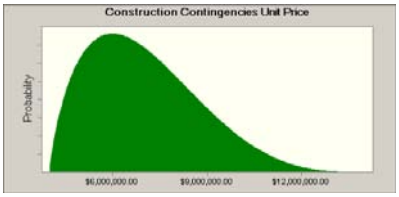
Mean	1	(=L126)
Std. Dev.	0	(=0.000001)



Assumption: Construction Contingencies Unit Price **Cell: R126**

BetaPERT distribution with parameters:

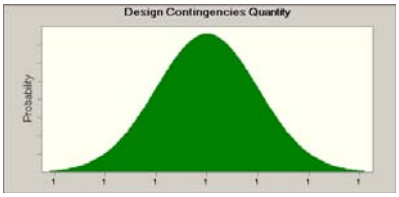
Minimum	$4,000,000.00	(=Q126)
Likeliest	$6,000,000.00	(=R126)
Maximum	$14,000,000.00	(=S126)



Assumption: Design Contingencies Quantity **Cell: L122**

Normal distribution with parameters:

Mean	1	(=L122)
Std. Dev.	0	(=0.000001)



Assumption: Design Contingencies Unit Price **Cell: R122**

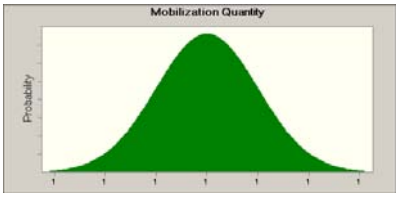
BetaPERT distribution with parameters:

Minimum	$2,196,575.00	(=Q122)
Likeliest	$3,084,900.00	(=R122)
Maximum	$7,177,760.00	(=S122)

Assumption: Mobilization Quantity **Cell: L117**

Normal distribution with parameters:

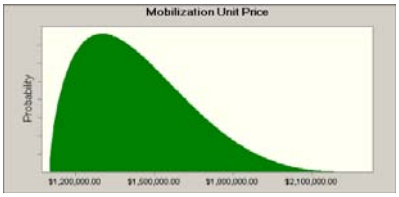
Mean	1	(=L117)
Std. Dev.	0	(=0.000001)



Assumption: Mobilization Unit Price **Cell: R117**

BetaPERT distribution with parameters:

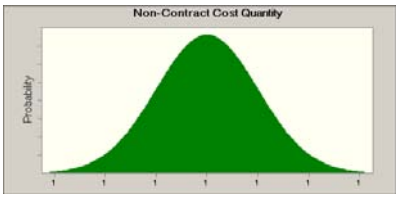
Minimum	$1,100,000.00	(=Q117)
Likeliest	$1,300,000.00	(=R117)
Maximum	$2,300,000.00	(=S117)



Assumption: Non-Contract Cost Quantity **Cell: L128**

Normal distribution with parameters:

Mean	1	(=L128)
Std. Dev.	0	(=0.000001)

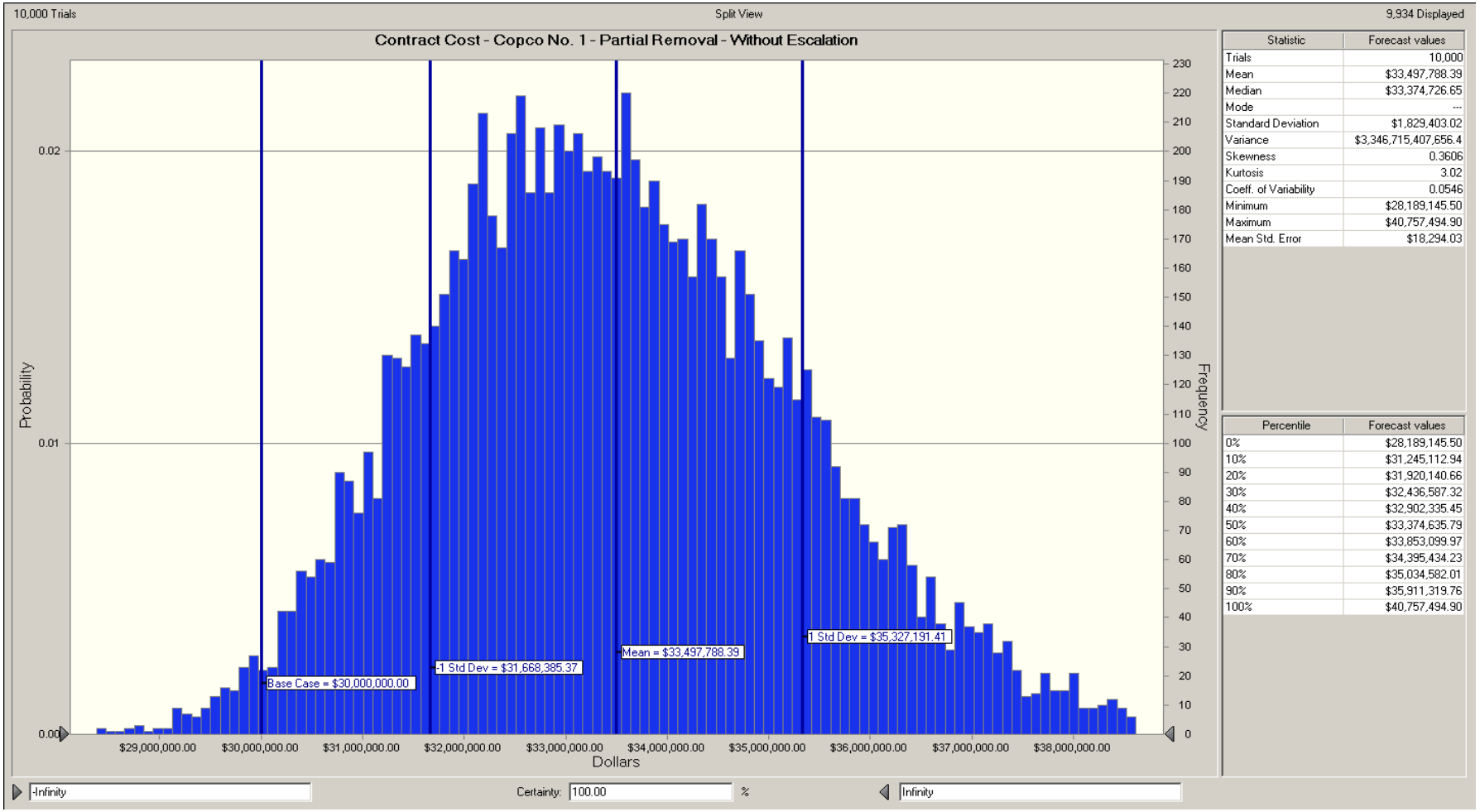


Assumption: Non-Contract Cost Unit Price **Cell: R128**

BetaPERT distribution with parameters:

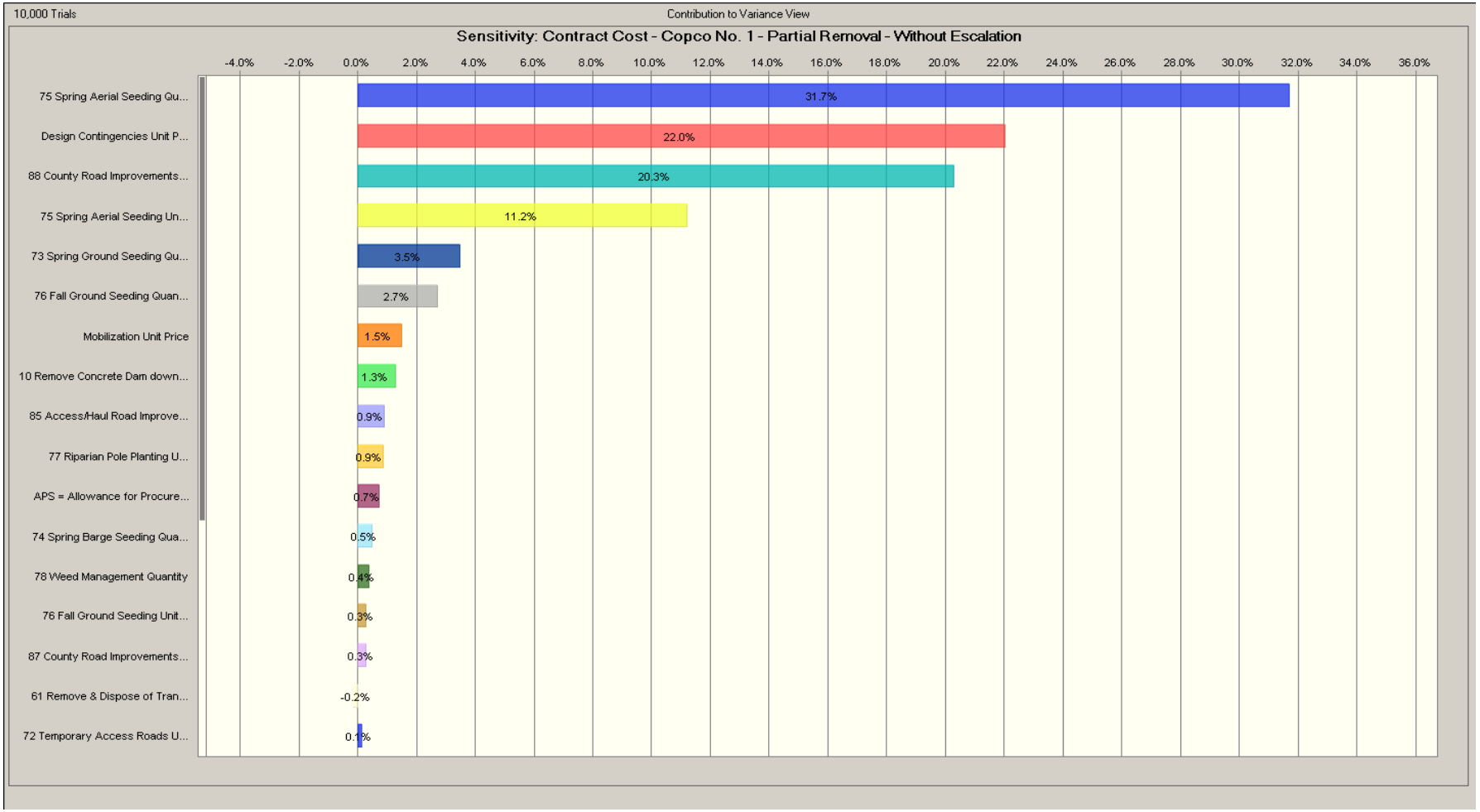
Minimum	$18,000,000.00	(=Q128)
Likeliest	$23,000,000.00	(=R128)
Maximum	$50,000,000.00	(=S128)

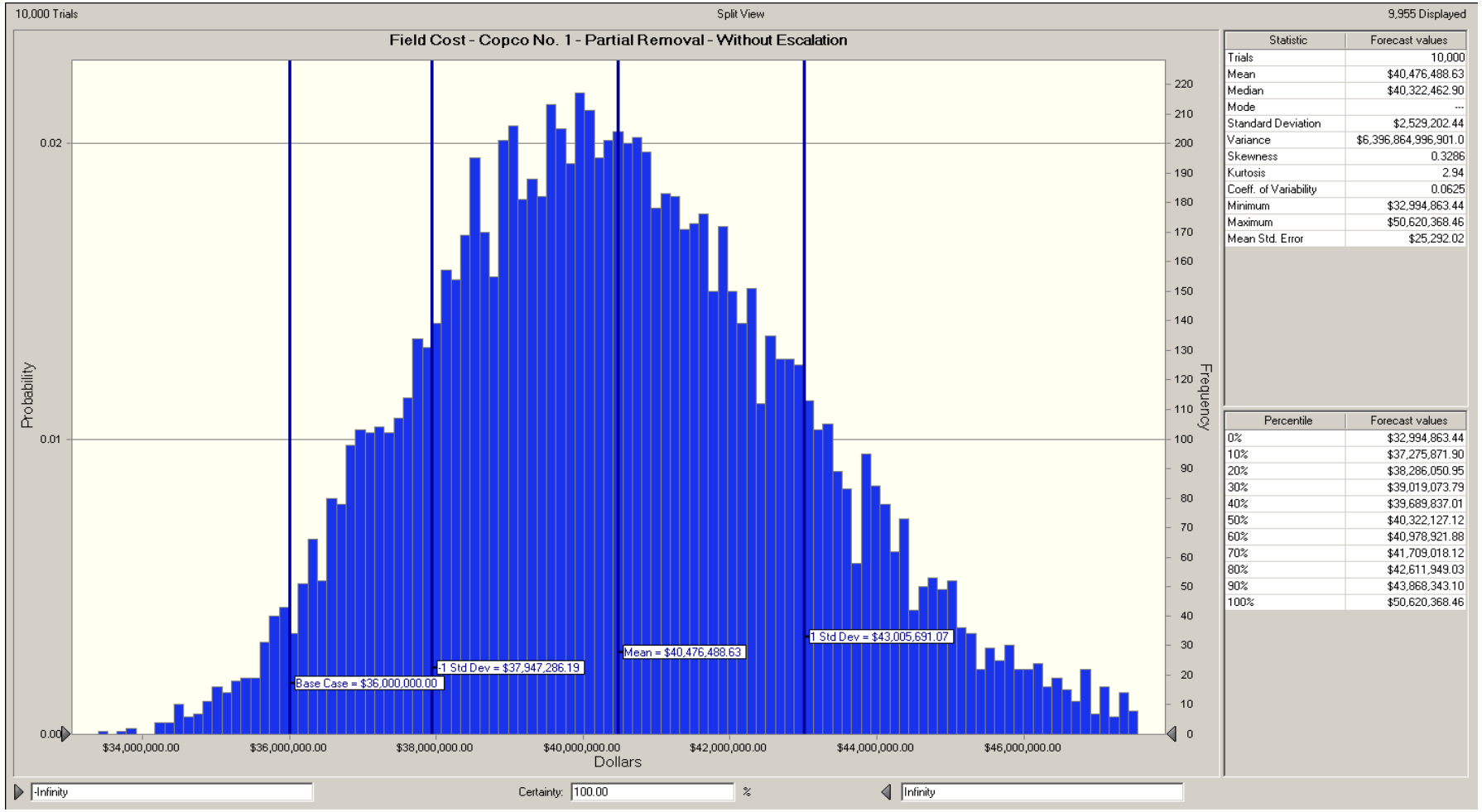
End of Assumptions



Statistic	Forecast values
Trials	10,000
Mean	$33,497,788.39
Median	$33,374,726.65
Mode	---
Standard Deviation	$1,829,403.02
Variance	$3,346,715,407,656.4
Skewness	0.3606
Kurtosis	3.02
Coeff. of Variability	0.0546
Minimum	$28,189,145.50
Maximum	$40,757,494.90
Mean Std. Error	$18,294.03

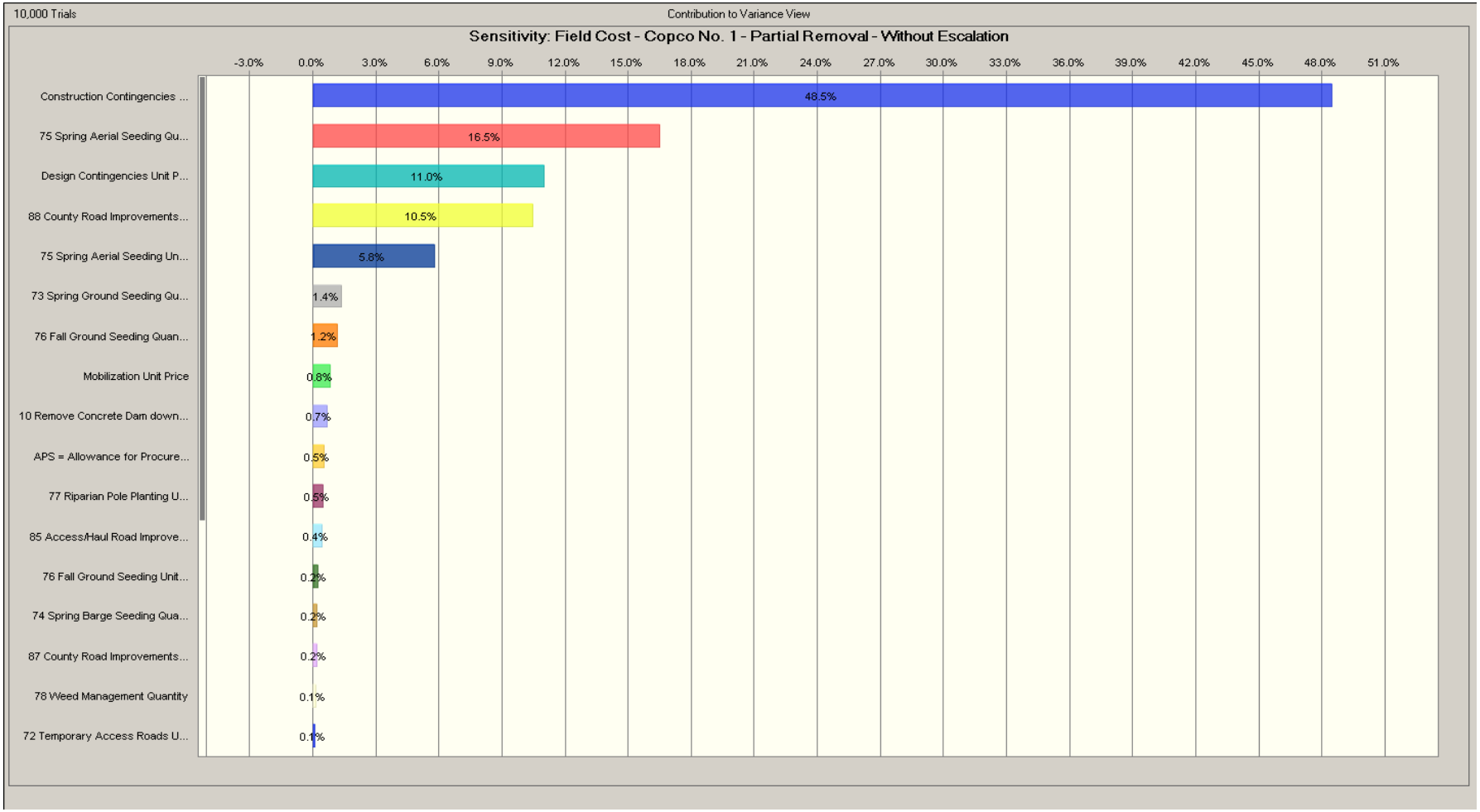
Percentile	Forecast values
0%	$28,189,145.50
10%	$31,245,112.94
20%	$31,920,140.66
30%	$32,436,587.32
40%	$32,902,335.45
50%	$33,374,635.79
60%	$33,853,099.97
70%	$34,395,434.23
80%	$35,034,582.01
90%	$35,911,319.76
100%	$40,757,494.90

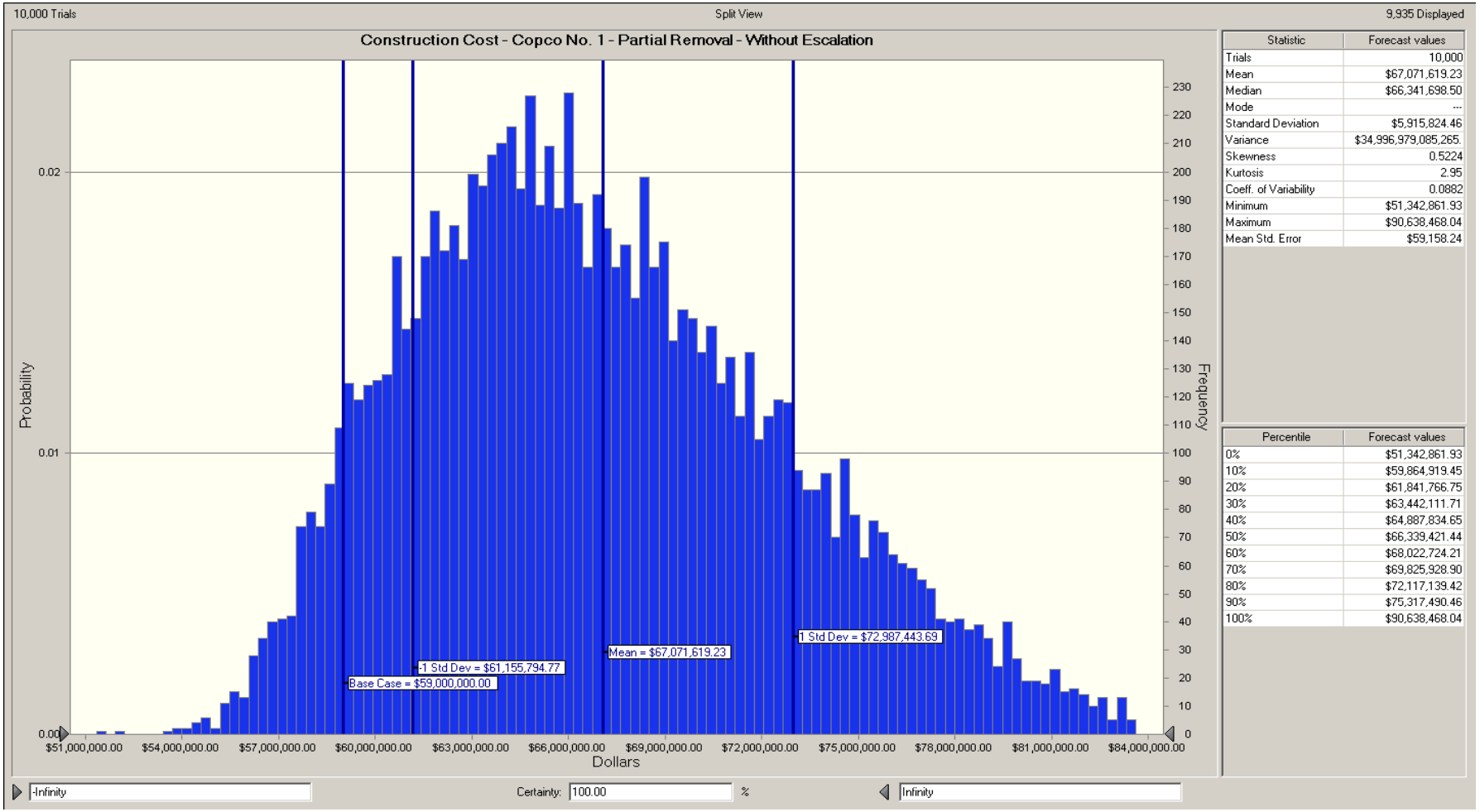

10,000 Trials
Contribution to Variance View
Sensitivity: Contract Cost - Copco No. 1 - Partial Removal - Without Escalation
-4.0%
-2.0%
0.0%
2.0%
4.0%
6.0%
8.0%
10.0%
12.0%
14.0%
16.0%
18.0%
20.0%
22.0%
24.0%
26.0%
28.0%
30.0%
32.0%
34.0%
36.0%
75 Spring Aerial Seeding Qu...
31.7%
Design Contingencies Unit P...
22.0%
88 County Road Improvements...
20.3%
75 Spring Aerial Seeding Un...
11.2%
73 Spring Ground Seeding Qu...
3.5%
76 Fall Ground Seeding Quan...
2.7%
Mobilization Unit Price
1.5%
10 Remove Concrete Dam down...
1.3%
85 Access/Haul Road Improve...
0.9%
77 Riparian Pole Planting U...
0.9%
APS = Allowance for Procure...
0.7%
74 Spring Barge Seeding Qua...
0.5%
78 Weed Management Quantity
0.4%
76 Fall Ground Seeding Unit...
0.3%
87 County Road Improvements...
0.3%
61 Remove & Dispose of Tran...
-0.2%
72 Temporary Access Roads U...
0.1%



Statistic	Forecast values
Trials	10,000
Mean	$40,476,488.63
Median	$40,322,462.90
Mode	---
Standard Deviation	$2,529,202.44
Variance	$6,396,864,996,901.0
Skewness	0.3286
Kurtosis	2.94
Coeff. of Variability	0.0625
Minimum	$32,994,863.44
Maximum	$50,620,368.46
Mean Std. Error	$25,292.02

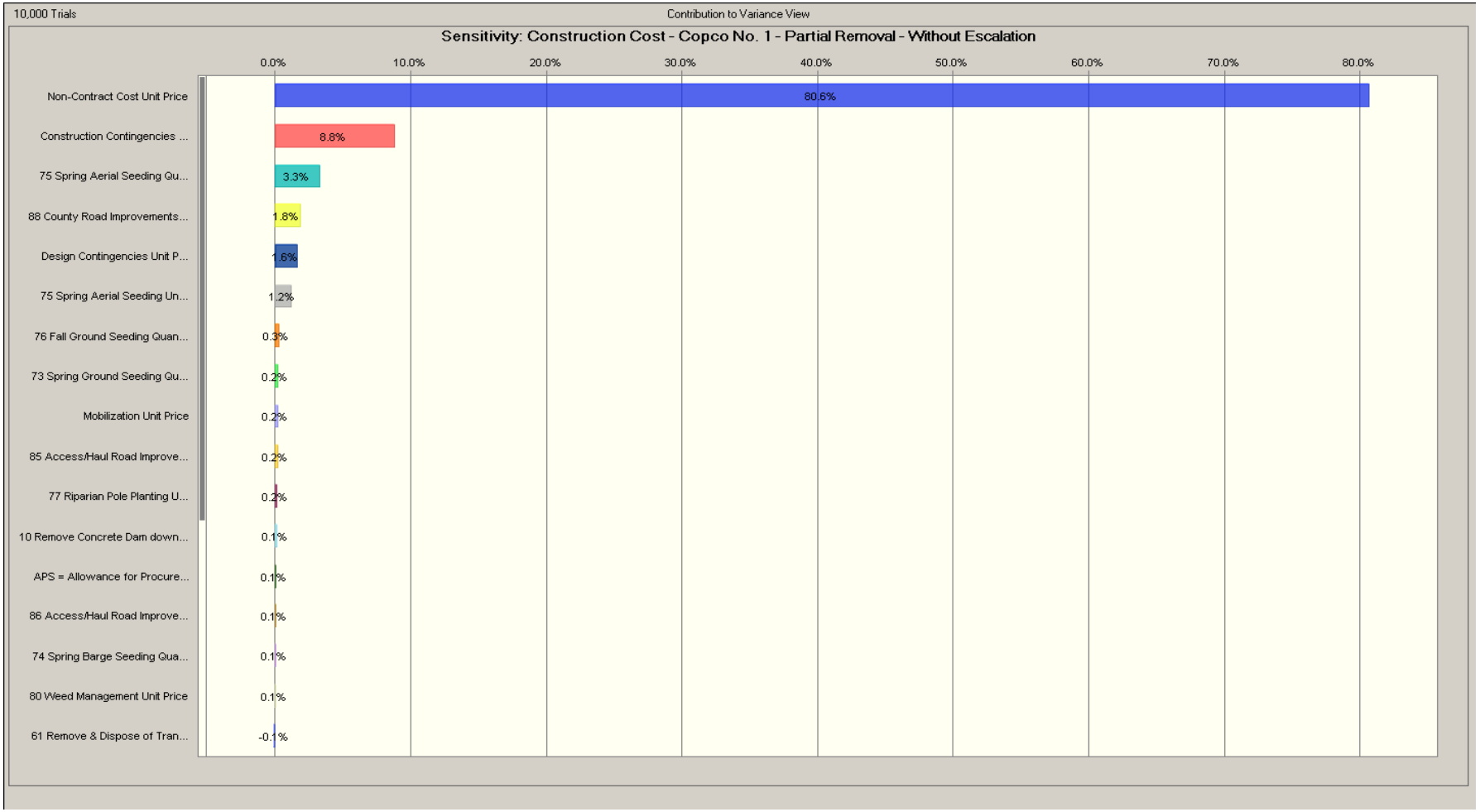
Percentile	Forecast values
0%	$32,994,863.44
10%	$37,275,871.90
20%	$38,286,050.95
30%	$39,019,073.79
40%	$39,689,837.01
50%	$40,322,127.12
60%	$40,978,921.88
70%	$41,709,018.12
80%	$42,611,949.03
90%	$43,868,343.10
100%	$50,620,368.46


10,000 Trials
Contribution to Variance View
Sensitivity: Field Cost - Copco No. 1 - Partial Removal - Without Escalation
-3.0%
0.0%
3.0%
6.0%
9.0%
12.0%
15.0%
18.0%
21.0%
24.0%
27.0%
30.0%
33.0%
36.0%
39.0%
42.0%
45.0%
48.0%
51.0%
Construction Contingencies ...
48.5%
75 Spring Aerial Seeding Qu...
16.5%
Design Contingencies Unit P...
11.0%
88 County Road Improvements...
10.5%
75 Spring Aerial Seeding Un...
5.8%
73 Spring Ground Seeding Qu...
1.4%
76 Fall Ground Seeding Quan...
1.2%
Mobilization Unit Price
0.8%
10 Remove Concrete Dam down...
0.7%
APS = Allowance for Procure...
0.5%
77 Riparian Pole Planting U...
0.5%
85 Access/Haul Road Improve...
0.4%
76 Fall Ground Seeding Unit...
0.2%
74 Spring Barge Seeding Qua...
0.2%
87 County Road Improvements...
0.2%
78 Weed Management Quantity
0.1%
72 Temporary Access Roads U...
0.1%



Statistic	Forecast values
Trials	10,000
Mean	$67,071,619.23
Median	$66,341,698.50
Mode	---
Standard Deviation	$5,915,824.46
Variance	$34,996,979,085,265.
Skewness	0.5224
Kurtosis	2.95
Coeff. of Variability	0.0882
Minimum	$51,342,861.93
Maximum	$90,638,468.04
Mean Std. Error	$59,158.24

Percentile	Forecast values
0%	$51,342,861.93
10%	$59,864,919.45
20%	$61,841,766.75
30%	$63,442,111.71
40%	$64,887,834.65
50%	$66,339,421.44
60%	$68,022,724.21
70%	$69,825,928.90
80%	$72,117,139.42
90%	$75,317,490.46
100%	$90,638,468.04


10,000 Trials
Contribution to Variance View
Sensitivity: Construction Cost - Copco No. 1 - Partial Removal - Without Escalation
0.0%
10.0%
20.0%
30.0%
40.0%
50.0%
60.0%
70.0%
80.0%
Non-Contract Cost Unit Price
80.6%
Construction Contingencies ...
8.8%
75 Spring Aerial Seeding Qu...
3.3%
88 County Road Improvements...
1.8%
Design Contingencies Unit P...
1.6%
75 Spring Aerial Seeding Un...
1.2%
76 Fall Ground Seeding Quan...
0.3%
73 Spring Ground Seeding Qu...
0.2%
Mobilization Unit Price
0.2%
85 Access/Haul Road Improve...
0.2%
77 Riparian Pole Planting U...
0.2%
10 Remove Concrete Dam down...
0.1%
APS = Allowance for Procure...
0.1%
86 Access/Haul Road Improve...
0.1%
74 Spring Barge Seeding Qua...
0.1%
80 Weed Management Unit Price
0.1%
61 Remove & Dispose of Tran...
-0.1%