

St. Bernard Parish Federal Flood Control Project

Risk Analysis Report

For:



ARCADIS U.S., Inc.
10352 Plaza Americana Drive
Baton Rouge, Louisiana 70816

June 6, 2008



Celebrating 25 Years

**1200 Abernathy Road, Building 600, Suite 950
Atlanta, Georgia 30328
770-481-1600 Fax 770-481-1640**

St. Bernard Parish Federal Flood Control Project Risk Analysis Report

Risk Analysis Process

Risk variables are the causative variables in projects that have been identified as being important to the risk analysis. The risk variables that often have an effect on construction projects include permitting/licensing, cost escalation, local labor, shipping logistics, infrastructure conditions, the availability of materials, taxes, and the local weather/environment. For the St. Bernard Parish projects the following risk variables were selected:

- **Permitting/Permits:** These are the Risks Associated with (1) Permitting Delays due to Community Concerns, Environmental Discoveries, Archeological Finds and Project Start delays in procuring needed Federal and State permits
- **Material Availability/Cost:** Cost Risks directly related to the fluctuating world market costs of steel, concrete ingredients; pumps & motors; borrow, and rip-rap
- **Scope Definition:** Cost risk related to changes in project scope due to unforeseen conditions discovered in the period to bidding & contract award or after the start of construction
- **Labor Rates/Availability:** Cost risks directly related to the amount of concurrent construction of a similar nature and labor rate pressures from increasing costs of living (primarily fuel & food)
- **Weather/Environment:** Risk of project delays beyond normally forecasted due to severe storms in the area or along the Mississippi River basin; possibility of unusually temperate construction work period (accelerated work schedule)
- **Schedule:** Risk of changes to the schedule start of successor activities due to changes in duration or start/finish (positive or negative) of predecessor activities
- **Acquisition:** Cost risk related to the contractor/subcontractor procurement process including negotiation difficulties; contractor insolvency
- **Bidding Climate:** Adverse or positive conditions in the market related to the number and quality of contractors/subcontractors
- **Fuel Costs:** Escalation/de-escalation in equipment & transport costs directly related to the cost of crude oil and refining
- **Design:** Cost risk related to completion of the design documents

The Risk Variables were then evaluated against the primary Work Breakdown Structure (WBS) elements as contained in the U.S. Cost, cost estimate of 28 April 2008. The primary cost elements for the two major project elements are:

- Flood Wall Armor
- Embankment Fill
- Base Slab & Walls to Gate Structure
- Engineering & Design

St. Bernard Parish Federal Flood Control Project Risk Analysis Report

- Supervision/Administration
- Control House/Dolphins/Guidewall
- Temporary Cofferdam
- Sector Gate
- Pontoon Bridge
- T-Wall
- Sheet Piling to T-Walls
- Sheet Piling to Gate Structure

To evaluate the risk, we used a weighted average worksheet that allows for the multiple risks against the project elements to be combined in a single risk factor. In evaluating the risk we first select a “weight”, or risk rating, and then a percentage range for each variable. The weight ranges from 1 to 10, depending on the likelihood of the variable affecting this particular project’s cost. If the analyst is highly certain the variable is not applicable to this project then a weight of 1 is selected; however, if the variable is very likely to affect the St. Bernard Parish project then a weight of 9 or 10 is selected. The minimum and maximum percentage values define the potential effects the risk variable may have on the element’s cost.

The weighted averages were then used to determine the minimum and maximum values for the cost elements prior to conducting the Monte Carlo simulation. This is done with probability distributions. Probability distributions are used to depict the level of risk by presenting the risk variability within a range (a range of possible values and their likelihood of occurrence). For the purpose of this analysis, the Triangular Distribution was utilized to allow the analysis to include three data points (minimum, most likely, maximum) with an emphasis on the most likely value.

The Monte Carlo simulation was conducted using Crystal Ball® software, Version 7.3.1. The process allowed for the analysis of each discrete project element as a separate risk analysis with 10,000 iterations used as the basis for the analysis.

ST. BERNARD PARISH FEDERAL FLOOD CONTROL PROJECT
LVP-144 RISK REGISTER

Risk Factor	Flood Wall Armor ⁽¹⁾			Embankment Fill ⁽¹⁾			Base Slab & Walls to Gate Structure			Engineering & Design ⁽⁵⁾			Supervision/Administration ⁽⁵⁾			Control House/Dolphins/Guidewall ⁽⁴⁾		
	Weight	- (%)	+ (%)	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	6%	1	1%	6%	5	2%	4%	2	2%	4%	3	1%	2%
Material Availability/Cost	1	2%	18%	6	2%	24%	3	1%	12%	1	0%	0%	3	0%	5%	4	2%	9%
Scope Definition	4	2%	4%	4	2%	4%	2	1%	4%	3	0%	2%	6	2%	4%	4	0%	4%
Labor Rates/Availability	5	2%	20%	5	2%	20%	6	0%	20%	1	0%	5%	5	2%	5%	5	0%	12%
Weather/Environment	9	2%	16%	9	2%	16%	8	2%	16%	1	0%	0%	9	1%	2%	9	0%	9%
Schedule	2	2%	8%	2	2%	8%	7	2%	8%	3	0%	0%	10	1%	5%	2	2%	8%
Bidding Climate	7	1%	32%	7	1%	32%	4	1%	32%	1	0%	0%	8	2%	10%	7	1%	15%
Fuel Costs	10	4%	32%	10	4%	32%	9	4%	20%	1	0%	4%	2	2%	8%	8	2%	12%
Weighted Average	39	0.02	0.22	44	0.02	0.22	40	0.02	0.17	16	0.01	0.02	45	0.01	0.05	42	0.01	0.10

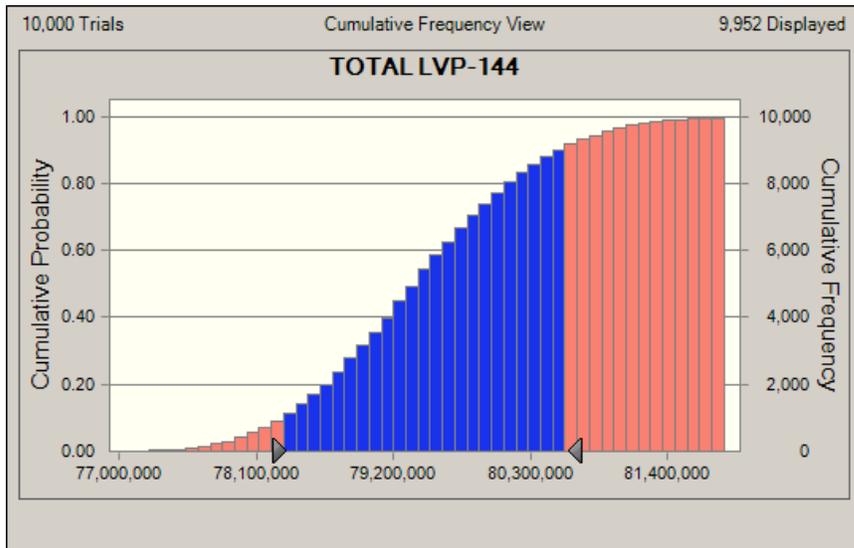
Risk Factor	Temporary Cofferdam ⁽⁷⁾			Sector Gate ⁽⁵⁾			Pontoon Bridge ⁽⁵⁾			T-Wall ⁽⁶⁾			Sheet Piling to T-Walls ⁽⁷⁾			Sheet Piling to Gate Structure ⁽⁷⁾		
	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	2%	1	2%	6%	1	1%	6%	1	2%	6%	1	2%	6%
Material Availability/Cost	1	0%	12%	6	1%	10%	6	1%	10%	3	1%	12%	1	0%	12%	1	0%	12%
Scope Definition	4	2%	4%	4	2%	6%	4	2%	6%	2	1%	4%	4	2%	4%	4	2%	4%
Labor Rates/Availability	5	2%	20%	5	2%	20%	5	2%	20%	6	0%	20%	5	2%	20%	5	2%	20%
Weather/Environment	9	2%	16%	9	2%	4%	9	2%	4%	8	2%	16%	9	2%	16%	9	2%	16%
Schedule	7	2%	8%	7	1%	4%	7	1%	4%	7	2%	8%	7	2%	8%	7	2%	8%
Bidding Climate	8	1%	24%	8	1%	36%	8	1%	20%	4	1%	24%	8	1%	32%	8	1%	32%
Fuel Costs	8	2%	24%	8	2%	48%	8	2%	48%	9	4%	24%	8	2%	24%	8	2%	24%
Weighted Average	43	0.02	0.17	48	0.02	0.19	48	0.02	0.17	40	0.02	0.17	43	0.02	0.18	43	0.02	0.18

NOTES

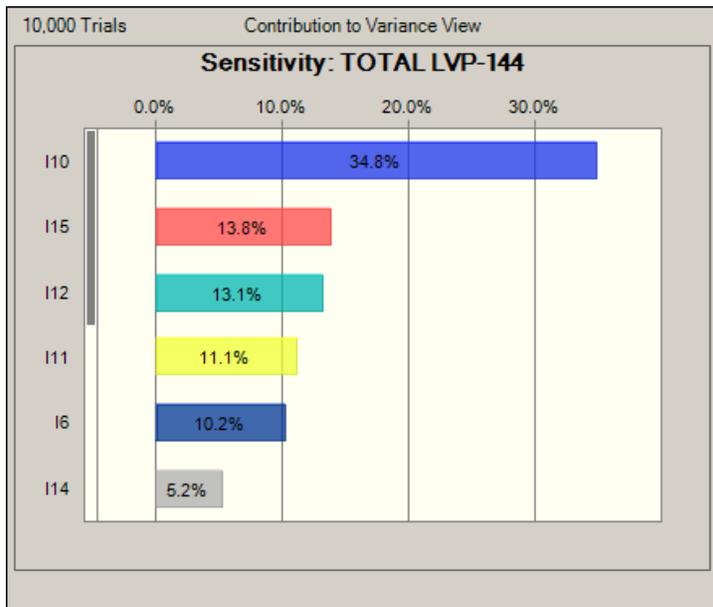
- (1) Primarily Impacted by Weather and Fuel (Transport) Risks
- (2) Primarily Impacted by Weather and Fuel (Transport) Risks
- (3) Large Fluctuations in Material Costs are the Primary Risks
- (4) Risk to Placing Dolphins & Guidewall Structures Stems from Fluctuating River Levels/ Currents;
- (5) Sector Gate and Pontoon Bridge Components Risks include Fabricator non-Interest, and Steel & Transport Costs
- (6) T-Wall Cost Risk Tied to Fluctuating Steel (Rebar) Costs and the Transport Costs Associated with Concrete Materials & Product; Labor in Short Supply due to the Magnitude of Construction in Gulf Coast Region
- (7) Steel (Cofferdam and Sheet Piling) Limited in Availability; Widely Fluctuating Steel Costs; Marine Installation has a Limited Pool of Contractors

St. Bernard Parish Federal Flood Control Project Risk Analysis Report

Results and Recommendations



The above chart and the accompanying Crystal Ball report summarize the results of the cost-risk analysis. The order of magnitude, 80% confidence costs with risk for LVP-144 is \$80,575,437. This compares with the most likely value (as contained in the U.S. COST estimate of 28 March 2008 of **75,505,061**. The results of this risk analysis suggest a project contingency of 5% is appropriate to ensure there is an 80% certainty that the project, as envisioned, will not exceed \$80.5 million.



LEGEND
 I10: Temporary Cofferdam
 I15: Sheet Piling to Gate
 I12: Pontoon Bridge
 I11: Sector Gate
 I6: Base Slab & Walls to Gate
 I14: Sheet Piling to T-wall

As indicated in the Tornado Chart, the primary variable is associated with the temporary cofferdam. This is expected since the risks associated with its

St. Bernard Parish Federal Flood Control Project
Risk Analysis Report

construction include the material cost risks and labor and contractor availability as well as the high possibility of issues related to weather in the immediate area and upstream.

Crystal Ball Report - Forecasts

Simulation started on 6/6/2008 at 8:25:54

Simulation stopped on 6/6/2008 at 9:41:50

Run preferences:

Number of trials run	10,000
Monte Carlo	
Random seed	
Precision control on	
Confidence level	95.00%

Run statistics:

Total running time (sec)	6.06
Trials/second (average)	1,651
Random numbers per sec	19,813

Crystal Ball data:

Assumptions	12
Correlations	0
Correlated groups	0
Decision variables	0
Forecasts	1

Forecasts

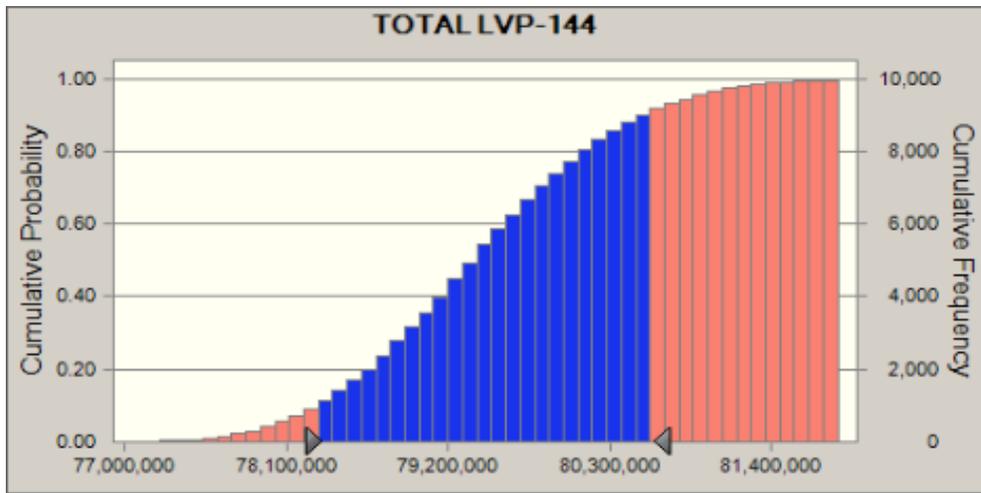
Worksheet: [LVP-144.xls]Cost Model

Forecast: TOTAL LVP-144

Cell: I3

Summary:

Certainty level is 80.00%
 Certainty range is from 78,356,059 to 80,575,437
 Entire range is from 76,692,220 to 82,887,350
 Base case is 76,505,060
 After 10,000 trials, the std. error of the mean is 8,586



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	79,444,904	16,829
Median	79,408,202	17,893
Mode	---	
Standard Deviation	858,638	11,652
Variance	737,259,724,387	
Skewness	0.2199	
Kurtosis	2.92	
Coeff. of Variability	0.0108	
Minimum	76,692,220	
Maximum	82,887,350	
Range Width	6,195,130	
Mean Std. Error	8,586	

Forecast: TOTAL LVP-144 (cont'd)**Cell: I3**

Percentiles:	Forecast values	Precision
0%	76,692,220	
10%	78,356,059	25,366
20%	78,709,825	23,096
30%	78,964,673	20,220
40%	79,201,399	18,454
50%	79,408,068	17,893
60%	79,628,933	23,343
70%	79,870,197	24,078
80%	80,166,776	26,921
90%	80,575,437	23,669
100%	82,887,350	

End of Forecasts

St. Bernard Parish Federal Flood Control Project

Risk Analysis Report

For:



ARCADIS U.S., Inc.
10352 Plaza Americana Drive
Baton Rouge, Louisiana 70816

September 15, 2008



Celebrating 25 Years

**1200 Abernathy Road, Building 600, Suite 950
Atlanta, Georgia 30328
770-481-1600 Fax 770-481-1640**

St. Bernard Parish Federal Flood Control Project Risk Analysis Report

Risk Analysis Process

Risk variables are the causative variables in projects that have been identified as being important to the risk analysis. The risk variables that often have an effect on construction projects include permitting/licensing, cost escalation, local labor, shipping logistics, infrastructure conditions, the availability of materials, taxes, and the local weather/environment.

Cost Risks. For the St. Bernard Parish projects the following cost risk variables were selected:

- **Permitting/Permits:** These are the Risks Associated with (1) Permitting Delays due to Community Concerns, Environmental Discoveries, Archeological Finds and Project Start delays in procuring needed Federal and State permits
- **Material Availability/Cost:** Cost Risks directly related to the fluctuating world market costs of steel, concrete ingredients; pumps & motors; borrow, and rip-rap
- **Scope Definition:** Cost risk related to changes in project scope due to unforeseen conditions discovered in the period to bidding & contract award or after the start of construction
- **Labor Rates/Availability:** Cost risks directly related to the amount of concurrent construction of a similar nature and labor rate pressures from increasing costs of living (primarily fuel & food)
- **Weather/Environment:** Risk of project delays beyond normally forecasted due to severe storms in the area or along the Mississippi River basin; possibility of unusually temperate construction work period (accelerated work schedule)
- **Schedule:** Risk of changes to the schedule start of successor activities due to changes in duration or start/finish (positive or negative) of predecessor activities
- **Acquisition:** Cost risk related to the contractor/subcontractor procurement process including negotiation difficulties; contractor insolvency
- **Bidding Climate:** Adverse or positive conditions in the market related to the number and quality of contractors/subcontractors
- **Fuel Costs:** Escalation/de-escalation in equipment & transport costs directly related to the cost of crude oil and refining
- **Design:** Cost risk related to completion of the design documents

These Cost Risk Variables were then evaluated against the primary Work Breakdown Structure (WBS) elements as contained in the U.S. Cost, cost estimate of 02 September 2008; revised in Part on 10 September 2008. The primary cost elements are:

- Levees and Flood Wall Armor
- Flood Gates (LPV 149)

St. Bernard Parish Federal Flood Control Project
Risk Analysis Report

- Engineering & Design
- Supervision/Administration
- T-Wall
- Sheet Piling to T-Walls
- A36 Steel Piles (Structural Shapes and Pipes)
- Relocations and Right-of-Way

Schedule Risks. For schedule risk, different factors were selected for the pre-construction schedule activities and for the construction activities. The schedule risk factors were determined as:

Pre-Construction Activities

- Work Restrictions
- Community Concerns
- Scope Definition
- Labor Availability
- Criteria Changes
- Market Factors
- Competing Projects
- Reviews and Acceptance

Construction Activities

- Work Restrictions
- Material Availability
- Scope Definition
- Labor Availability
- Weather/Environment
- Equipment Availability
- Competing Projects
- Haul Distance

These Schedule Risk Variables were then evaluated against the primary activities as shown on the final schedules. The primary pre-construction activities are:

- Engineering & Design
- Permits
- Real Estate Acquisition

The construction related activities are, in the case of Reaches 145-148:

- Mobilization & Access
- Relocations
- Clear/Grub/RipRap
- Sheet Piling to T-Walls

St. Bernard Parish Federal Flood Control Project
Risk Analysis Report

- A-36 Piles
- T-Wall Construction
- Embankment/Seeding

For Reach 149, the following construction related activities were selected:

- Mobilization & Access
- Relocations
- Clear Grub & Excavation
- Support & Sheet Piling to T-Walls
- T-Wall Construction

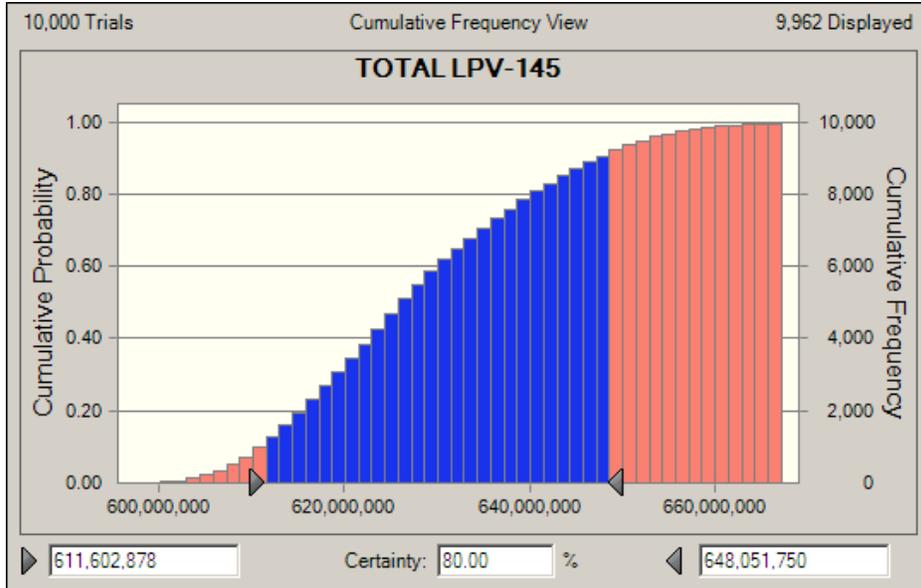
Risk Evaluation. To evaluate the risk, we used a weighted average worksheet that allows for the multiple risks against the project elements to be combined in a single risk factor. In evaluating the risk we first select a “weight”, or risk rating, and then a percentage range for each variable. The weight ranges from 1 to 10, depending on the likelihood of the variable affecting this particular project’s cost or schedule duration. If the analyst is highly certain the variable is not applicable to this project then a weight of 1 is selected; however, if the variable is very likely to affect the St. Bernard Parish project then a weight of 9 or 10 is selected. The minimum and maximum percentage values define the potential effects the risk variable may have on the element’s cost or duration.

The weighted averages were then used to determine the minimum and maximum values for the cost elements and schedule activities prior to conducting the Monte Carlo simulation. This is done with probability distributions. Probability distributions are used to depict the level of risk by presenting the risk variability within a range (a range of possible values and their likelihood of occurrence). For the purpose of this analysis, the Triangular Distribution was utilized to allow the analysis to include three data points (minimum, most likely, maximum) with an emphasis on the most likely value.

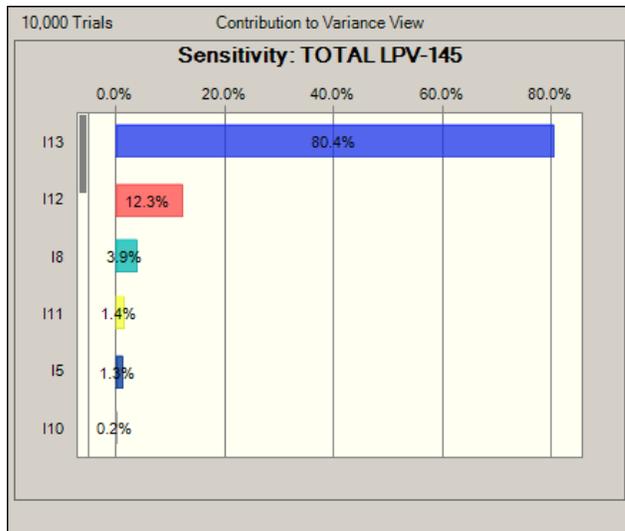
For both cost and schedule risk, a Monte Carlo simulation was conducted using Crystal Ball® software, Version 7.3.1 and 10,000 iterations was selected to assure convergence. In the case of the cost risk simulation, the analysis was used to determine the range for the total cost of the project for each Reach. For the schedule risk analysis, the range was determined for each activity and the resultants fed back into the project schedules for each Reach to determine a risk based duration for the project. Since the risk analysis compiled multiple activities into single risk elements (e.g., Engineering Design comprised of Survey & Soil Boring, 35%, 95% and Final Design) results of the simulation were apportioned among the schedule activities according to their relationship to the overall duration. For example, if in the original schedule the Engineering and Design activity is 100 days and 35 of those days are related to the 35% design phase, then 35% of the eightieth percentile simulation results of 200 days would be allocated to that schedule activity resulting in a new schedule input of 70 days.

St. Bernard Parish Federal Flood Control Project Risk Analysis Report

Cost Risk Results and Recommendations



The above chart and the accompanying Crystal Ball report summarize the results of the cost-risk analysis. The order of magnitude, 80% confidence costs with risk for LVP-145 is **\$648,051,750**. This compares with the most likely value (as contained in the U.S. COST estimate of 10 September 2008 of **\$598,537,929**. The results of this risk analysis suggest a project construction contingency of 8.36% is appropriate to ensure there is an 80% certainty that the project, as envisioned, will not exceed \$648 million.

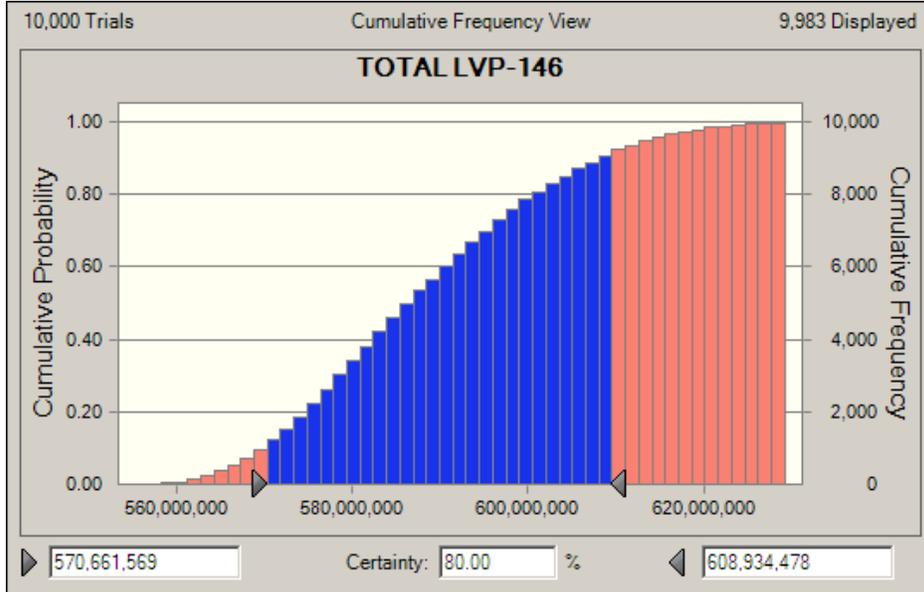


LEGEND
 I13: Steel Piles
 I12: Sheet Piling
 I8: Engineering & Design
 I11: T-Wall
 I5: Flood Wall Armor
 I10: Relocations

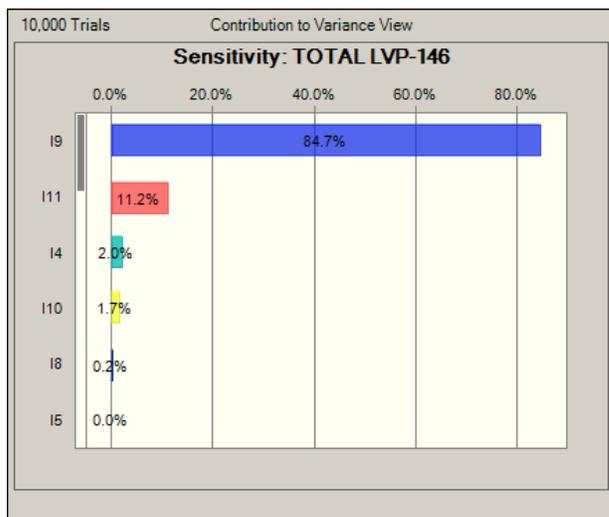
As indicated in the Tornado Chart, the primary variable is associated with the Steel Piles. This is expected since the risks associated with their placement

St. Bernard Parish Federal Flood Control Project Risk Analysis Report

include the material cost risks (largely due to a highly volatile steel market) and labor and contractor availability as well as the high possibility of issues related to weather in the immediate area and upstream.



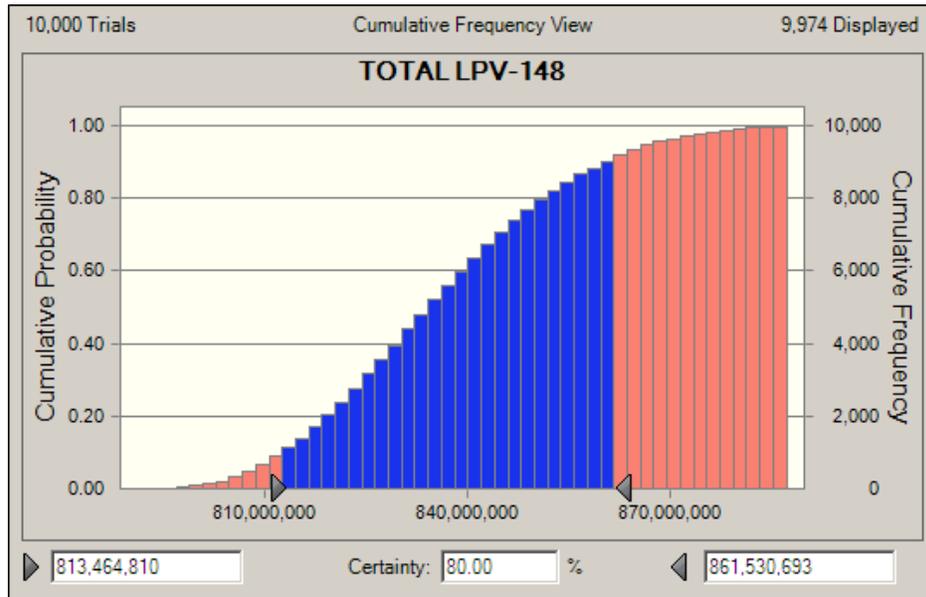
The above chart and the accompanying Crystal Ball report summarize the results of the cost-risk analysis. The order of magnitude, 80% confidence costs with risk for LVP-146 is **\$608,934,478**. This compares with the most likely value (as contained in the U.S. COST estimate of 10 September 2008 of **\$564,832,052**, The results of this risk analysis suggest a project construction contingency of 7.8% is appropriate to ensure there is an 80% certainty that the project, as envisioned, will not exceed \$608 million.



LEGEND
 I13: Steel Piles
 I12: Sheet Piling
 I8: Engineering & Design
 I11: T-Wall
 I5: Flood Wall Armor
 I10: Relocations

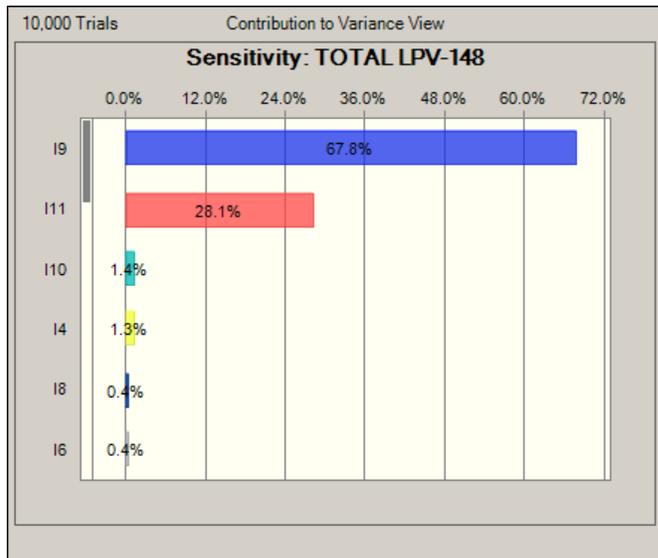
St. Bernard Parish Federal Flood Control Project Risk Analysis Report

As indicated in the Tornado Chart, the primary variable is associated with the Steel Piles. This is expected since the risks associated with their placement include the material cost risks (largely due to a highly volatile steel market) and labor and contractor availability as well as the high possibility of issues related to weather in the immediate area and upstream.



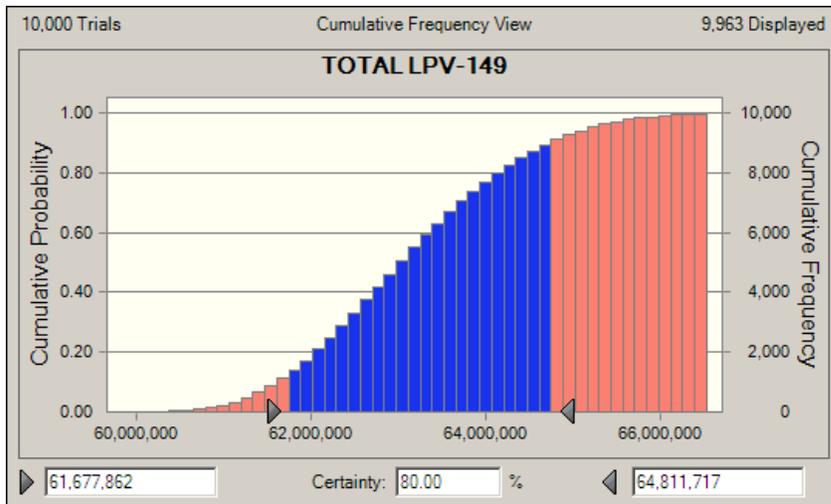
The above chart and the accompanying Crystal Ball report summarize the results of the cost-risk analysis. The order of magnitude, 80% confidence costs with risk for LVP-145 is **\$861,530,693**. This compares with the most likely value (as contained in the U.S. COST estimate of 10 September 2008 of **\$802,245,575**). The results of this risk analysis suggest a project construction contingency of 7.36% is appropriate to ensure there is an 80% certainty that the project, as envisioned, will not exceed \$861 million.

St. Bernard Parish Federal Flood Control Project Risk Analysis Report



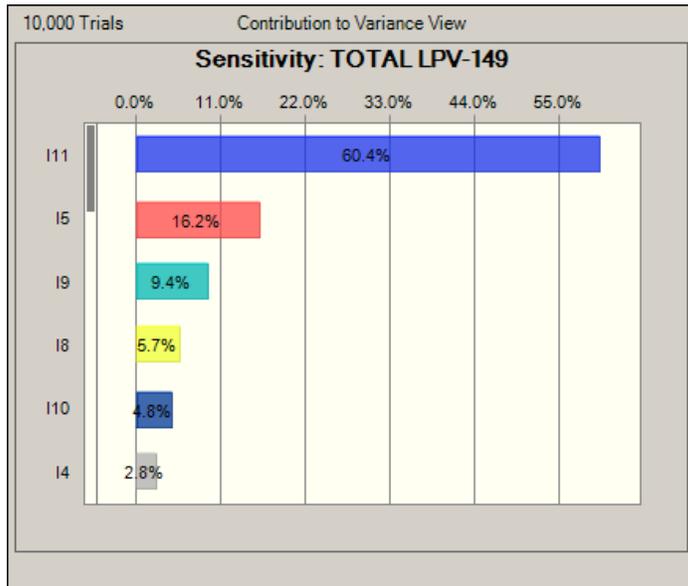
LEGEND
 I9: Steel Piles
 I11: Sheet Piling
 I10: T-Wall
 I4: Flood Wall Armor
 I8: Supervision & Administration
 I6: Relocations and ROW

As indicated in the Tornado Chart, the primary variable is associated with the Steel Piles. This is expected since the risks associated with their placement include the material cost risks (largely due to a highly volatile steel market) and labor and contractor availability as well as the high possibility of issues related to weather in the immediate area and upstream.



The above chart and the accompanying Crystal Ball report summarize the results of the cost-risk analysis. The order of magnitude, 80% confidence costs with risk for LVP-145 is **\$64,811,717**. This compares with the most likely value (as contained in the U.S. COST estimate of 10 September 2008 of **\$60,055,324**. The results of this risk analysis suggest a project construction contingency of 6.67% is appropriate to ensure there is an 80% certainty that the project, as envisioned, will not exceed \$65 million.

St. Bernard Parish Federal Flood Control Project Risk Analysis Report



LEGEND
 I11: Steel Piles
 I5: Levees
 I9: T-Walls
 I8: Flood Gates
 I10: Sheet Piling
 I4: Relocations and ROW

As indicated in the Tornado Chart, the primary variable is associated with the Steel Piles. This is expected since the risks associated with their placement include the material cost risks (largely due to a highly volatile steel market) and labor and contractor availability as well as the high possibility of issues related to weather in the immediate area and upstream.

Schedule Risk Results and Recommendations

The following Activity durations were determined from the risk analysis on the discrete project activities for each reach:

	Risk Based Schedule Duration (Days)
LPV-145	
Pre-Construction	
Engineering & Design	430
Permits	156
Real Estate Acquisition	133
Construction	
Mobilization & Access	18
Relocations	135
Clear/Grub/RipRap	394
Sheet Piling to T-Walls	475
A-36 Piles	1040
T-Wall Construction	604
Embankment/Seeding	370

St. Bernard Parish Federal Flood Control Project
Risk Analysis Report

LPV-146		
Pre-Construction		
Engineering & Design		429
Permits		146
Real Estate Acquisition		140
Construction		
Mobilization & Access		18
Relocations		135
Clear/Grub/RipRap		416
Sheet Piling to T-Walls		475
A-36 Piles		767
T-Wall Construction		667

LPV-148		
Pre-Construction		
Engineering & Design		429
Permits		156
Real Estate Acquisition		140
Construction		
Mobilization & Access		18
Relocations		135
Clear/Grub/RipRap		537
Sheet Piling to T-Walls		1372
A-36 Piles		1174
T-Wall Construction		669
Embankment/Seeding		44

LPV-149		
Pre-Construction		
Engineering & Design		331
Permits		206
Real Estate Acquisition		180
Construction		
Mobilization & Access		17
Relocations		23
Clear Grub & Excavation		71
Support & Sheet Piling to T-Walls		115
T-Wall Construction		137

As previously discussed, these risk based durations were then substituted for the previously determined most likely values in the project schedules of 29 July 2008 to determine a risk based schedule for each reach.

St. Bernard Parish Federal Flood Control Project
Risk Analysis Report

The overall schedule durations for each reach at the eightieth percentile alternative durations were determined as:

	Original Duration	Risk Adjusted Duration	Delta
LPV-145	1,457	1,700	17%
LPV-146	1,241	1,369	10%
LPV-148	1,381	1,542	12%
LPV-149	640	699	9%

Note that the increased durations are solely the result of changes to the durations of activities on the critical path as determined using the original schedule critical path. Some of the other duration changes may result in activities being added to the critical path, however, they were not considered in the above analysis since the majority of the additional days were associated with activities that could begin sooner (e.g., real estate acquisition), mitigating the schedule risk.

Most of the risk on these projects is associated with procurement and installation of the sheet and support piles to the T-Walls. This is expected since they have the longest durations (sometimes spanning 2 or more years), they are reliant on specialized equipment and work forces

ST. BERNARD PARISH FEDERAL FLOOD CONTROL PROJECT
LVP-145 RISK REGISTER

Risk Factor	Flood Wall Armor ⁽¹⁾			Levees ⁽¹⁾						Engineering & Design ⁽⁵⁾			Supervision/Administration ⁽⁵⁾					
	Weight	- (%)	+ (%)	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	6%	1	1%	6%	5	2%	4%	2	2%	4%	3	1%	2%
Material Availability/Cost	1	2%	18%	6	2%	24%	3	1%	12%	1	0%	0%	3	0%	5%	4	2%	9%
Scope Definition	4	2%	4%	4	2%	4%	2	1%	4%	3	0%	2%	6	2%	4%	4	0%	4%
Labor Rates/Availability	5	2%	20%	5	2%	20%	6	0%	20%	1	0%	5%	5	2%	5%	5	0%	12%
Weather/Environment	9	2%	16%	9	2%	16%	8	2%	16%	1	0%	0%	9	1%	2%	9	0%	9%
Schedule	2	2%	8%	2	2%	8%	7	2%	8%	3	0%	0%	10	1%	5%	2	2%	8%
Bidding Climate	7	1%	32%	7	1%	32%	4	1%	32%	1	0%	0%	8	2%	10%	7	1%	15%
Fuel Costs	10	4%	32%	10	4%	32%	9	4%	20%	1	0%	4%	2	2%	8%	8	2%	12%
Weighted Average	39	0.02	0.22	44	0.02	0.22	40	0.02	0.17	16	0.01	0.02	45	0.01	0.05	42	0.01	0.10

Risk Factor										T-Wall ⁽⁶⁾			Sheet Piling to T-Walls ⁽⁷⁾			Relocations & Right of Way ⁽²⁾		
	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	2%	1	2%	6%	1	1%	6%	1	2%	6%	1	2%	6%
Material Availability/Cost	1	0%	12%	6	1%	10%	6	1%	10%	3	1%	12%	1	0%	12%	1	0%	12%
Scope Definition	4	2%	4%	4	2%	6%	4	2%	6%	2	1%	4%	4	2%	4%	2	2%	4%
Labor Rates/Availability	5	2%	20%	5	2%	20%	5	2%	20%	6	0%	20%	5	2%	20%	1	2%	20%
Weather/Environment	9	2%	16%	9	2%	4%	9	2%	4%	8	2%	16%	9	2%	16%	9	2%	16%
Schedule	7	2%	8%	7	1%	4%	7	1%	4%	7	2%	8%	7	2%	8%	7	2%	20%
Bidding Climate	8	1%	24%	8	1%	36%	8	1%	20%	4	1%	24%	8	1%	32%	10	1%	50%
Fuel Costs	8	2%	24%	8	2%	48%	8	2%	48%	9	4%	24%	8	2%	24%	1	2%	24%
Weighted Average	43	0.02	0.17	48	0.02	0.19	48	0.02	0.17	40	0.02	0.17	43	0.02	0.18	32	0.02	0.27

NOTES

- (1) Primarily Impacted by Weather and Fuel (Transport) Risks; USACE is Mitigating Risk with Large Supplier IDIQ Contracts for Borrow
- (2) Sellers Market for Real Estate; Relocation Unknowns
- (3) Large Fluctuations in Material Costs are the Primary Risks
- (4) Risk to Placing Dolphins & Guidewall Structures Stems from Fluctuating River Levels/ Currents;
- (5) Largely Labor risks related to lack of qualified personnel in the engineering disciplines; escalating cost of living
- (6) T-Wall Cost Risk Tied to Fluctuating Steel (Rebar) Costs and the Transport Costs Associated with Concrete Materials & Product; Labor in Short Supply due to the Magnitude of Construction in Gulf Coast Region
- (7) Steel (Sheet Piling) Limited in Availability; Widely Fluctuating Steel Costs; Large Volume of Projects in Area

ST. BERNARD PARISH FEDERAL FLOOD CONTROL PROJECT
LVP-146 RISK REGISTER

Risk Factor	Flood Wall Armor ⁽¹⁾			Embankment Fill ⁽¹⁾			Levees ⁽¹⁾			Engineering & Design ⁽⁵⁾			Supervision/Administration ⁽⁵⁾					
	Weight	- (%)	+ (%)	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	6%	1	1%	6%	5	2%	4%	2	2%	4%	1	2%	2%
Material Availability/Cost	1	2%	18%	6	2%	24%	3	1%	12%	1	0%	0%	3	0%	5%	6	1%	10%
Scope Definition	4	2%	4%	4	2%	4%	2	1%	4%	3	0%	2%	6	2%	4%	4	2%	6%
Labor Rates/Availability	5	2%	20%	5	2%	20%	6	0%	20%	1	0%	5%	5	2%	5%	5	2%	20%
Weather/Environment	9	2%	16%	9	2%	16%	8	2%	16%	1	0%	0%	9	1%	2%	9	2%	4%
Schedule	2	2%	8%	2	2%	8%	7	2%	8%	3	0%	0%	10	1%	5%	7	1%	4%
Bidding Climate	7	1%	32%	7	1%	32%	4	1%	32%	1	0%	0%	8	2%	10%	8	1%	36%
Fuel Costs	10	4%	32%	10	4%	32%	9	4%	20%	1	0%	4%	2	2%	8%	8	23%	48%
Weighted Average	39	0.02	0.22	44	0.02	0.22	40	0.02	0.17	16	0.01	0.02	45	0.01	0.05	48	0.05	0.19

Risk Factor				A36 Steel Piles ⁽³⁾						T-Wall ⁽⁶⁾			Sheet Piling to T-Walls ⁽⁷⁾			Relocations ⁽²⁾		
	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	2%	1	2%	6%	1	1%	6%	1	2%	6%	1	2%	6%
Material Availability/Cost	1	0%	12%	6	1%	10%	6	1%	10%	3	1%	12%	1	0%	12%	1	0%	12%
Scope Definition	4	2%	4%	4	2%	6%	4	2%	6%	2	1%	4%	4	2%	4%	4	2%	4%
Labor Rates/Availability	5	2%	20%	5	2%	20%	5	2%	20%	6	0%	20%	5	2%	20%	5	2%	20%
Weather/Environment	9	2%	16%	9	2%	4%	9	2%	4%	8	2%	16%	9	2%	16%	9	2%	16%
Schedule	7	2%	8%	7	1%	4%	7	1%	4%	7	2%	8%	7	2%	8%	7	2%	8%
Bidding Climate	8	1%	24%	8	1%	36%	8	1%	20%	4	1%	24%	8	1%	32%	10	1%	50%
Fuel Costs	8	2%	24%	8	23%	48%	8	2%	48%	9	4%	24%	8	2%	24%	8	12%	24%
Weighted Average	43	0.02	0.17	48	0.05	0.19	48	0.02	0.17	40	0.02	0.17	43	0.02	0.18	45	0.04	0.23

NOTES

- (1) Primarily Impacted by Weather and Fuel (Transport) Risks; USACE is Mitigating Risk with Large Supplier IDIQ Contracts for Borrow
- (2) Sellers Market for Real Estate; Relocation Unknowns
- (3) Large Fluctuations in Material Costs are the Primary Risks; Large volume of Work impacting Labor Availability & Costs
- (4) Risk to Placing Dolphins & Guidewall Structures Stems from Fluctuating River Levels/ Currents;
- (5) Largely Labor risks related to lack of qualified personnel in the engineering disciplines; escalating cost of living
- (6) T-Wall Cost Risk Tied to Fluctuating Steel (Rebar) Costs and the Transport Costs Associated with Concrete Materials & Product; Labor in Short Supply due to the Magnitude of Construction in Gulf Coast Region
- (7) Steel (Sheet Piling) Limited in Availability; Widely Fluctuating Steel Costs; Large Volume of Projects in Area

ST. BERNARD PARISH FEDERAL FLOOD CONTROL PROJECT
LVP-148 RISK REGISTER

Risk Factor	Flood Wall Armor ⁽¹⁾			Embankment Fill ⁽¹⁾			Levees			Engineering & Design ⁽⁵⁾			Supervision/Administration ⁽⁵⁾			Dolphins ⁽³⁾		
	Weight	- (%)	+ (%)	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	6%	1	1%	6%	5	2%	4%	2	2%	4%	1	2%	2%
Material Availability/Cost	1	2%	18%	6	2%	24%	3	1%	12%	1	0%	0%	3	0%	5%	6	1%	10%
Scope Definition	4	2%	4%	4	2%	4%	2	1%	4%	3	0%	2%	6	2%	4%	4	2%	6%
Labor Rates/Availability	5	2%	20%	5	2%	20%	6	0%	20%	1	0%	5%	5	2%	5%	5	2%	20%
Weather/Environment	9	2%	16%	9	2%	16%	8	2%	16%	1	0%	0%	9	1%	2%	9	2%	4%
Schedule	2	2%	8%	2	2%	8%	7	2%	8%	3	0%	0%	10	1%	5%	7	1%	4%
Bidding Climate	7	1%	32%	7	1%	32%	4	1%	32%	1	0%	0%	8	2%	10%	8	1%	36%
Fuel Costs	10	4%	32%	10	4%	32%	9	4%	20%	1	0%	4%	2	2%	8%	8	23%	48%
Weighted Average	39	0.02	0.22	44	0.02	0.22	40	0.02	0.17	16	0.01	0.02	45	0.01	0.05	48	0.05	0.19

Risk Factor	A36 Pipe Piles ⁽³⁾			T-Wall ⁽⁶⁾			Sheet Piling to T-Walls ⁽⁷⁾			Relocations								
	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+			
Permitting/Permits	1	2%	6%	1	2%	2%	1	2%	6%	1	2%	6%	1	2%	6%			
Material Availability/Cost	1	0%	12%	6	1%	10%	6	1%	10%	3	1%	12%	1	0%	12%			
Scope Definition	4	2%	4%	4	2%	6%	4	2%	6%	2	1%	4%	4	2%	4%			
Labor Rates/Availability	5	2%	20%	5	2%	20%	5	2%	20%	6	0%	20%	5	2%	20%			
Weather/Environment	9	2%	16%	9	2%	4%	9	2%	4%	8	2%	16%	9	2%	16%			
Schedule	7	2%	8%	7	1%	4%	7	1%	4%	7	2%	8%	7	2%	8%			
Bidding Climate	8	1%	24%	8	1%	36%	8	1%	20%	4	1%	24%	8	1%	32%			
Fuel Costs	8	2%	24%	8	23%	48%	8	2%	48%	9	4%	24%	8	2%	24%			
Weighted Average	43	0.02	0.17	48	0.05	0.19	48	0.02	0.17	40	0.02	0.17	43	0.02	0.18	45	0.04	0.12

NOTES

- (1) Primarily Impacted by Weather and Fuel (Transport) Risks; USACE is Mitigating Risk with Large Supplier IDIQ Contracts for Borrow
- (2) Sellers Market for Real Estate; Relocation Unknowns
- (3) Large Fluctuations in Material Costs are the Primary Risks; Large volume of Work impacting Labor Availability & Costs
- (4) Risk to Placing Dolphins & Guidewall Structures Stems from Fluctuating River Levels/ Currents;
- (5) Largely Labor risks related to lack of qualified personnel in the engineering disciplines; escalating cost of living
- (6) T-Wall Cost Risk Tied to Fluctuating Steel (Rebar) Costs and the Transport Costs Associated with Concrete Materials & Product; Labor in Short Supply due to the Magnitude of Construction in Gulf Coast Region
- (7) Steel (Sheet Piling) Limited in Availability; Widely Fluctuating Steel Costs; Large Volume of Projects in Area

ST. BERNARD PARISH FEDERAL FLOOD CONTROL PROJECT
LVP-149 RISK REGISTER

Risk Factor	Levees ⁽¹⁾									Engineering & Design ⁽⁵⁾			Supervision/Administration ⁽⁵⁾					
	Weight	- (%)	+ (%)	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	6%	1	1%	6%	5	2%	4%	2	2%	4%	3	1%	2%
Material Availability/Cost	1	2%	18%	6	2%	24%	3	1%	12%	1	0%	0%	3	0%	5%	4	2%	9%
Scope Definition	4	2%	4%	4	2%	4%	2	1%	4%	3	0%	2%	6	2%	4%	4	0%	4%
Labor Rates/Availability	5	2%	20%	5	2%	20%	6	0%	20%	1	0%	5%	5	2%	5%	5	0%	12%
Weather/Environment	9	2%	16%	9	2%	16%	8	2%	16%	1	0%	0%	9	1%	2%	9	0%	9%
Schedule	2	2%	8%	2	2%	8%	7	2%	8%	3	0%	0%	10	1%	5%	2	2%	8%
Bidding Climate	7	1%	32%	7	1%	32%	4	1%	32%	1	0%	0%	8	2%	10%	7	1%	15%
Fuel Costs	10	4%	32%	10	4%	32%	9	4%	20%	1	0%	4%	2	2%	8%	8	2%	12%
Weighted Average	39	0.02	0.22	44	0.02	0.22	40	0.02	0.17	16	0.01	0.02	45	0.01	0.05	42	0.01	0.10

Risk Factor	Relocations and ROW ⁽⁷⁾			Flood Gates ⁽⁵⁾						T-Wall ⁽⁶⁾			Sheet Piling to T-Walls ⁽⁷⁾			A-36 Steel Piles		
	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Permitting/Permits	1	2%	6%	1	2%	2%	1	2%	6%	1	1%	6%	1	2%	6%	1	2%	6%
Material Availability/Cost	1	0%	1%	6	1%	30%	6	1%	10%	3	1%	25%	1	0%	30%	1	0%	30%
Scope Definition	4	2%	10%	4	2%	6%	4	2%	6%	2	1%	4%	4	2%	4%	4	2%	4%
Labor Rates/Availability	5	2%	20%	5	2%	20%	5	2%	20%	6	0%	20%	5	2%	20%	5	2%	20%
Weather/Environment	9	2%	4%	9	2%	4%	9	2%	4%	8	2%	16%	9	2%	16%	9	2%	16%
Schedule	7	2%	8%	7	1%	4%	7	1%	4%	7	2%	8%	7	2%	8%	7	2%	8%
Bidding Climate	8	1%	50%	8	1%	36%	8	1%	20%	4	3%	36%	8	3%	32%	8	3%	32%
Fuel Costs	4	2%	24%	8	2%	48%	8	2%	48%	9	4%	48%	8	2%	24%	8	2%	24%
Weighted Average	39	0.02	0.19	48	0.02	0.22	48	0.02	0.17	40	0.02	0.24	43	0.02	0.19	43	0.02	0.19

NOTES

- (1) Primarily Impacted by Weather and Fuel (Transport) Risks
- (2) Primarily Impacted by Weather and Fuel (Transport) Risks
- (3) Large Fluctuations in Material Costs are the Primary Risks
- (4) Risk to Placing Dolphins & Guidewall Structures Stems from Fluctuating River Levels/ Currents;
- (5) Sector Gate and Pontoon Bridge Components Risks include Fabricator non-Interest, and Steel & Transport Costs
- (6) T-Wall Cost Risk Tied to Fluctuating Steel (Rebar) Costs and the Transport Costs Associated with Concrete Materials & Product; Labor in Short Supply due to the Magnitude of Construction in Gulf Coast Region
- (7) Steel (Cofferdam and Sheet Piling) Limited in Availability; Widely Fluctuating Steel Costs; Marine Installation has a Limited Pool of Contractors

ST. BERNARD PARISH FEDERAL FLOOD CONTROL PROJECT
LVP-145 RISK REGISTER

Risk Factor	Engineering & Design			Permits			Real Estate Acquisition		
	Weight	- (%)	+ (%)	Weight	-	+	Weight	-	+
Work Restrictions	1	2%	6%	1	2%	6%	1	1%	4%
Community Concerns	1	2%	18%	6	2%	24%	9	1%	50%
Scope Definition	4	2%	4%	4	2%	4%	2	1%	12%
Labor Availability	5	2%	20%	5	2%	20%	1	1%	2%
Criteria Changes	9	2%	16%	9	2%	16%	5	2%	16%
Market Factors	2	2%	8%	2	2%	8%	10	2%	30%
Competing Projects	7	1%	32%	7	1%	32%	1	1%	4%
Reviews and Acceptance	10	4%	32%	10	4%	32%	7	4%	20%
Weighted Average	39	0.02	0.22	44	0.02	0.22	36	0.02	0.28

Risk Factor	Mobilization & Access			Relocations			Clear/Grub/Rip Rap			Sheet Piling to T-Walls			A-36 Piles			T-Wall Construction		
	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Work Restrictions	6	2%	6%	6	2%	24%	1	2%	6%	3	1%	33%	3	1%	33%	3	1%	33%
Material Availability	1	0%	12%	6	4%	12%	4	1%	12%	8	1%	48%	8	1%	48%	8	1%	12%
Scope Definition	2	2%	4%	8	2%	18%	4	2%	6%	2	1%	12%	2	1%	12%	2	1%	6%
Labor Availability	5	2%	12%	5	2%	20%	5	2%	20%	6	2%	20%	6	2%	20%	6	2%	24%
Weather/Environment	9	2%	33%	9	2%	33%	10	2%	12%	8	2%	24%	8	2%	24%	8	2%	48%
Equipment Availability	7	2%	8%	7	2%	8%	9	4%	24%	7	2%	20%	7	2%	20%	7	2%	16%
Competing Projects	8	1%	24%	4	1%	12%	8	1%	8%	4	2%	24%	4	2%	24%	4	2%	24%
Haul Distance	1	2%	4%	1	2%	4%	8	2%	48%	9	2%	6%	9	2%	6%	9	2%	24%
Weighted Average	39	0.02	0.17	46	0.02	0.19	49	0.02	0.20	47	0.02	0.24	47	0.02	0.24	47	0.02	0.25

NOTES

- (1) Primarily Impacted by Weather and Fuel (Transport) Risks; USACE is Mitigating Risk with Large Supplier IDIQ Contracts for Borrow
- (2) Sellers Market for Real Estate; Relocation Unknowns
- (3) Large Fluctuations in Material Costs are the Primary Risks
- (4) Risk to Placing Dolphins & Guidewall Structures Stems from Fluctuating River Levels/ Currents;
- (5) Largely Labor risks related to lack of qualified personnel in the engineering disciplines; escalating cost of living
- (6) T-Wall Cost Risk Tied to Fluctuating Steel (Rebar) Costs and the Transport Costs Associated with Concrete Materials & Product; Labor in Short Supply due to the Magnitude of Construction in Gulf Coast Region
- (7) Steel (Sheet Piling) Limited in Availability; Widely Fluctuating Steel Costs; Large Volume of Projects in Area

ST. BERNARD PARISH FEDERAL FLOOD CONTROL PROJECT
LVP-149 RISK REGISTER

Risk Factor	Engineering & Design			Permits			Real Estate Acquisition		
	Weight	- (%)	+ (%)	Weight	-	+	Weight	-	+
Work Restrictions	1	2%	6%	1	2%	6%	1	1%	4%
Community Concerns	1	2%	18%	6	2%	24%	9	1%	50%
Scope Definition	4	2%	4%	4	2%	4%	2	1%	12%
Labor Availability	5	2%	20%	5	2%	20%	1	1%	2%
Criteria Changes	9	2%	16%	9	2%	16%	5	2%	16%
Market Factors	2	2%	8%	2	2%	8%	10	2%	30%
Competing Projects	7	1%	32%	7	1%	32%	1	1%	4%
Reviews and Acceptance	10	4%	32%	10	4%	32%	7	4%	20%
Weighted Average	39	0.02	0.22	44	0.02	0.22	36	0.02	0.28

Risk Factor	Mobilization & Access			Relocations			Clear/Grub/Rip Rap			Sheet Piling to T-Walls			A-36 Piles			T-Wall Construction		
	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+	Weight	-	+
Work Restrictions	6	2%	6%	6	2%	24%	1	2%	6%	3	1%	33%	3	1%	33%	3	1%	33%
Material Availability	1	0%	12%	6	4%	12%	4	1%	12%	8	1%	48%	8	1%	48%	8	1%	12%
Scope Definition	2	2%	4%	8	2%	18%	4	2%	6%	2	1%	12%	2	1%	12%	2	1%	6%
Labor Availability	5	2%	12%	5	2%	20%	5	2%	20%	6	2%	20%	6	2%	20%	6	2%	24%
Weather/Environment	9	2%	33%	9	2%	33%	10	2%	12%	8	2%	24%	8	2%	24%	8	2%	48%
Equipment Availability	7	2%	8%	7	2%	8%	9	4%	24%	7	2%	20%	7	2%	20%	7	2%	16%
Competing Projects	8	1%	24%	4	1%	12%	8	1%	8%	4	2%	24%	4	2%	24%	4	2%	24%
Haul Distance	1	2%	4%	1	2%	4%	8	2%	48%	9	2%	6%	9	2%	6%	9	2%	24%
Weighted Average	39	0.02	0.17	46	0.02	0.19	49	0.02	0.20	47	0.02	0.24	47	0.02	0.24	47	0.02	0.25

NOTES

- (1) Primarily Impacted by Weather and Fuel (Transport) Risks; USACE is Mitigating Risk with Large Supplier IDIQ Contracts for Borrow
- (2) Sellers Market for Real Estate; Relocation Unknowns
- (3) Large Fluctuations in Material Costs are the Primary Risks
- (4) Risk to Placing Dolphins & Guidewall Structures Stems from Fluctuating River Levels/ Currents;
- (5) Largely Labor risks related to lack of qualified personnel in the engineering disciplines; escalating cost of living
- (6) T-Wall Cost Risk Tied to Fluctuating Steel (Rebar) Costs and the Transport Costs Associated with Concrete Materials & Product; Labor in Short Supply due to the Magnitude of Construction in Gulf Coast Region
- (7) Steel (Sheet Piling) Limited in Availability; Widely Fluctuating Steel Costs; Large Volume of Projects in Area

LPV 145 to 149 Risk Analysis

Simulation started on 9/12/2008 at 12:04:17

Simulation stopped on 9/12/2008 at 12:04:36

Run preferences:

Number of trials run	10,000
Monte Carlo	
Random seed	
Precision control on	
Confidence level	95.00%

Run statistics:

Total running time (sec)	19.68
Trials/second (average)	508
Random numbers per sec	16,768

Crystal Ball data:

Assumptions	33
Correlations	0
Correlated groups	0
Decision variables	0
Forecasts	4

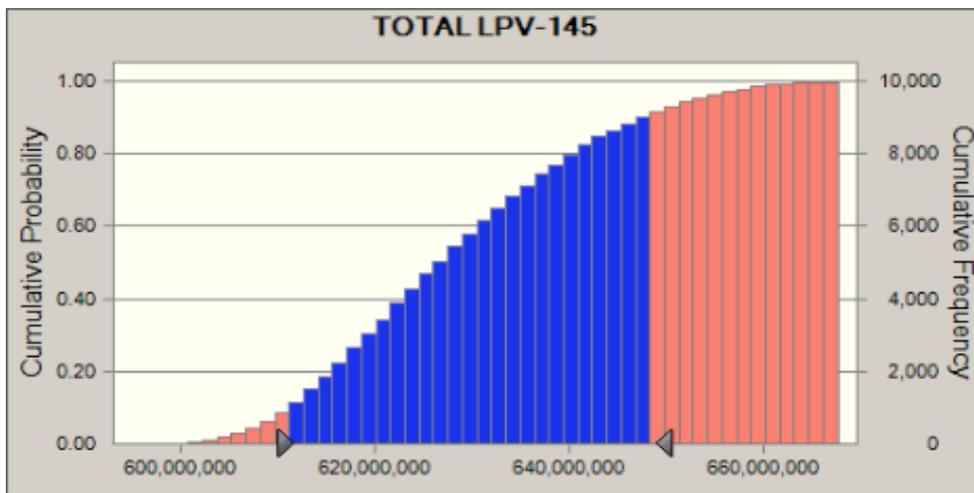
Forecasts

Forecast: TOTAL LPV-145

Cell: I4

Summary:

Certainty level is 80.00%
 Certainty range is from 611,802,376 to 648,449,655
 Entire range is from 594,849,955 to 672,722,551
 Base case is 598,537,929
 After 10,000 trials, the std. error of the mean is 138,481



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	628,813,948	271,419
Median	627,361,155	405,503
Mode	---	
Standard Deviation	13,848,137	171,254
Variance		
Skewness	0.4159	
Kurtosis	2.59	
Coeff. of Variability	0.0220	
Minimum	594,849,955	
Maximum	672,722,551	
Range Width	77,872,595	
Mean Std. Error	138,481	

Forecast: TOTAL LPV-145 (cont'd)**Cell: I4**

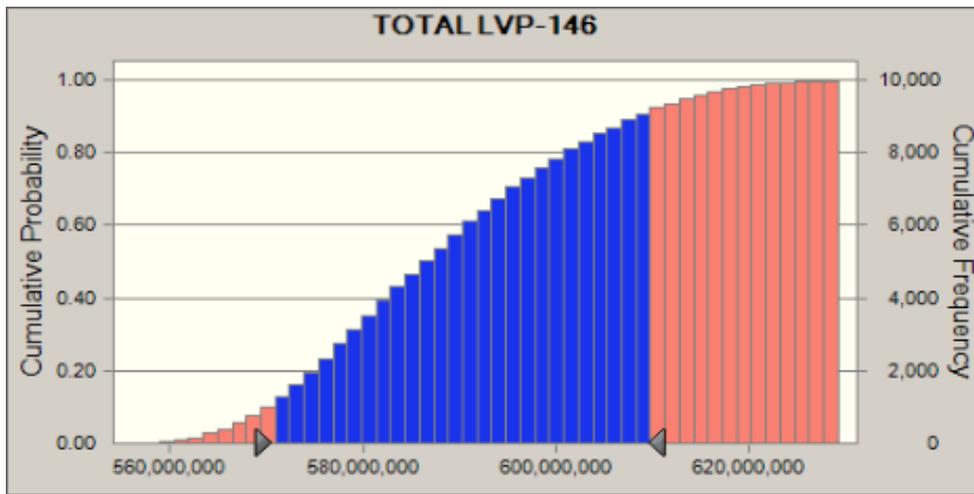
Percentiles:	Forecast values	Precision
0%	594,849,955	
10%	611,802,376	334,525
20%	616,260,348	329,282
30%	619,886,090	327,039
40%	623,602,426	350,768
50%	627,359,353	405,503
60%	631,320,046	390,175
70%	635,798,830	421,931
80%	640,976,936	395,303
90%	648,449,655	579,187
100%	672,722,551	

Forecast: TOTAL LVP-146

Cell: I3

Summary:

Certainty level is 80.00%
 Certainty range is from 570,827,372 to 609,104,749
 Entire range is from 555,975,535 to 642,588,012
 Base case is 564,832,052
 After 10,000 trials, the std. error of the mean is 144,512



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	588,656,933	283,238
Median	587,254,977	415,741
Mode	---	
Standard Deviation	14,451,190	175,281
Variance		
Skewness	0.3814	
Kurtosis	2.53	
Coeff. of Variability	0.0245	
Minimum	555,975,535	
Maximum	642,588,012	
Range Width	86,612,477	
Mean Std. Error	144,512	

Forecast: TOTAL LVP-146 (cont'd)**Cell: I3**

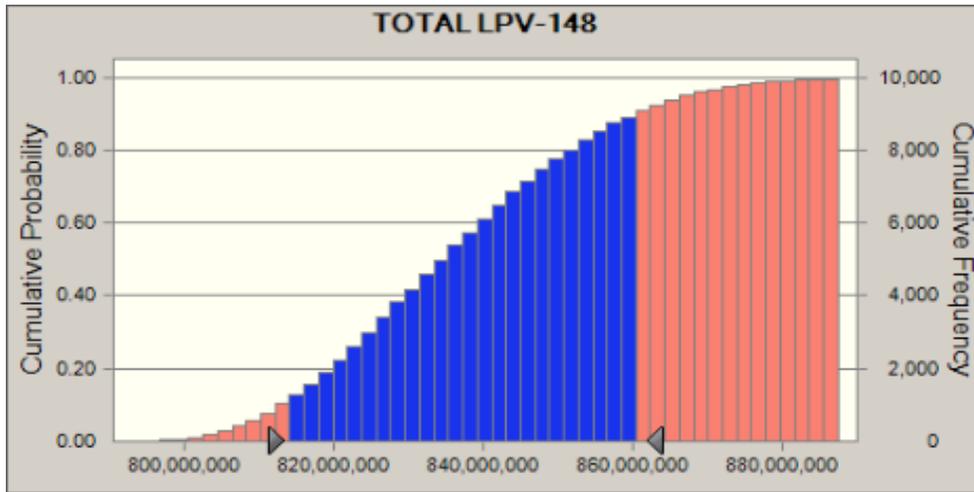
Percentiles:	Forecast values	Precision
0%	555,975,535	
10%	570,827,372	322,610
20%	575,454,304	240,474
30%	579,318,288	311,101
40%	583,039,798	431,802
50%	587,253,201	415,741
60%	591,390,347	410,740
70%	595,993,151	378,148
80%	601,706,709	472,437
90%	609,104,749	474,750
100%	642,588,012	

Forecast: TOTAL LPV-148

Cell: I3

Summary:

Certainty level is 80.00%
 Certainty range is from 813,859,556 to 861,359,896
 Entire range is from 792,820,705 to 898,535,337
 Base case is 802,245,575
 After 10,000 trials, the std. error of the mean is 181,077



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	836,772,874	354,904
Median	835,461,044	418,856
Mode	---	
Standard Deviation	18,107,655	231,759
Variance		
Skewness	0.3437	
Kurtosis	2.71	
Coeff. of Variability	0.0216	
Minimum	792,820,705	
Maximum	898,535,337	
Range Width	105,714,632	
Mean Std. Error	181,077	

Forecast: TOTAL LPV-148 (cont'd)**Cell: I3**

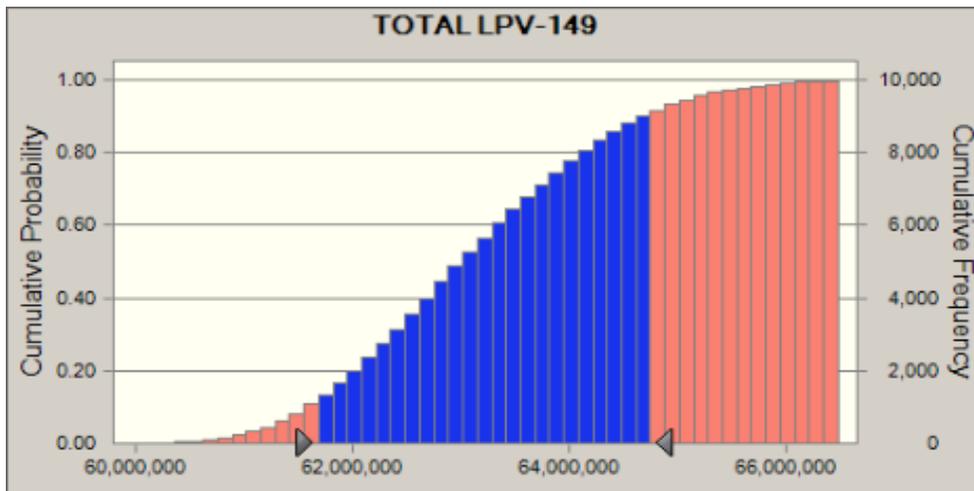
Percentiles:	Forecast values	Precision
0%	792,820,705	
10%	813,859,556	409,749
20%	820,595,997	482,695
30%	825,720,215	462,775
40%	830,476,571	473,673
50%	835,460,599	418,856
60%	840,683,681	445,202
70%	845,988,447	463,522
80%	852,569,364	588,336
90%	861,359,896	713,127
100%	898,535,337	

Forecast: TOTAL LPV-149

Cell: I3

Summary:

Certainty level is 80.00%
 Certainty range is from 61,655,129 to 64,761,580
 Entire range is from 59,957,587 to 67,720,481
 Base case is 60,055,324
 After 10,000 trials, the std. error of the mean is 11,899



Statistics:	Forecast values
Trials	10,000
Mean	63,150,568
Median	63,063,512
Mode	---
Standard Deviation	1,189,873
Variance	
Skewness	0.2867
Kurtosis	2.69
Coeff. of Variability	0.0188
Minimum	59,957,587
Maximum	67,720,481
Range Width	7,762,894
Mean Std. Error	11,899

Forecast: TOTAL LPV-149 (cont'd)

Cell: I3

Percentiles:	Forecast values
0%	59,957,587
10%	61,655,129
20%	62,089,202
30%	62,437,452
40%	62,754,917
50%	63,063,497
60%	63,406,677
70%	63,766,349
80%	64,192,299
90%	64,761,580
100%	67,720,481

End of Forecasts

Forecasts

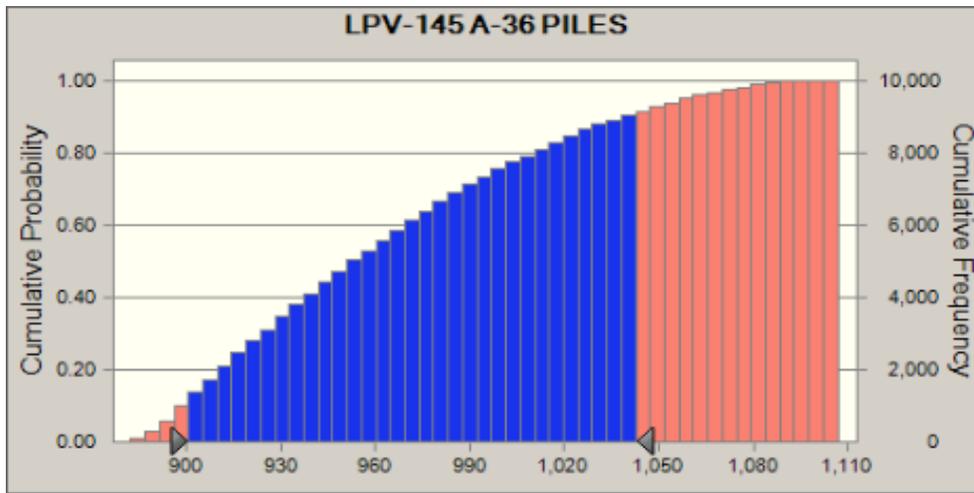
Worksheet: [LPV-145-149Schedule.xls]Schedule Model LPV145, 146, 148

Forecast: LPV-145 A-36 PILES

Cell: I21

Summary:

- Certainty level is 80.00%
- Certainty range is from 901 to 1,042
- Entire range is from 883 to 1,107
- Base case is 897
- After 10,000 trials, the std. error of the mean is 1



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	964	1
Median	955	1
Mode	---	
Standard Deviation	52	1
Variance	2,726	
Skewness	0.5343	
Kurtosis	2.37	
Coeff. of Variability	0.0542	
Minimum	883	
Maximum	1,107	
Range Width	224	
Mean Std. Error	1	

Forecast: LPV-145 A-36 PILES (cont'd)

Cell: I21

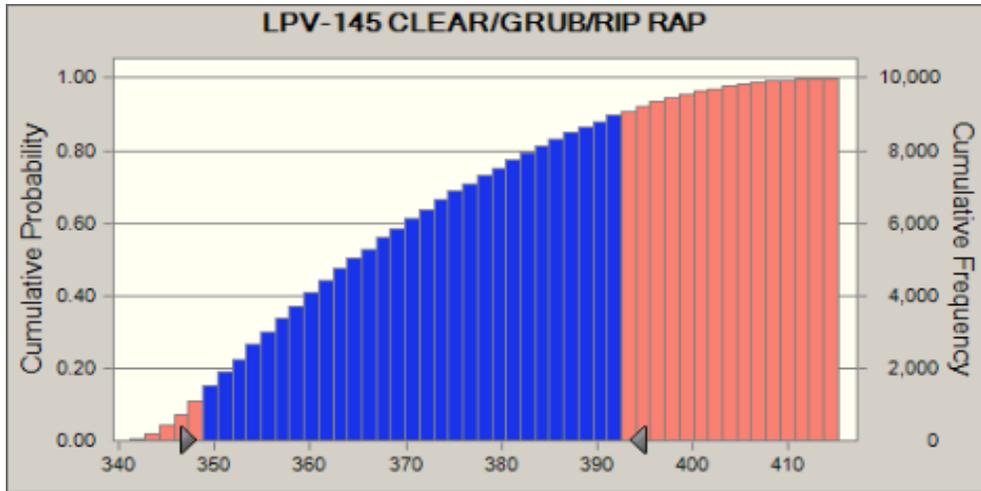
Percentiles:	Forecast values	Precision
0%	883	
10%	901	1
20%	913	1
30%	927	1
40%	941	1
50%	955	1
60%	972	1
70%	990	2
80%	1,013	2
90%	1,042	2
100%	1,107	

Forecast: LPV-145 CLEAR/GRUB/RIP RAP

Cell: I17

Summary:

Certainty level is 80.00%
 Certainty range is from 348 to 393
 Entire range is from 341 to 416
 Base case is 348
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	368	0
Median	365	0
Mode	---	
Standard Deviation	17	0
Variance	282	
Skewness	0.5442	
Kurtosis	2.39	
Coeff. of Variability	0.0456	
Minimum	341	
Maximum	416	
Range Width	75	
Mean Std. Error	0	

Forecast: LPV-145 CLEAR/GRUB/RIP RAP (cont'd)

Cell: I17

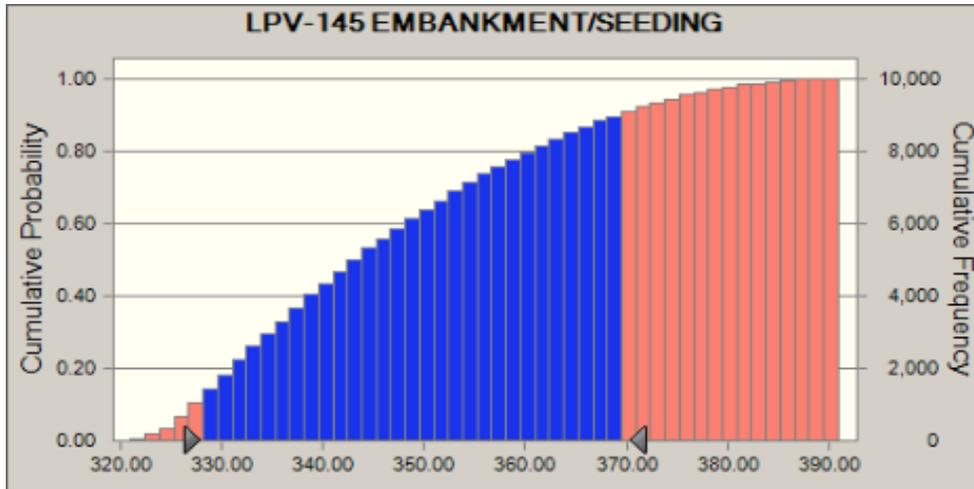
Percentiles:	Forecast values	Precision
0%	341	
10%	348	0
20%	352	0
30%	356	0
40%	360	0
50%	365	0
60%	371	1
70%	377	1
80%	384	1
90%	393	1
100%	416	

Forecast: LPV-145 EMBANKMENT/SEEDING

Cell: I25

Summary:

Certainty level is 80.00%
 Certainty range is from 328.11 to 369.92
 Entire range is from 321.06 to 391.62
 Base case is 328.00
 After 10,000 trials, the std. error of the mean is 0.16



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	346.69	0.31
Median	343.98	0.39
Mode	---	
Standard Deviation	15.78	0.19
Variance	248.99	
Skewness	0.5655	
Kurtosis	2.44	
Coeff. of Variability	0.0455	
Minimum	321.06	
Maximum	391.62	
Range Width	70.56	
Mean Std. Error	0.16	

Forecast: LPV-145 EMBANKMENT/SEEDING (cont'd)

Cell: I25

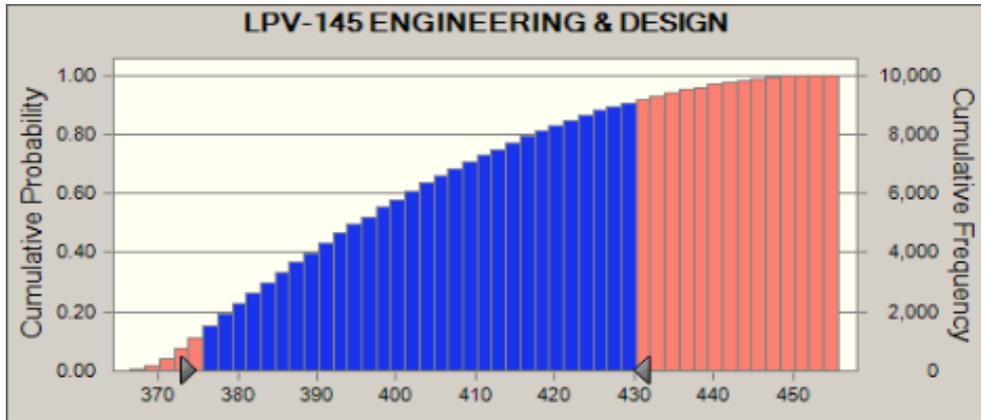
Percentiles:	Forecast values	Precision
0%	321.06	
10%	328.11	0.18
20%	331.70	0.25
30%	335.56	0.37
40%	339.56	0.35
50%	343.98	0.39
60%	348.92	0.46
70%	354.51	0.52
80%	361.29	0.56
90%	369.92	0.56
100%	391.62	

Forecast: LPV-145 ENGINEERING & DESIGN

Cell: I6

Summary:

Certainty level is 80.00%
 Certainty range is from 375 to 429
 Entire range is from 367 to 456
 Base case is 375
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	399	0
Median	396	1
Mode	---	
Standard Deviation	20	0
Variance	412	
Skewness	0.5307	
Kurtosis	2.38	
Coeff. of Variability	0.0508	
Minimum	367	
Maximum	456	
Range Width	89	
Mean Std. Error	0	

Forecast: LPV-145 ENGINEERING & DESIGN (cont'd)

Cell: I6

Percentiles:	Forecast values	Precision
0%	367	
10%	375	0
20%	380	0
30%	385	0
40%	390	0
50%	396	1
60%	402	1
70%	410	1
80%	418	1
90%	429	1
100%	456	

Forecast: LPV-145 MOBILIZATION & ACCESS (cont'd)

Cell: I13

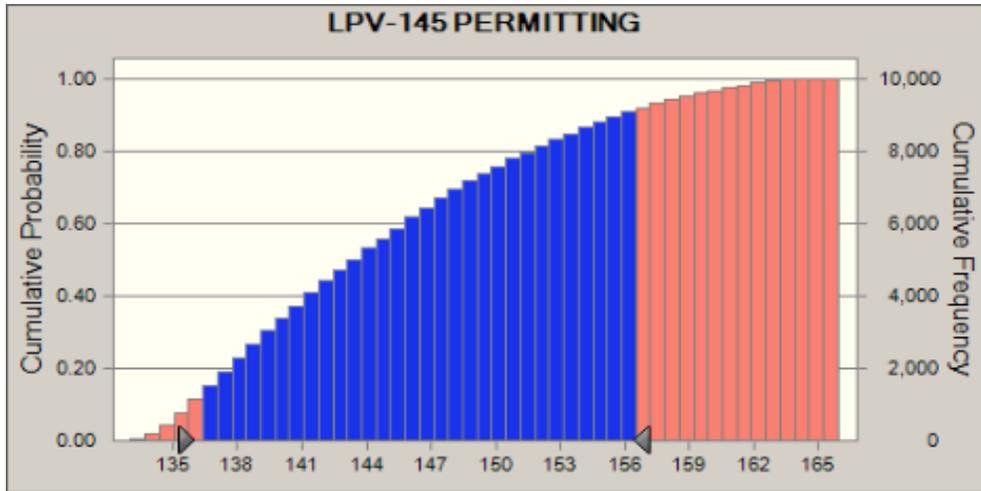
Percentiles:	Forecast values	Precision
0%	16	
10%	16	0
20%	16	0
30%	16	0
40%	17	0
50%	17	0
60%	17	0
70%	17	0
80%	17	0
90%	18	0
100%	19	

Forecast: LPV-145 PERMITTING

Cell: I8

Summary:

Certainty level is 80.00%
 Certainty range is from 136 to 156
 Entire range is from 133 to 166
 Base case is 136
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	145	0
Median	144	0
Mode	---	
Standard Deviation	7	0
Variance	56	
Skewness	0.5640	
Kurtosis	2.42	
Coeff. of Variability	0.0516	
Minimum	133	
Maximum	166	
Range Width	33	
Mean Std. Error	0	

Forecast: LPV-145 PERMITTING (cont'd)

Cell: I8

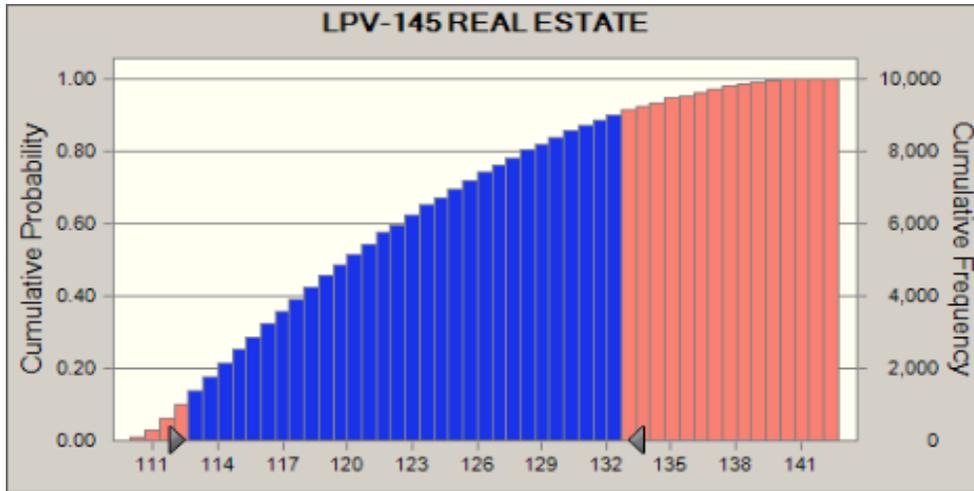
Percentiles:	Forecast values	Precision
0%	133	
10%	136	0
20%	138	0
30%	140	0
40%	142	0
50%	144	0
60%	146	0
70%	149	0
80%	152	0
90%	156	0
100%	166	

Forecast: LPV-145 REAL ESTATE

Cell: I10

Summary:

Certainty level is 80.00%
 Certainty range is from 113 to 133
 Entire range is from 110 to 143
 Base case is 112
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	122	0
Median	120	0
Mode	---	
Standard Deviation	8	0
Variance	57	
Skewness	0.5503	
Kurtosis	2.39	
Coeff. of Variability	0.0619	
Minimum	110	
Maximum	143	
Range Width	33	
Mean Std. Error	0	

Forecast: LPV-145 REAL ESTATE (cont'd)

Cell: I10

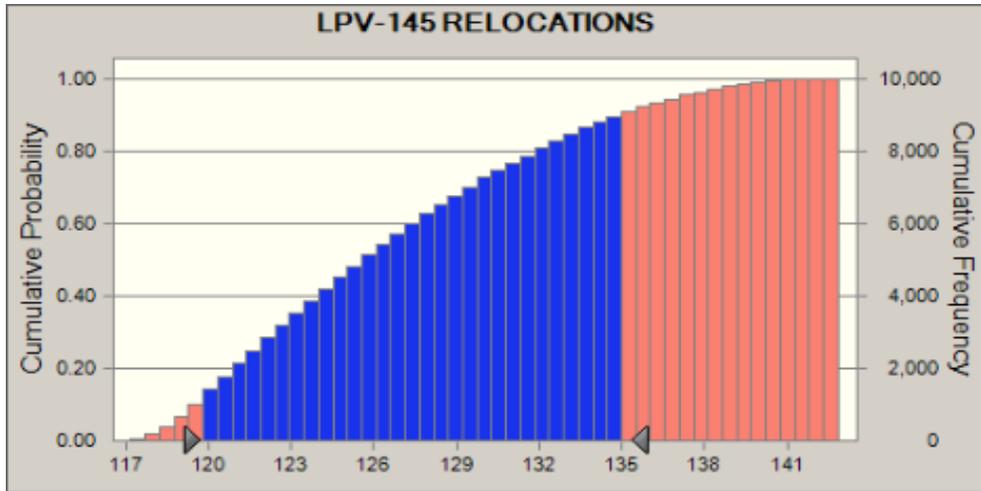
Percentiles:	Forecast values	Precision
0%	110	
10%	113	0
20%	114	0
30%	116	0
40%	118	0
50%	120	0
60%	123	0
70%	125	0
80%	129	0
90%	133	0
100%	143	

Forecast: LPV-145 RELOCATIONS

Cell: I15

Summary:

Certainty level is 80.00%
 Certainty range is from 120 to 135
 Entire range is from 117 to 143
 Base case is 120
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	127	0
Median	126	0
Mode	---	
Standard Deviation	6	0
Variance	33	
Skewness	0.4975	
Kurtosis	2.35	
Coeff. of Variability	0.0456	
Minimum	117	
Maximum	143	
Range Width	26	
Mean Std. Error	0	

Forecast: LPV-145 RELOCATIONS (cont'd)

Cell: I15

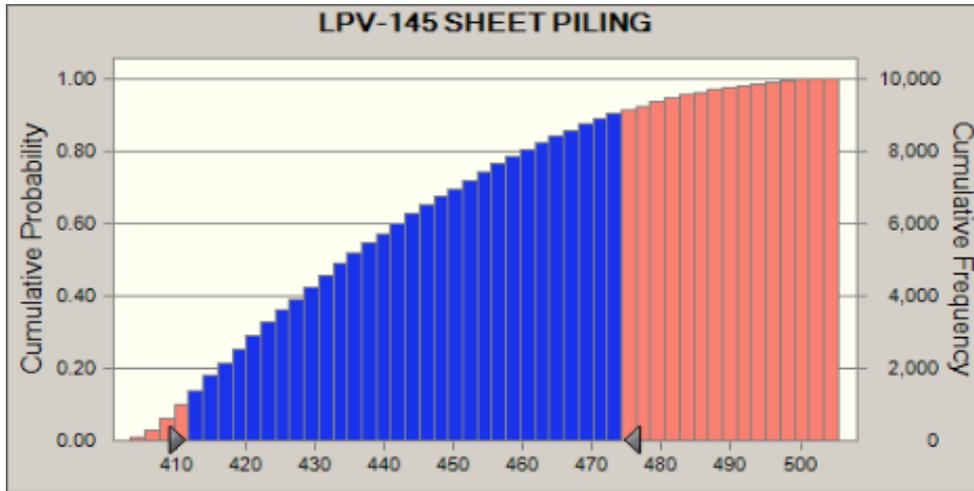
Percentiles:	Forecast values	Precision
0%	117	
10%	120	0
20%	121	0
30%	123	0
40%	124	0
50%	126	0
60%	128	0
70%	130	0
80%	132	0
90%	135	0
100%	143	

Forecast: LPV-145 SHEET PILING

Cell: I19

Summary:

Certainty level is 80.00%
 Certainty range is from 412 to 474
 Entire range is from 403 to 506
 Base case is 410
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	440	0
Median	435	1
Mode	---	
Standard Deviation	24	0
Variance	552	
Skewness	0.5754	
Kurtosis	2.45	
Coeff. of Variability	0.0535	
Minimum	403	
Maximum	506	
Range Width	102	
Mean Std. Error	0	

Forecast: LPV-145 SHEET PILING (cont'd)

Cell: I19

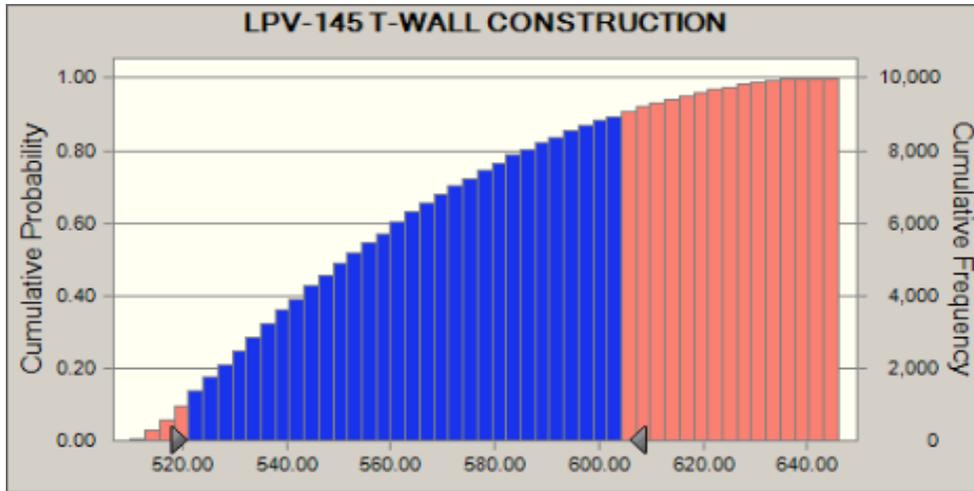
Percentiles:	Forecast values	Precision
0%	403	
10%	412	0
20%	417	0
30%	423	0
40%	429	1
50%	435	1
60%	443	1
70%	452	1
80%	461	1
90%	474	1
100%	506	

Forecast: LPV-145 T-WALL CONSTRUCTION

Cell: I23

Summary:

Certainty level is 80.00%
 Certainty range is from 521.44 to 605.08
 Entire range is from 510.10 to 646.51
 Base case is 519.00
 After 10,000 trials, the std. error of the mean is 0.31



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	558.35	0.61
Median	552.79	0.85
Mode	---	
Standard Deviation	31.23	0.37
Variance	975.43	
Skewness	0.5828	
Kurtosis	2.44	
Coeff. of Variability	0.0559	
Minimum	510.10	
Maximum	646.51	
Range Width	136.40	
Mean Std. Error	0.31	

Forecast: LPV-145 T-WALL CONSTRUCTION (cont'd)

Cell: I23

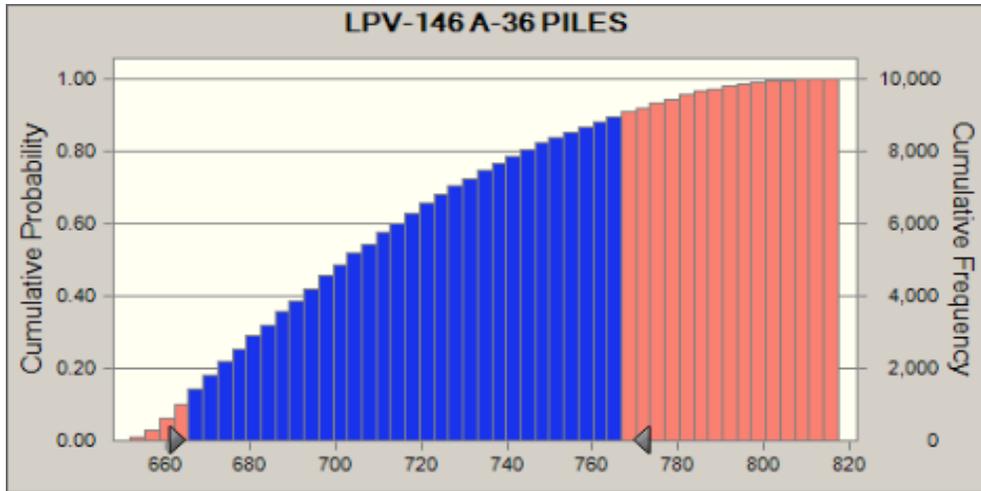
Percentiles:	Forecast values	Precision
0%	510.10	
10%	521.44	0.38
20%	528.67	0.58
30%	536.08	0.59
40%	544.05	0.73
50%	552.79	0.85
60%	562.62	0.77
70%	573.62	1.08
80%	587.26	1.14
90%	605.08	0.97
100%	646.51	

Forecast: LPV-146 A-36 PILES

Cell: I45

Summary:

Certainty level is 80.00%
 Certainty range is from 666 to 768
 Entire range is from 652 to 817
 Base case is 663
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	711	1
Median	704	1
Mode	---	
Standard Deviation	38	0
Variance	1,453	
Skewness	0.5645	
Kurtosis	2.40	
Coeff. of Variability	0.0536	
Minimum	652	
Maximum	817	
Range Width	165	
Mean Std. Error	0	

Forecast: LPV-146 A-36 PILES (cont'd)

Cell: I45

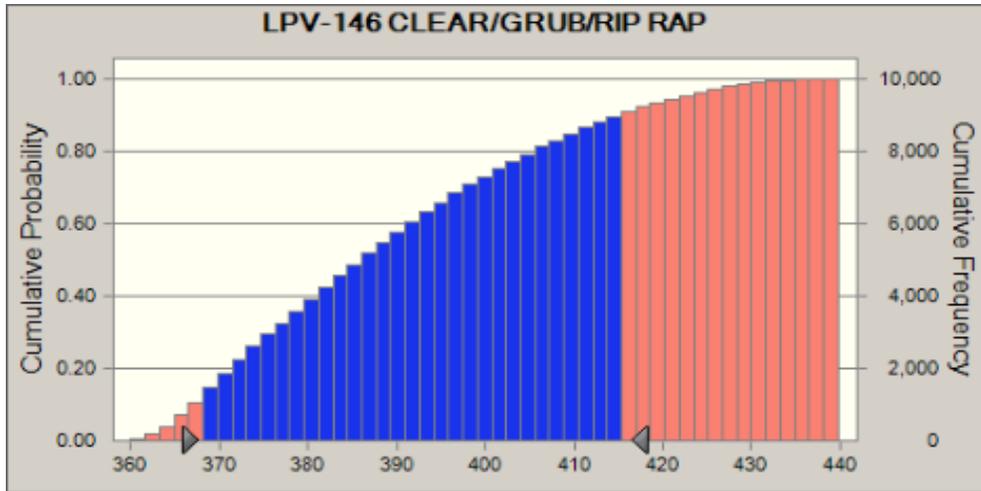
Percentiles:	Forecast values	Precision
0%	652	
10%	666	0
20%	674	1
30%	683	1
40%	694	1
50%	704	1
60%	716	1
70%	729	1
80%	746	1
90%	768	1
100%	817	

Forecast: LPV-146 CLEAR/GRUB/RIP RAP

Cell: I41

Summary:

Certainty level is 80.00%
 Certainty range is from 368 to 416
 Entire range is from 360 to 440
 Base case is 368
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	390	0
Median	387	0
Mode	---	
Standard Deviation	18	0
Variance	326	
Skewness	0.5206	
Kurtosis	2.38	
Coeff. of Variability	0.0464	
Minimum	360	
Maximum	440	
Range Width	80	
Mean Std. Error	0	

Forecast: LPV-146 CLEAR/GRUB/RIP RAP (cont'd)

Cell: I41

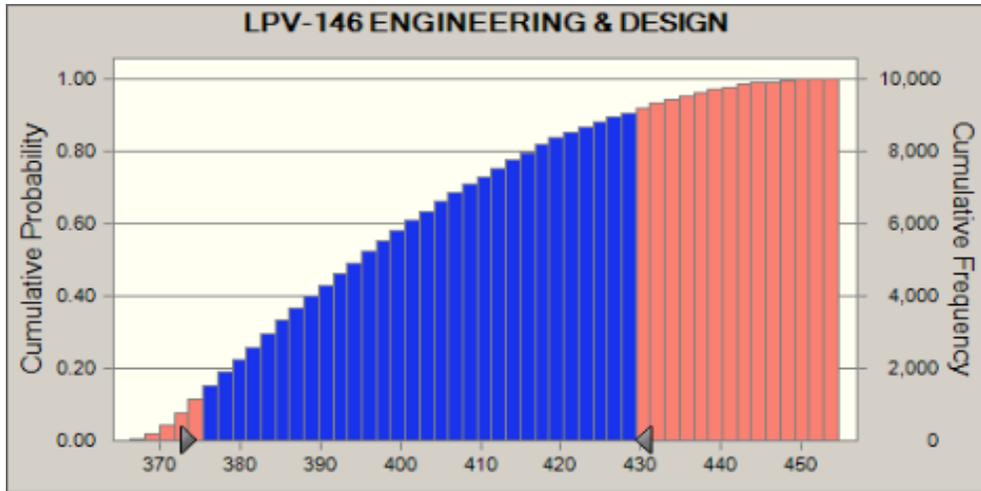
Percentiles:	Forecast values	Precision
0%	360	
10%	368	0
20%	372	0
30%	377	0
40%	382	0
50%	387	0
60%	392	1
70%	399	1
80%	406	1
90%	416	1
100%	440	

Forecast: LPV-146 ENGINEERING & DESIGN

Cell: I30

Summary:

Certainty level is 80.00%
 Certainty range is from 375 to 429
 Entire range is from 366 to 454
 Base case is 375
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	399	0
Median	396	1
Mode	---	
Standard Deviation	20	0
Variance	401	
Skewness	0.5349	
Kurtosis	2.41	
Coeff. of Variability	0.0502	
Minimum	366	
Maximum	454	
Range Width	88	
Mean Std. Error	0	

Forecast: LPV-146 ENGINEERING & DESIGN (cont'd)

Cell: I30

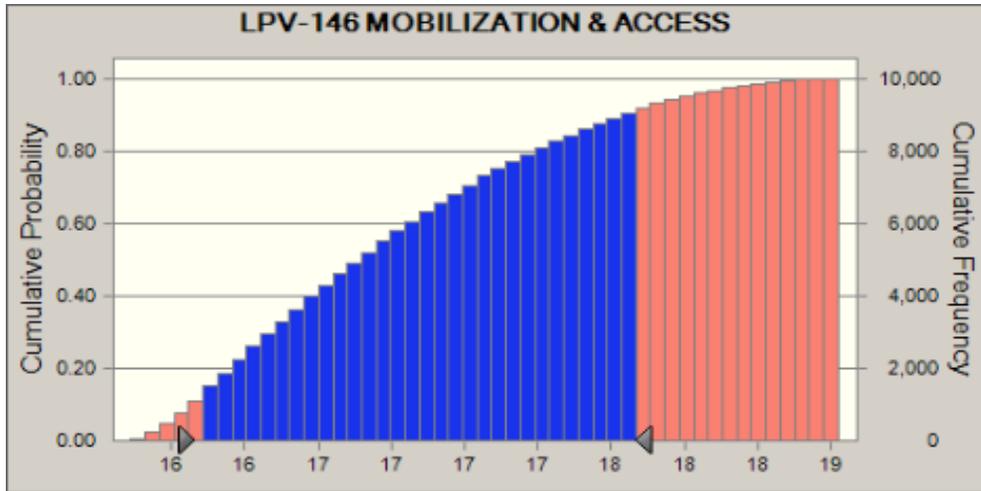
Percentiles:	Forecast values	Precision
0%	366	
10%	375	0
20%	380	0
30%	385	0
40%	390	0
50%	396	1
60%	402	1
70%	409	1
80%	417	1
90%	429	1
100%	454	

Forecast: LPV-146 MOBILIZATION & ACCESS

Cell: I37

Summary:

Certainty level is 80.00%
 Certainty range is from 16 to 18
 Entire range is from 16 to 19
 Base case is 16
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	17	0
Median	17	0
Mode	---	
Standard Deviation	1	0
Variance	0	
Skewness	0.5301	
Kurtosis	2.40	
Coeff. of Variability	0.0394	
Minimum	16	
Maximum	19	
Range Width	3	
Mean Std. Error	0	

Forecast: LPV-146 MOBILIZATION & ACCESS (cont'd)

Cell: I37

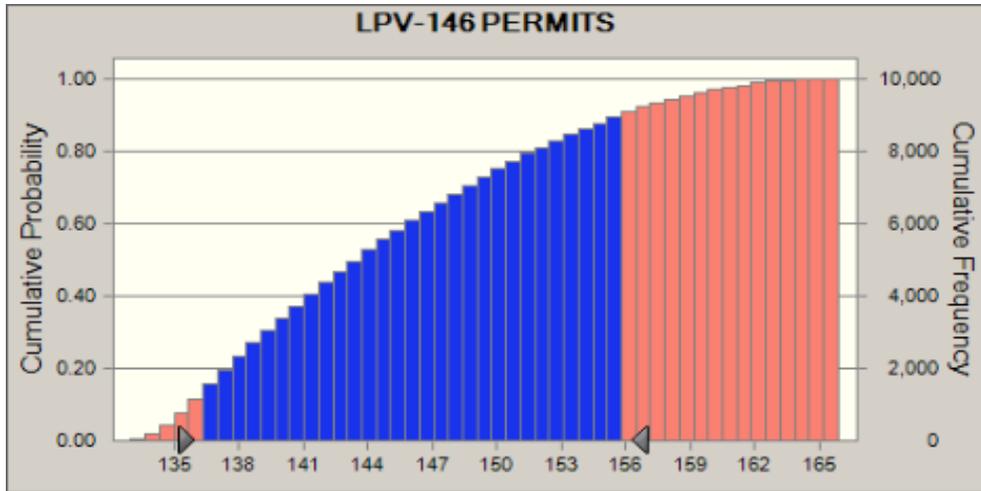
Percentiles:	Forecast values	Precision
0%	16	
10%	16	0
20%	16	0
30%	16	0
40%	17	0
50%	17	0
60%	17	0
70%	17	0
80%	17	0
90%	18	0
100%	19	

Forecast: LPV-146 PERMITS

Cell: I32

Summary:

Certainty level is 80.00%
 Certainty range is from 136 to 156
 Entire range is from 133 to 166
 Base case is 136
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	145	0
Median	144	0
Mode	---	
Standard Deviation	8	0
Variance	57	
Skewness	0.5322	
Kurtosis	2.36	
Coeff. of Variability	0.0520	
Minimum	133	
Maximum	166	
Range Width	33	
Mean Std. Error	0	

Forecast: LPV-146 PERMITS (cont'd)

Cell: I32

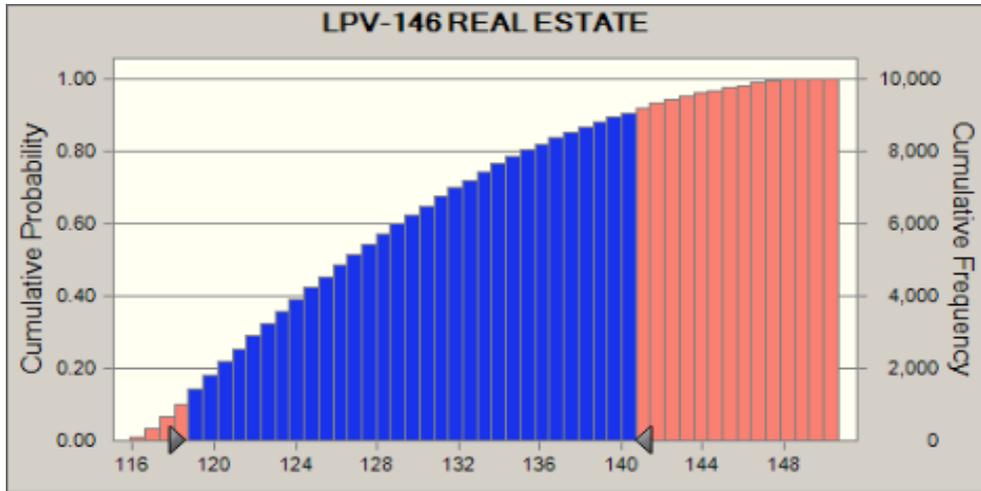
Percentiles:	Forecast values	Precision
0%	133	
10%	136	0
20%	138	0
30%	140	0
40%	142	0
50%	144	0
60%	146	0
70%	149	0
80%	152	0
90%	156	0
100%	166	

Forecast: LPV-146 REAL ESTATE

Cell: I34

Summary:

Certainty level is 80.00%
 Certainty range is from 119 to 140
 Entire range is from 116 to 151
 Base case is 118
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	128	0
Median	127	0
Mode	---	
Standard Deviation	8	0
Variance	65	
Skewness	0.5682	
Kurtosis	2.42	
Coeff. of Variability	0.0630	
Minimum	116	
Maximum	151	
Range Width	35	
Mean Std. Error	0	

Forecast: LPV-146 REAL ESTATE (cont'd)

Cell: I34

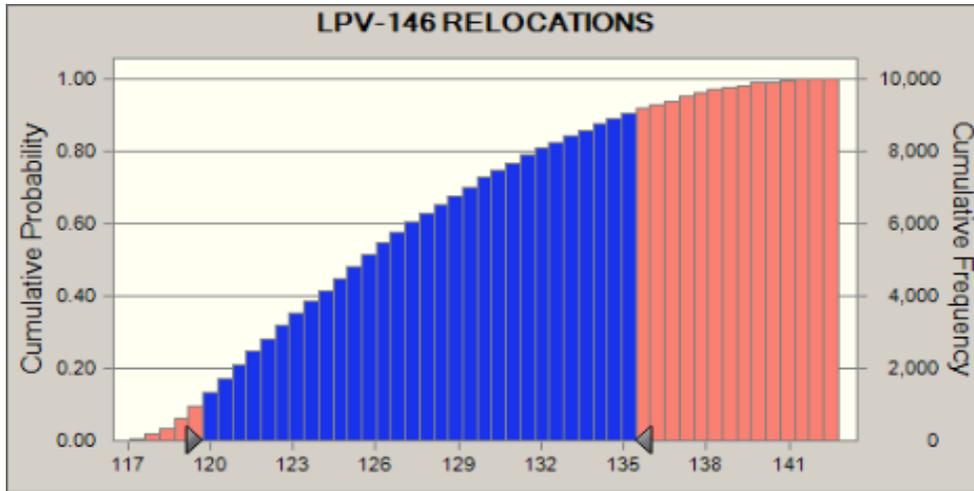
Percentiles:	Forecast values	Precision
0%	116	
10%	119	0
20%	120	0
30%	122	0
40%	125	0
50%	127	0
60%	129	0
70%	132	0
80%	136	0
90%	140	0
100%	151	

Forecast: LPV-146 RELOCATIONS

Cell: I39

Summary:

Certainty level is 80.00%
 Certainty range is from 120 to 135
 Entire range is from 117 to 143
 Base case is 120
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	127	0
Median	126	0
Mode	---	
Standard Deviation	6	0
Variance	34	
Skewness	0.5282	
Kurtosis	2.39	
Coeff. of Variability	0.0458	
Minimum	117	
Maximum	143	
Range Width	26	
Mean Std. Error	0	

Forecast: LPV-146 RELOCATIONS (cont'd)

Cell: I39

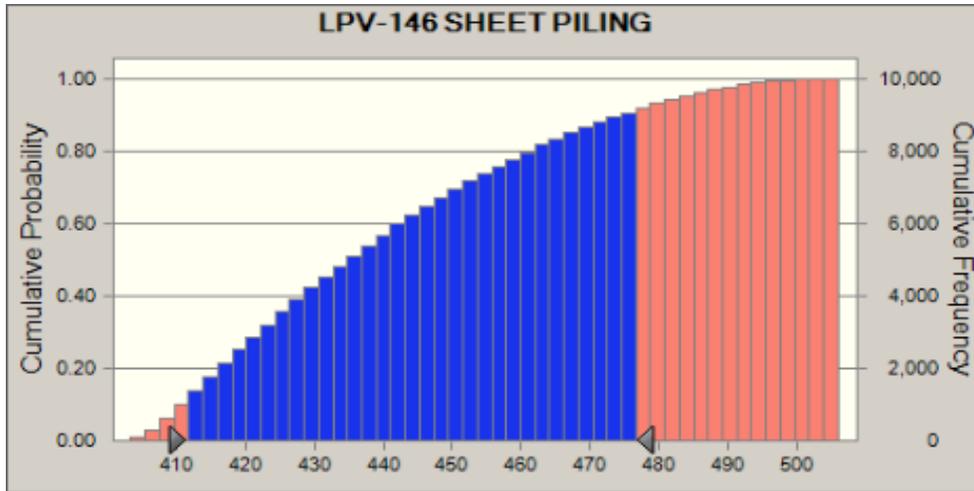
Percentiles:	Forecast values	Precision
0%	117	
10%	120	0
20%	121	0
30%	123	0
40%	124	0
50%	126	0
60%	128	0
70%	130	0
80%	132	0
90%	135	0
100%	143	

Forecast: LPV-146 SHEET PILING

Cell: I43

Summary:

Certainty level is 80.00%
 Certainty range is from 412 to 476
 Entire range is from 403 to 506
 Base case is 410
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	440	0
Median	436	1
Mode	---	
Standard Deviation	24	0
Variance	570	
Skewness	0.5513	
Kurtosis	2.37	
Coeff. of Variability	0.0543	
Minimum	403	
Maximum	506	
Range Width	103	
Mean Std. Error	0	

Forecast: LPV-146 SHEET PILING (cont'd)

Cell: I43

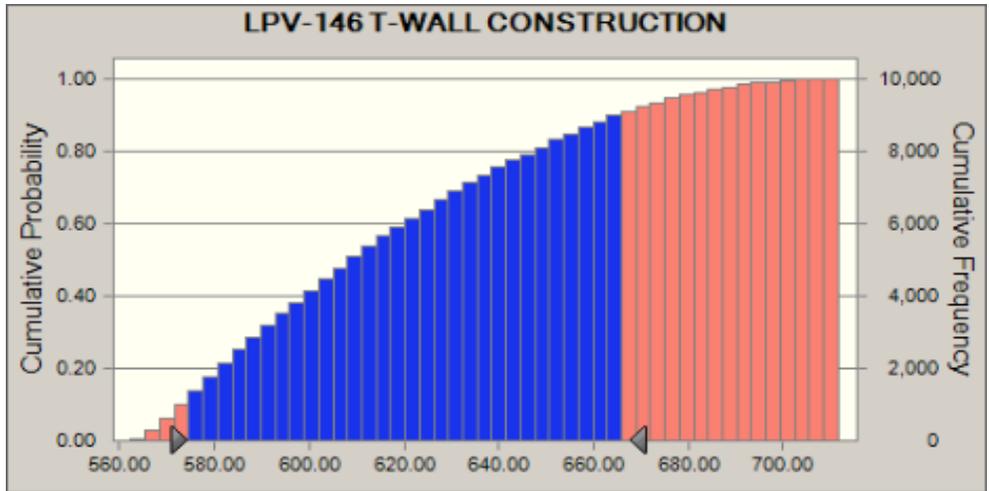
Percentiles:	Forecast values	Precision
0%	403	
10%	412	0
20%	417	0
30%	423	1
40%	429	1
50%	436	1
60%	443	1
70%	452	1
80%	462	1
90%	476	1
100%	506	

Forecast: LPV-146 T-WALL CONSTRUCTION

Cell: I47

Summary:

Certainty level is 80.00%
 Certainty range is from 574.68 to 666.78
 Entire range is from 562.36 to 711.50
 Base case is 572.00
 After 10,000 trials, the std. error of the mean is 0.35



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	616.05	0.68
Median	610.20	0.95
Mode	---	
Standard Deviation	34.61	0.40
Variance	1,197.80	
Skewness	0.5314	
Kurtosis	2.36	
Coeff. of Variability	0.0562	
Minimum	562.36	
Maximum	711.50	
Range Width	149.15	
Mean Std. Error	0.35	

Forecast: LPV-146 T-WALL CONSTRUCTION (cont'd)

Cell: I47

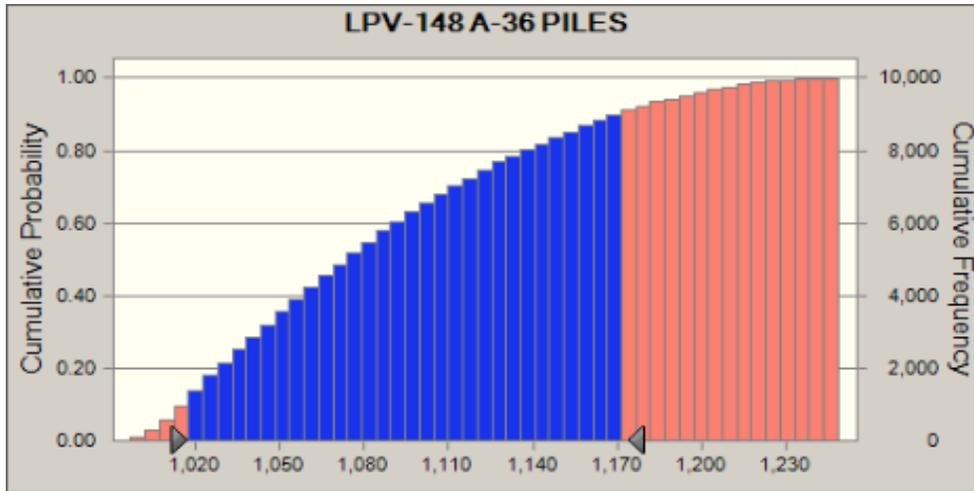
Percentiles:	Forecast values	Precision
0%	562.36	
10%	574.68	0.44
20%	582.46	0.54
30%	591.01	0.67
40%	600.62	0.78
50%	610.20	0.95
60%	621.41	1.13
70%	633.80	1.15
80%	649.11	1.30
90%	666.78	1.27
100%	711.50	

Forecast: LPV-148 A-36 PILES

Cell: I68

Summary:

Certainty level is 80.00%
 Certainty range is from 1,018 to 1,172
 Entire range is from 997 to 1,249
 Base case is 1,013
 After 10,000 trials, the std. error of the mean is 1



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	1,086	1
Median	1,076	2
Mode	---	
Standard Deviation	58	1
Variance	3,351	
Skewness	0.5859	
Kurtosis	2.45	
Coeff. of Variability	0.0533	
Minimum	997	
Maximum	1,249	
Range Width	252	
Mean Std. Error	1	

Forecast: LPV-148 A-36 PILES (cont'd)

Cell: I68

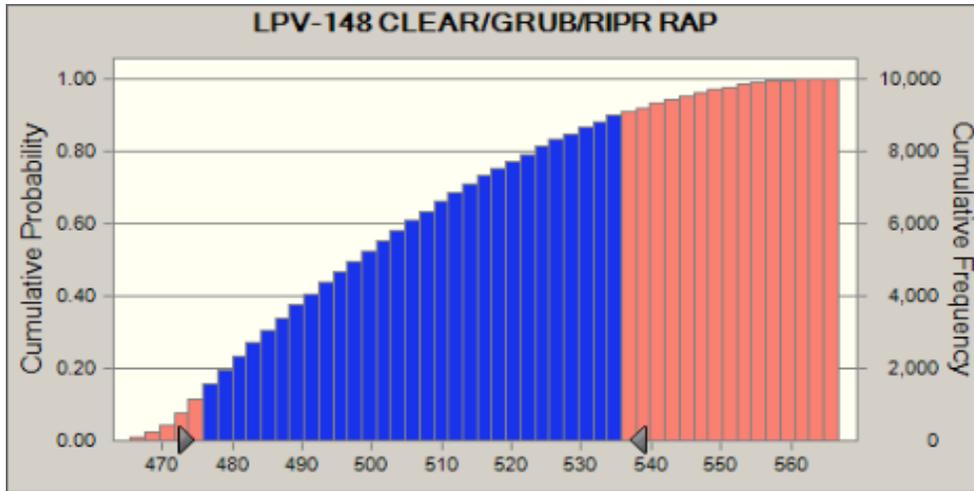
Percentiles:	Forecast values	Precision
0%	997	
10%	1,018	1
20%	1,030	1
30%	1,045	1
40%	1,060	1
50%	1,076	2
60%	1,094	2
70%	1,115	2
80%	1,140	2
90%	1,172	2
100%	1,249	

Forecast: LPV-148 CLEAR/GRUB/RIPR RAP

Cell: I64

Summary:

Certainty level is 80.00%
 Certainty range is from 475 to 536
 Entire range is from 466 to 567
 Base case is 475
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	503	0
Median	499	1
Mode	---	
Standard Deviation	23	0
Variance	537	
Skewness	0.5313	
Kurtosis	2.38	
Coeff. of Variability	0.0461	
Minimum	466	
Maximum	567	
Range Width	101	
Mean Std. Error	0	

Forecast: LPV-148 CLEAR/GRUB/RIPR RAP (cont'd)

Cell: I64

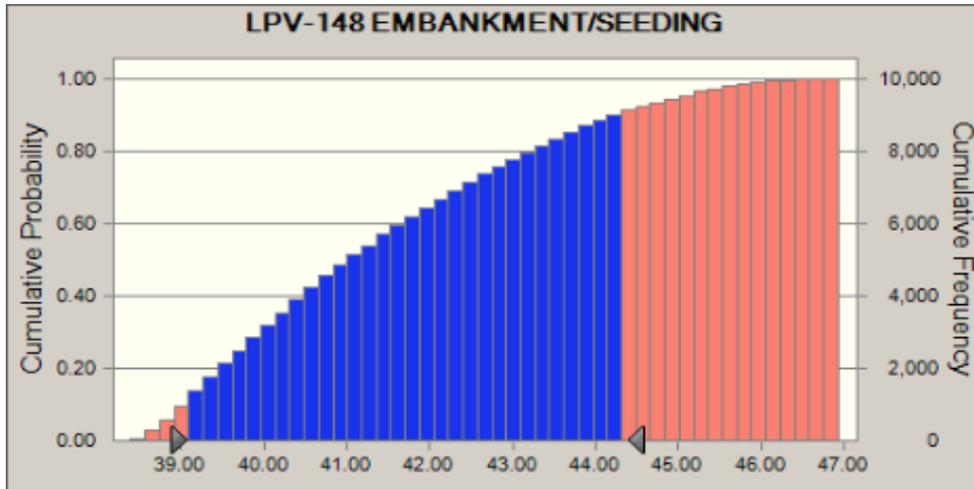
Percentiles:	Forecast values	Precision
0%	466	
10%	475	0
20%	480	0
30%	486	1
40%	492	1
50%	499	1
60%	506	1
70%	514	1
80%	524	1
90%	536	1
100%	567	

Forecast: LPV-148 EMBANKMENT/SEEDING

Cell: I72

Summary:

Certainty level is 80.00%
 Certainty range is from 39.11 to 44.34
 Entire range is from 38.39 to 46.92
 Base case is 39.00
 After 10,000 trials, the std. error of the mean is 0.02



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	41.45	0.04
Median	41.08	0.06
Mode	---	
Standard Deviation	1.97	0.02
Variance	3.88	
Skewness	0.5439	
Kurtosis	2.36	
Coeff. of Variability	0.0475	
Minimum	38.39	
Maximum	46.92	
Range Width	8.53	
Mean Std. Error	0.02	

Forecast: LPV-148 EMBANKMENT/SEEDING (cont'd)

Cell: I72

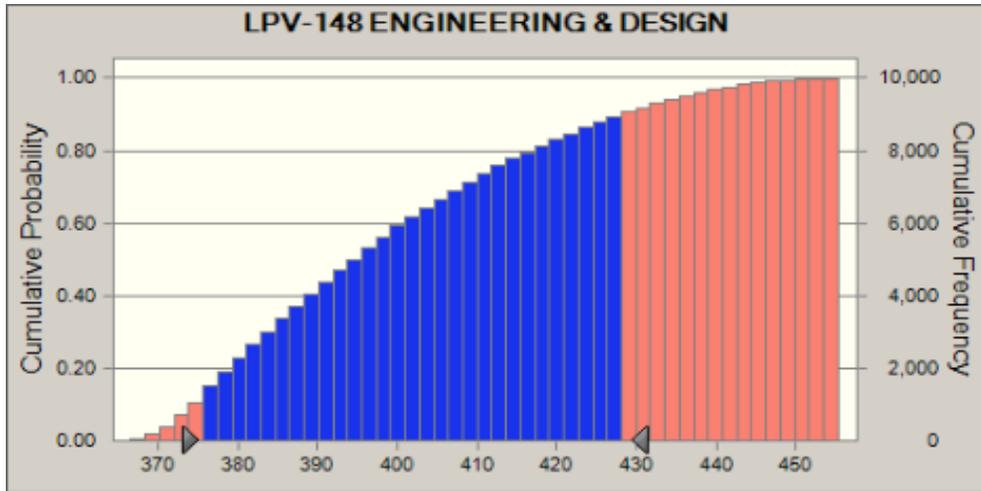
Percentiles:	Forecast values	Precision
0%	38.39	
10%	39.11	0.02
20%	39.55	0.03
30%	40.05	0.04
40%	40.53	0.05
50%	41.08	0.06
60%	41.74	0.06
70%	42.48	0.07
80%	43.33	0.07
90%	44.34	0.07
100%	46.92	

Forecast: LPV-148 ENGINEERING & DESIGN

Cell: I53

Summary:

Certainty level is 80.00%
 Certainty range is from 375 to 429
 Entire range is from 367 to 456
 Base case is 375
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	399	0
Median	395	1
Mode	---	
Standard Deviation	20	0
Variance	404	
Skewness	0.5657	
Kurtosis	2.42	
Coeff. of Variability	0.0504	
Minimum	367	
Maximum	456	
Range Width	89	
Mean Std. Error	0	

Forecast: LPV-148 ENGINEERING & DESIGN (cont'd)

Cell: I53

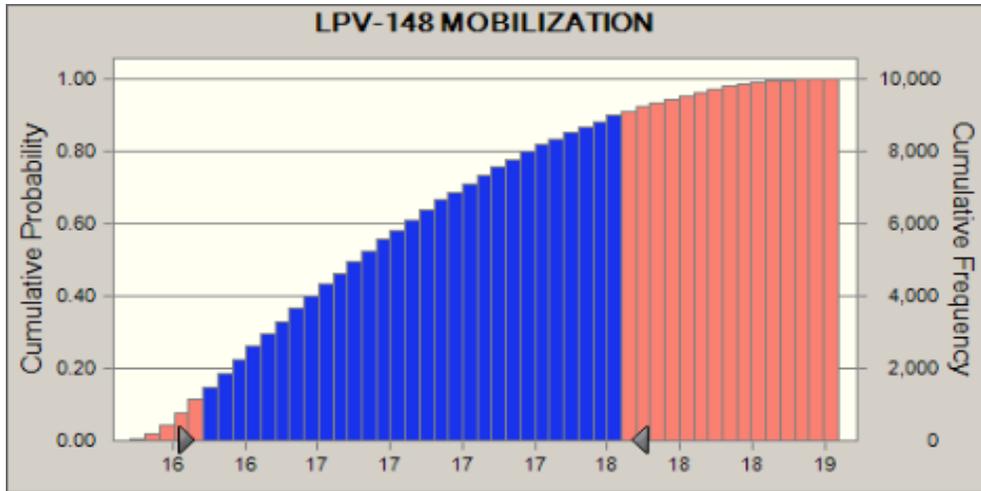
Percentiles:	Forecast values	Precision
0%	367	
10%	375	0
20%	380	0
30%	385	0
40%	390	1
50%	395	1
60%	402	1
70%	409	1
80%	418	1
90%	429	1
100%	456	

Forecast: LPV-148 MOBILIZATION

Cell: I60

Summary:

Certainty level is 80.00%
 Certainty range is from 16 to 18
 Entire range is from 16 to 19
 Base case is 16
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	17	0
Median	17	0
Mode	---	
Standard Deviation	1	0
Variance	0	
Skewness	0.5377	
Kurtosis	2.42	
Coeff. of Variability	0.0395	
Minimum	16	
Maximum	19	
Range Width	3	
Mean Std. Error	0	

Forecast: LPV-148 MOBILIZATION (cont'd)

Cell: I60

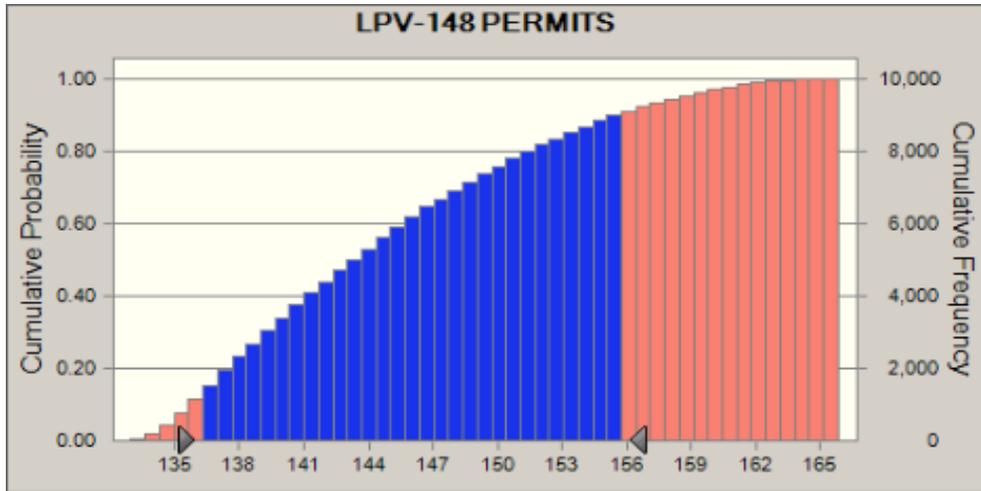
Percentiles:	Forecast values	Precision
0%	16	
10%	16	0
20%	16	0
30%	16	0
40%	17	0
50%	17	0
60%	17	0
70%	17	0
80%	17	0
90%	18	0
100%	19	

Forecast: LPV-148 PERMITS

Cell: I55

Summary:

Certainty level is 80.00%
 Certainty range is from 136 to 156
 Entire range is from 133 to 166
 Base case is 136
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	145	0
Median	144	0
Mode	---	
Standard Deviation	7	0
Variance	56	
Skewness	0.5620	
Kurtosis	2.43	
Coeff. of Variability	0.0515	
Minimum	133	
Maximum	166	
Range Width	33	
Mean Std. Error	0	

Forecast: LPV-148 PERMITS (cont'd)

Cell: I55

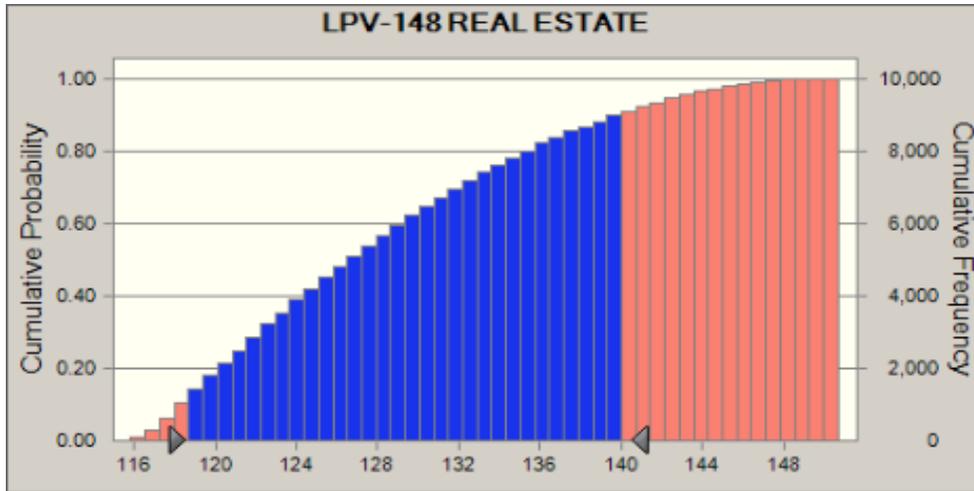
Percentiles:	Forecast values	Precision
0%	133	
10%	136	0
20%	138	0
30%	140	0
40%	142	0
50%	144	0
60%	146	0
70%	149	0
80%	152	0
90%	156	0
100%	166	

Forecast: LPV-148 REAL ESTATE

Cell: I57

Summary:

Certainty level is 80.00%
 Certainty range is from 119 to 140
 Entire range is from 116 to 151
 Base case is 118
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	128	0
Median	127	0
Mode	---	
Standard Deviation	8	0
Variance	64	
Skewness	0.5338	
Kurtosis	2.37	
Coeff. of Variability	0.0625	
Minimum	116	
Maximum	151	
Range Width	35	
Mean Std. Error	0	

Forecast: LPV-148 REAL ESTATE (cont'd)

Cell: I57

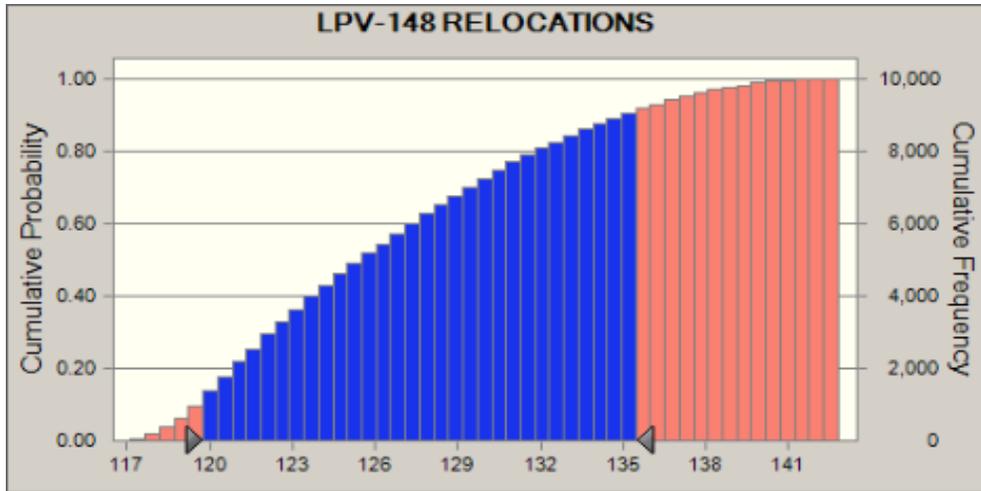
Percentiles:	Forecast values	Precision
0%	116	
10%	119	0
20%	121	0
30%	122	0
40%	125	0
50%	127	0
60%	130	0
70%	132	0
80%	136	0
90%	140	0
100%	151	

Forecast: LPV-148 RELOCATIONS

Cell: I62

Summary:

Certainty level is 80.00%
 Certainty range is from 120 to 135
 Entire range is from 117 to 143
 Base case is 120
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	127	0
Median	126	0
Mode	---	
Standard Deviation	6	0
Variance	34	
Skewness	0.5315	
Kurtosis	2.37	
Coeff. of Variability	0.0460	
Minimum	117	
Maximum	143	
Range Width	26	
Mean Std. Error	0	

Forecast: LPV-148 RELOCATIONS (cont'd)

Cell: I62

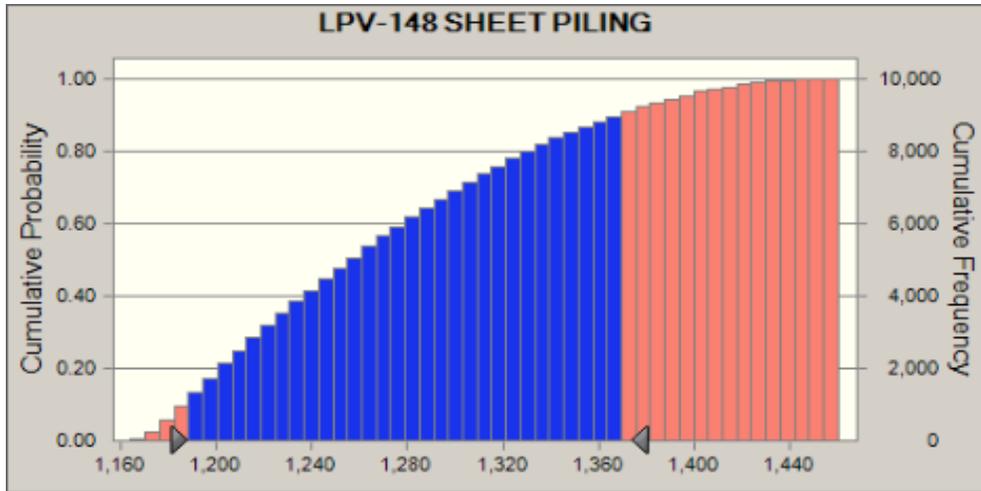
Percentiles:	Forecast values	Precision
0%	117	
10%	120	0
20%	121	0
30%	122	0
40%	124	0
50%	126	0
60%	128	0
70%	130	0
80%	132	0
90%	135	0
100%	143	

Forecast: LPV-148 SHEET PILING

Cell: I66

Summary:

Certainty level is 80.00%
 Certainty range is from 1,189 to 1,372
 Entire range is from 1,164 to 1,460
 Base case is 1,184
 After 10,000 trials, the std. error of the mean is 1



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	1,271	1
Median	1,260	2
Mode	---	
Standard Deviation	68	1
Variance	4,659	
Skewness	0.5473	
Kurtosis	2.39	
Coeff. of Variability	0.0537	
Minimum	1,164	
Maximum	1,460	
Range Width	296	
Mean Std. Error	1	

Forecast: LPV-148 SHEET PILING (cont'd)

Cell: I66

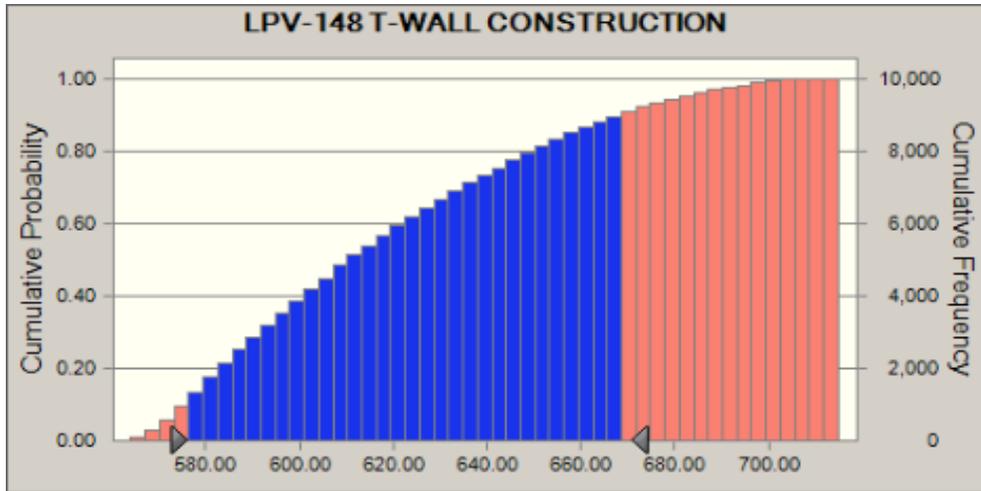
Percentiles:	Forecast values	Precision
0%	1,164	
10%	1,189	1
20%	1,205	1
30%	1,222	1
40%	1,240	2
50%	1,260	2
60%	1,281	2
70%	1,306	2
80%	1,334	2
90%	1,372	3
100%	1,460	

Forecast: LPV-148 T-WALL CONSTRUCTION

Cell: I70

Summary:

Certainty level is 80.00%
 Certainty range is from 576.81 to 669.85
 Entire range is from 564.12 to 714.73
 Base case is 574.00
 After 10,000 trials, the std. error of the mean is 0.35



Statistics:	Forecast values	Precision
Trials	10,000	
Mean	618.27	0.68
Median	612.09	1.04
Mode	---	
Standard Deviation	34.89	0.40
Variance	1,217.59	
Skewness	0.5440	
Kurtosis	2.36	
Coeff. of Variability	0.0564	
Minimum	564.12	
Maximum	714.73	
Range Width	150.62	
Mean Std. Error	0.35	

Forecast: LPV-148 T-WALL CONSTRUCTION (cont'd)

Cell: I70

Percentiles:	Forecast values	Precision
0%	564.12	
10%	576.81	0.44
20%	584.43	0.64
30%	593.22	0.83
40%	602.28	0.83
50%	612.09	1.04
60%	623.24	1.10
70%	635.99	1.10
80%	651.38	1.05
90%	669.85	1.16
100%	714.73	

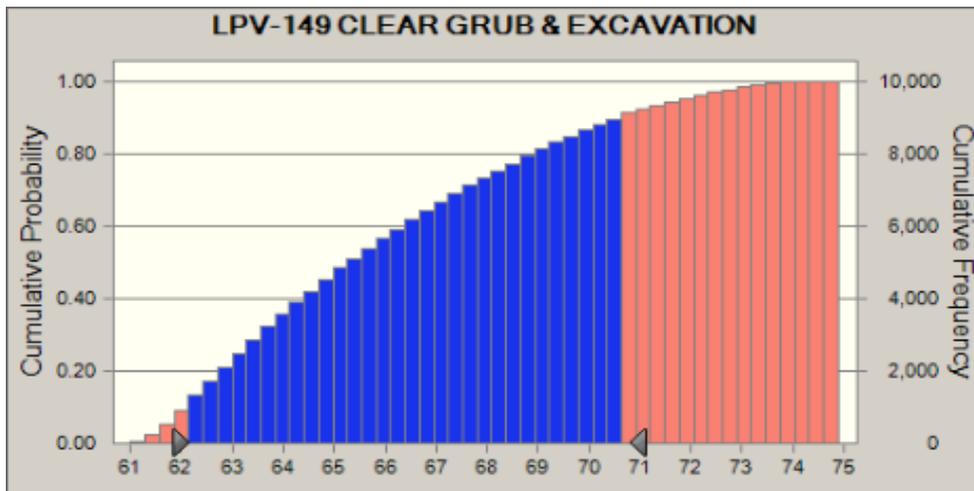
Worksheet: [LPV-145-149Schedule.xls]Schedule Model LPV149

Forecast: LPV-149 CLEAR GRUB & EXCAVATION

Cell: I15

Summary:

Certainty level is 80.00%
 Certainty range is from 62 to 71
 Entire range is from 61 to 75
 Base case is 62
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10,000
Mean	66
Median	65
Mode	---
Standard Deviation	3
Variance	10
Skewness	0.5451
Kurtosis	2.35
Coeff. of Variability	0.0484
Minimum	61
Maximum	75
Range Width	14
Mean Std. Error	0

Forecast: LPV-149 CLEAR GRUB & EXCAVATION (cont'd)

Cell: I15

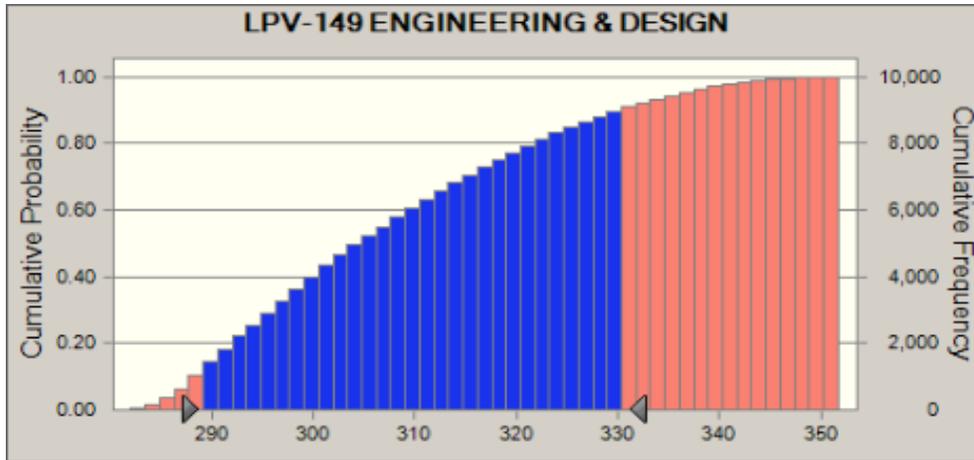
Percentiles:	Forecast values
0%	61
10%	62
20%	63
30%	64
40%	65
50%	65
60%	66
70%	68
80%	69
90%	71
100%	75

Forecast: LPV-149 ENGINEERING & DESIGN

Cell: I4

Summary:

Certainty level is 80.00%
 Certainty range is from 289 to 331
 Entire range is from 282 to 352
 Base case is 289
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10,000
Mean	308
Median	305
Mode	---
Standard Deviation	16
Variance	246
Skewness	0.5368
Kurtosis	2.39
Coeff. of Variability	0.0509
Minimum	282
Maximum	352
Range Width	70
Mean Std. Error	0

Forecast: LPV-149 ENGINEERING & DESIGN (cont'd)

Cell: I4

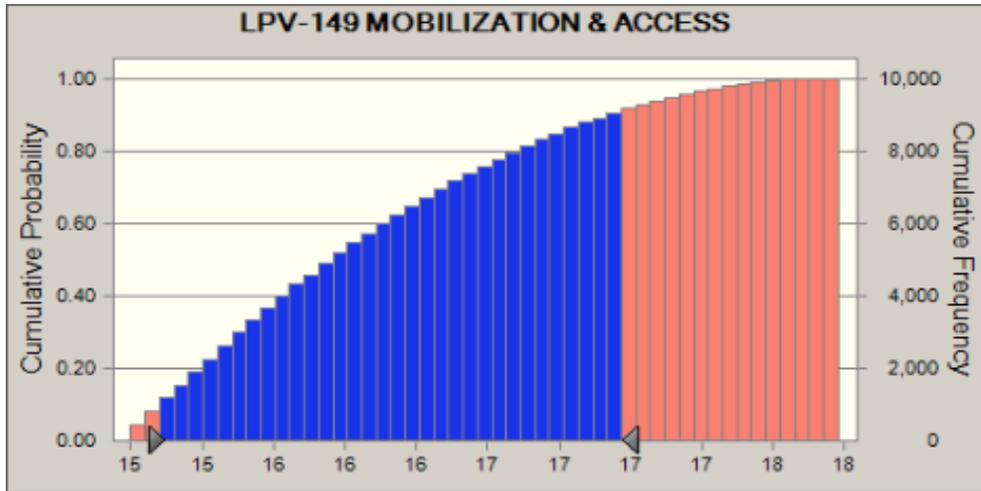
Percentiles:	Forecast values
0%	282
10%	289
20%	293
30%	297
40%	301
50%	305
60%	310
70%	316
80%	322
90%	331
100%	352

Forecast: LPV-149 MOBILIZATION & ACCESS

Cell: I11

Summary:

Certainty level is 80.00%
 Certainty range is from 15 to 17
 Entire range is from 15 to 18
 Base case is 15
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10,000
Mean	16
Median	16
Mode	---
Standard Deviation	1
Variance	0
Skewness	0.5661
Kurtosis	2.40
Coeff. of Variability	0.0440
Minimum	15
Maximum	18
Range Width	3
Mean Std. Error	0

Forecast: LPV-149 MOBILIZATION & ACCESS (cont'd)

Cell: I11

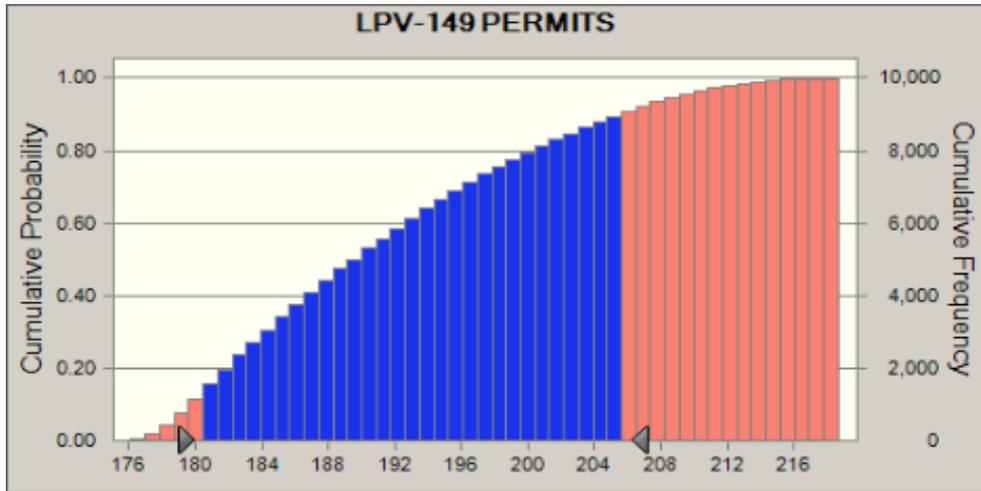
Percentiles:	Forecast values
0%	15
10%	15
20%	15
30%	15
40%	16
50%	16
60%	16
70%	16
80%	17
90%	17
100%	18

Forecast: LPV-149 PERMITS

Cell: I6

Summary:

Certainty level is 80.00%
 Certainty range is from 180 to 206
 Entire range is from 176 to 219
 Base case is 180
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10,000
Mean	192
Median	190
Mode	---
Standard Deviation	10
Variance	93
Skewness	0.5392
Kurtosis	2.36
Coeff. of Variability	0.0504
Minimum	176
Maximum	219
Range Width	43
Mean Std. Error	0

Forecast: LPV-149 PERMITS (cont'd)

Cell: I6

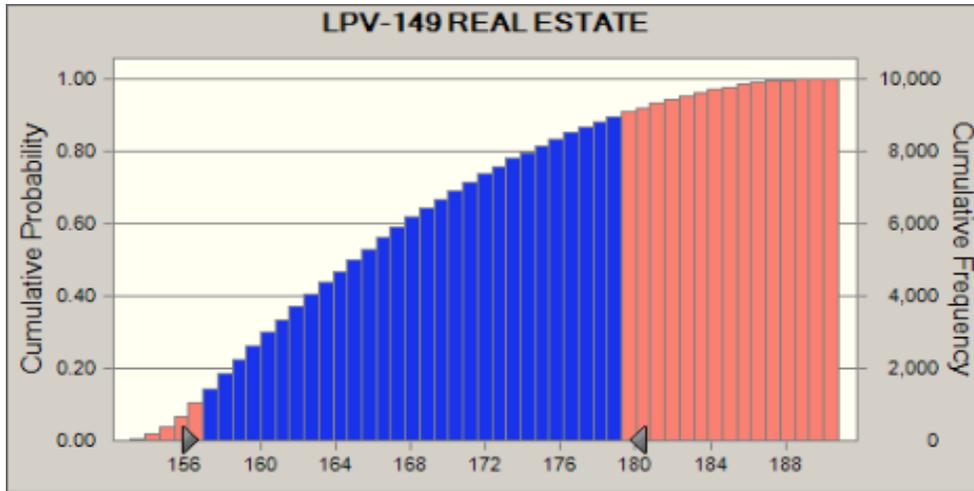
Percentiles:	Forecast values
0%	176
10%	180
20%	182
30%	185
40%	187
50%	190
60%	193
70%	196
80%	201
90%	206
100%	219

Forecast: LPV-149 REAL ESTATE

Cell: I8

Summary:

Certainty level is 80.00%
 Certainty range is from 157 to 179
 Entire range is from 153 to 191
 Base case is 157
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10,000
Mean	167
Median	165
Mode	---
Standard Deviation	9
Variance	73
Skewness	0.5716
Kurtosis	2.44
Coeff. of Variability	0.0511
Minimum	153
Maximum	191
Range Width	38
Mean Std. Error	0

Forecast: LPV-149 REAL ESTATE (cont'd)

Cell: I8

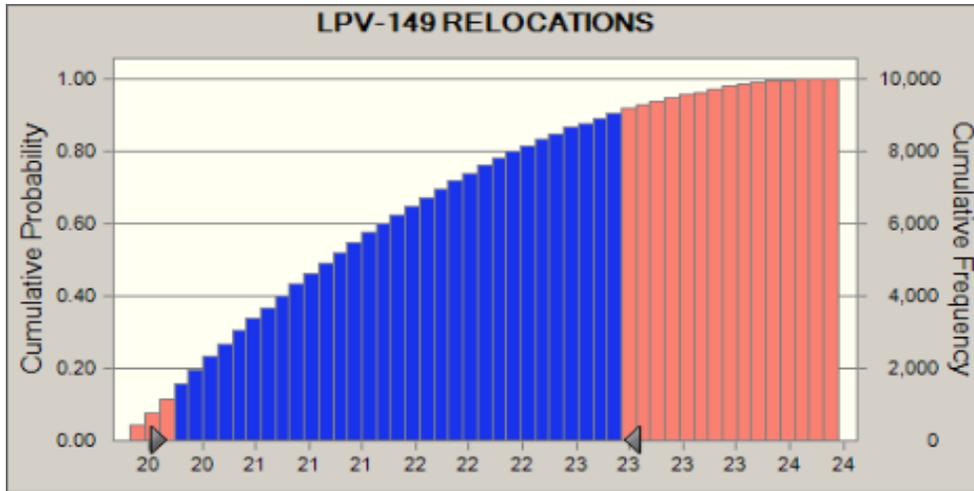
Percentiles:	Forecast values
0%	153
10%	157
20%	159
30%	161
40%	163
50%	165
60%	168
70%	171
80%	175
90%	179
100%	191

Forecast: LPV-149 RELOCATIONS

Cell: I13

Summary:

Certainty level is 80.00%
 Certainty range is from 20 to 23
 Entire range is from 20 to 24
 Base case is 20
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10,000
Mean	21
Median	21
Mode	---
Standard Deviation	1
Variance	1
Skewness	0.5835
Kurtosis	2.42
Coeff. of Variability	0.0443
Minimum	20
Maximum	24
Range Width	4
Mean Std. Error	0

Forecast: LPV-149 RELOCATIONS (cont'd)

Cell: I13

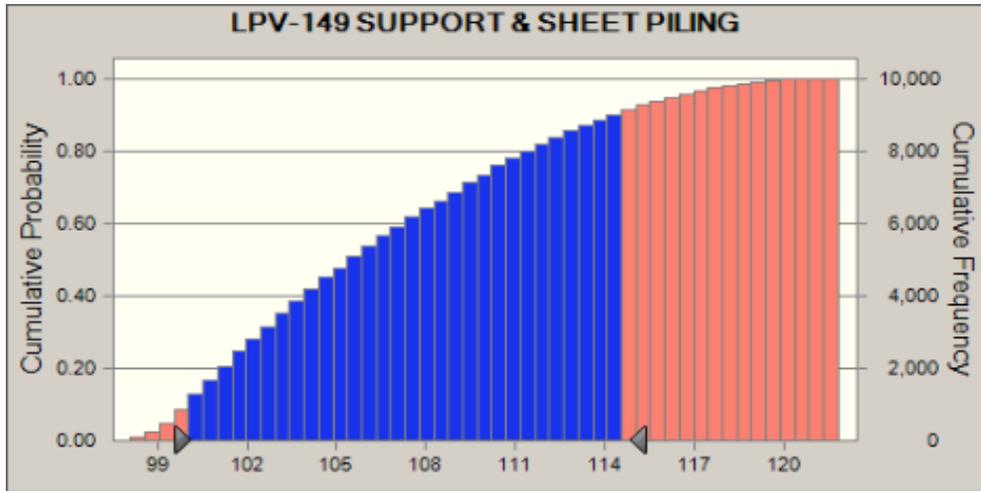
Percentiles:	Forecast values
0%	20
10%	20
20%	20
30%	21
40%	21
50%	21
60%	21
70%	22
80%	22
90%	23
100%	24

Forecast: LPV-149 SUPPORT & SHEET PILING

Cell: I17

Summary:

Certainty level is 80.00%
 Certainty range is from 100 to 115
 Entire range is from 98 to 122
 Base case is 100
 After 10,000 trials, the std. error of the mean is 0



Statistics:	Forecast values
Trials	10,000
Mean	107
Median	106
Mode	---
Standard Deviation	5
Variance	29
Skewness	0.5404
Kurtosis	2.38
Coeff. of Variability	0.0507
Minimum	98
Maximum	122
Range Width	24
Mean Std. Error	0

Forecast: LPV-149 SUPPORT & SHEET PILING (cont'd)

Cell: I17

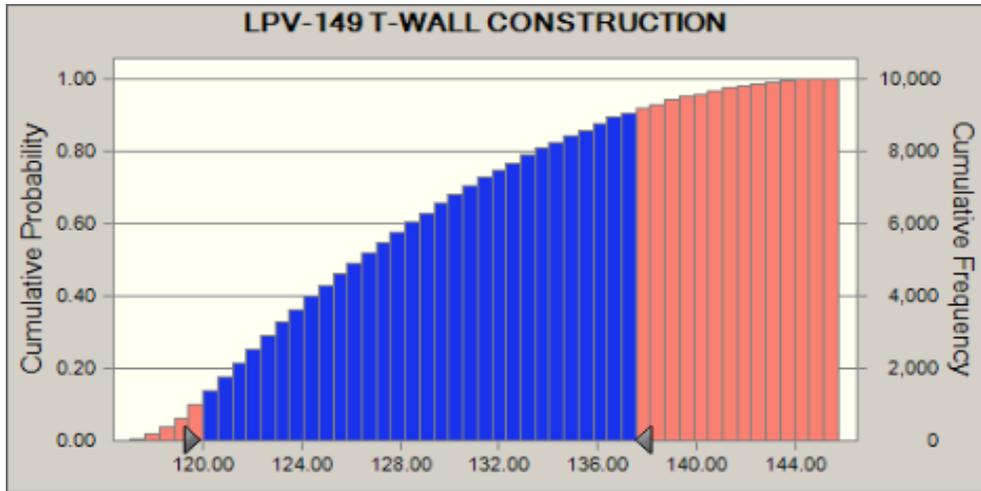
Percentiles:	Forecast values
0%	98
10%	100
20%	101
30%	103
40%	104
50%	106
60%	107
70%	110
80%	112
90%	115
100%	122

Forecast: LPV-149 T-WALL CONSTRUCTION

Cell: I19

Summary:

Certainty level is 80.00%
 Certainty range is from 120.02 to 137.35
 Entire range is from 117.08 to 145.71
 Base case is 120.00
 After 10,000 trials, the std. error of the mean is 0.07



Statistics:	Forecast values
Trials	10,000
Mean	127.74
Median	126.67
Mode	---
Standard Deviation	6.53
Variance	42.58
Skewness	0.5470
Kurtosis	2.40
Coeff. of Variability	0.0511
Minimum	117.08
Maximum	145.71
Range Width	28.63
Mean Std. Error	0.07

Forecast: LPV-149 T-WALL CONSTRUCTION (cont'd)

Cell: I19

Percentiles:	Forecast values
0%	117.08
10%	120.02
20%	121.53
30%	123.07
40%	124.69
50%	126.67
60%	128.73
70%	131.00
80%	133.81
90%	137.35
100%	145.71

End of Forecasts