Linear Collider Tunnel
Cost Probability Distribution
SAMPLE DATA & CRITERIA

Data

Selected & Assembled by Experienced Tunneling Engineers through Hanson Engineering, Springfield, Illinois.

Criteria

Actual Tunnels Constructed in the USA.

Actual Tunnel Low Bid $. (not the actual final cost)

(may not have been the accepted & be the successful low bid)

Actual Geology - Claystone, Dolomite, Sandstone & Shale

(found at representative LC sites in CA & IL)
COST PROBABILITY DATA SET ATTRIBUTES

Cost Probability Distribution Data Set Includes:

Bid Cost Only.
23 Actual Tunnels.
Actual Tunnel Bid Cost in $US per Lineal Foot Escalated to 2003.

Cost Probability Distribution Data Set is NOT Sorted to Select by:

Excavated Diameter or Total Excavated Length.
Boring Machine, Road Header or Drill & Blast Construction Technique
Depth from Surface or Surface Topography.
Water Intrusion (or not), Structural Supports (or not)
Floor (invert), Tunnel Lining or Type of Surface Housings & Access
Year of Completion, Location or the Duration of Construction
LC Tunnel per Unit Cost Probability Distribution

Beta Distribution
2003 CA-IL Tunnel Cost Data from Hanson Engineering Study May & July 2003

Final Probability Distribution - $1,850 at peak & $2,000 at 50%

C. Corvin 8.27.03
Besides Geology & Cost, What Are the Data Set Attributes?

Excavated Diameter: 6.5 Feet -to- 35.3 Feet

Total Excavated Length: 5,350 Feet -to- 42,000 Feet

Per Unit Cost: $649 -to- $3,900 per Lineal Foot

Water Intrusion: Dry -to- Wet

Depth from Surface: Shallow -to- Deep (900 feet or more)

Location & Construction Start: 7 States, 1970 -to- 2002
SUMMARY

A broad sampling of actual tunnels with appropriate representative geology provides an adequate basis for the current LC project tunnel cost probability distribution.
Linear Collider Tunnel
Cost Probability Distribution
End