

Concept Estimates for New Construction



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Agenda



BACKGROUND



STEPS TO
ESTIMATE



CALIBRATING
THE TOOL



DEMO



QUESTIONS

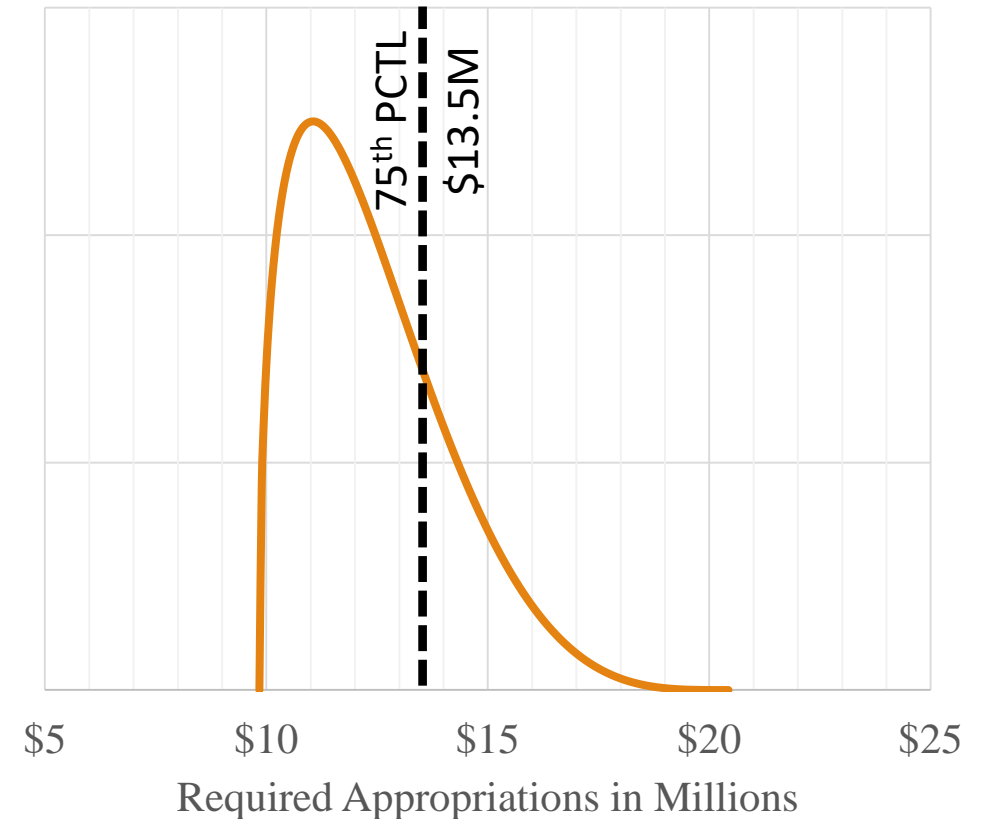
Bottom Line Up Front

Pros

- Quick! \approx 90 minutes per building
- Cheap! A \$300 RSMeans Book
- Minimal user inputs
- Establishes a cost range
- Users determine appropriate percentile

Cons

- Site specific factors (e.g., poor soil) not captured
- Only for large, new construction projects
- Only in use for a few months



Background



Routinely found that estimates were falling short of bids.

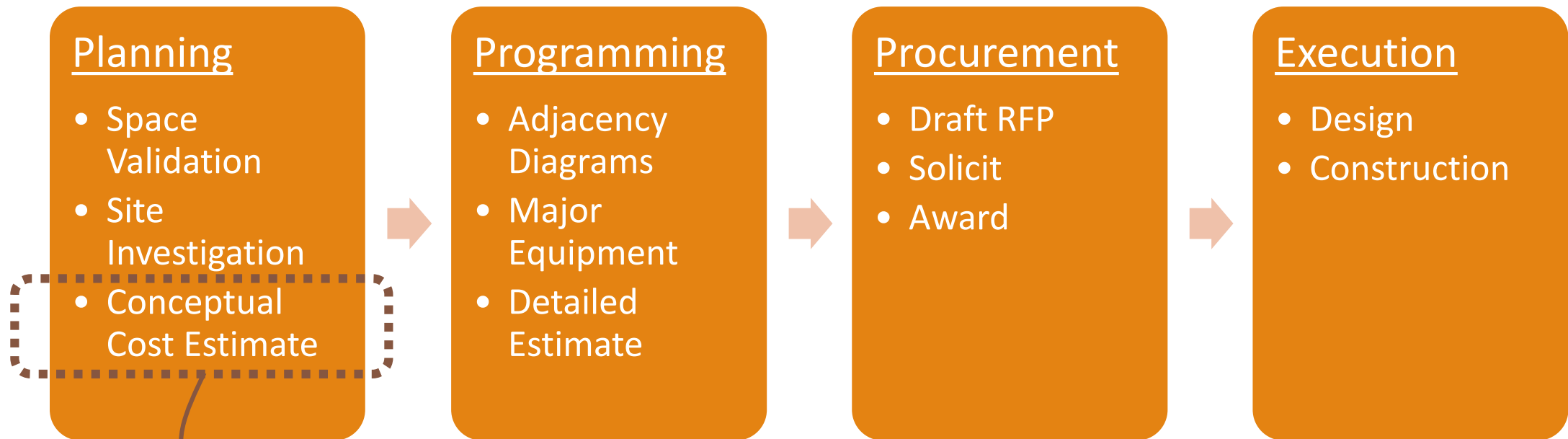


Needed a method to increase likelihood appropriations would be sufficient.



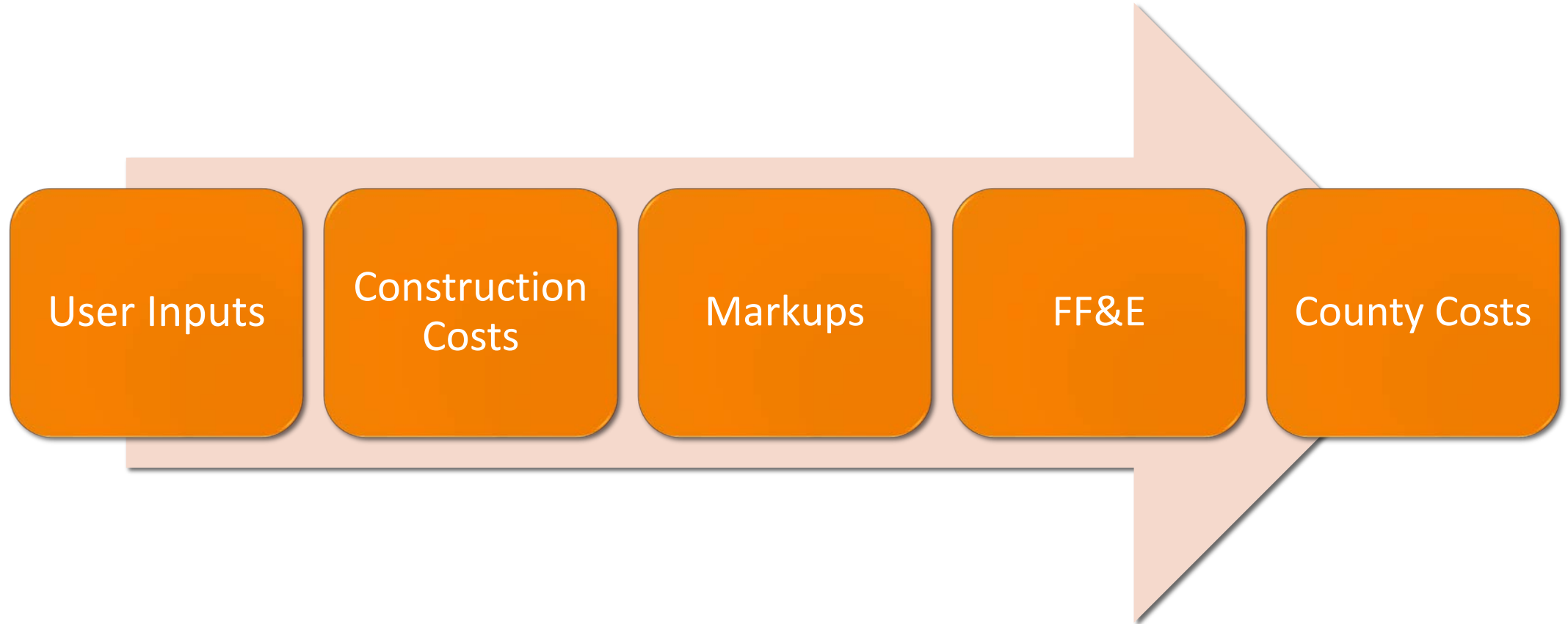
Developed in the midst of a design-build procurement that seemed likely to exceed the budget.

Place in Project Life Cycle



Gives early decision makers a ROM estimate—i.e., gets them in the ballpark. Should be followed by a detailed estimate during programming phase.

Estimate Components



User Inputs



Building Size



Site Size



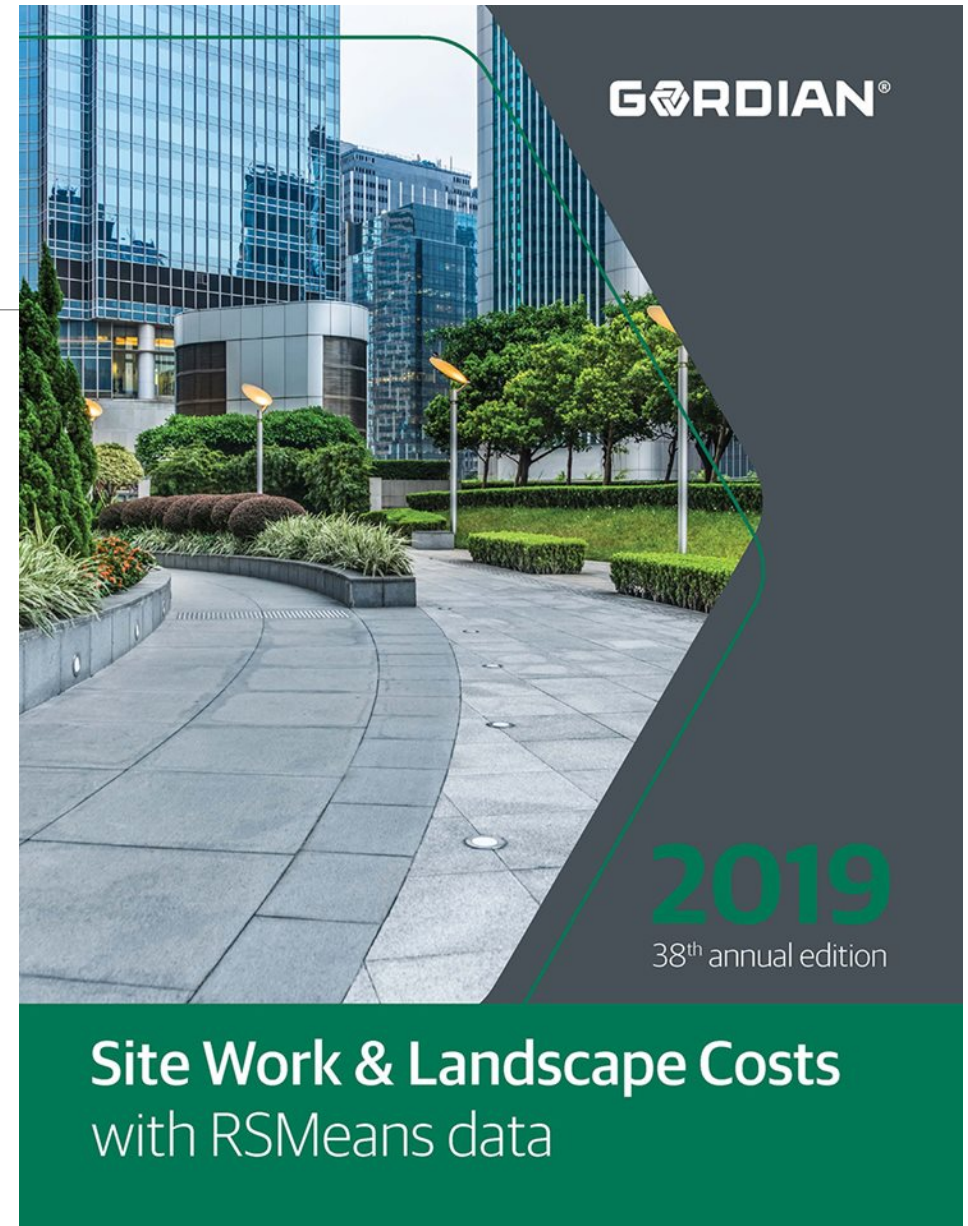
Facility Use



Anticipated Project Timeline

Construction Costs

- Building Costs
 - RSMeans Project Costs
 - Per square foot numbers
 - Quartiles are the foundation of the cost curve.
- Site Costs
 - RSMeans Assemblies
 - Site Development Components for Buildings
G2040 990
- Demolition Costs
 - Standard Estimating Practices
 - RSMeans Division 02 41



Markups

Escalation from Turner Bldg. Cost Index	5.16% per year
Location Adjustment*	9.1% for San Diego
Sales Tax (7.75% on 50% material)	3.875%
Prevailing Wage (35% on 50% labor)	17.5%
Bonding	1.2%
General Contractor's Overhead & Profit	12%
General Requirements	10%
Contingency	20%
Zero Net Energy	10%
Architectural and Engineering Fees	10%

* From Site Work & Landscaping, 2018. Copyright RSMeans, Rockland, MA, 781-422-5000; All rights reserved.

FF&E and County Costs

FF&E

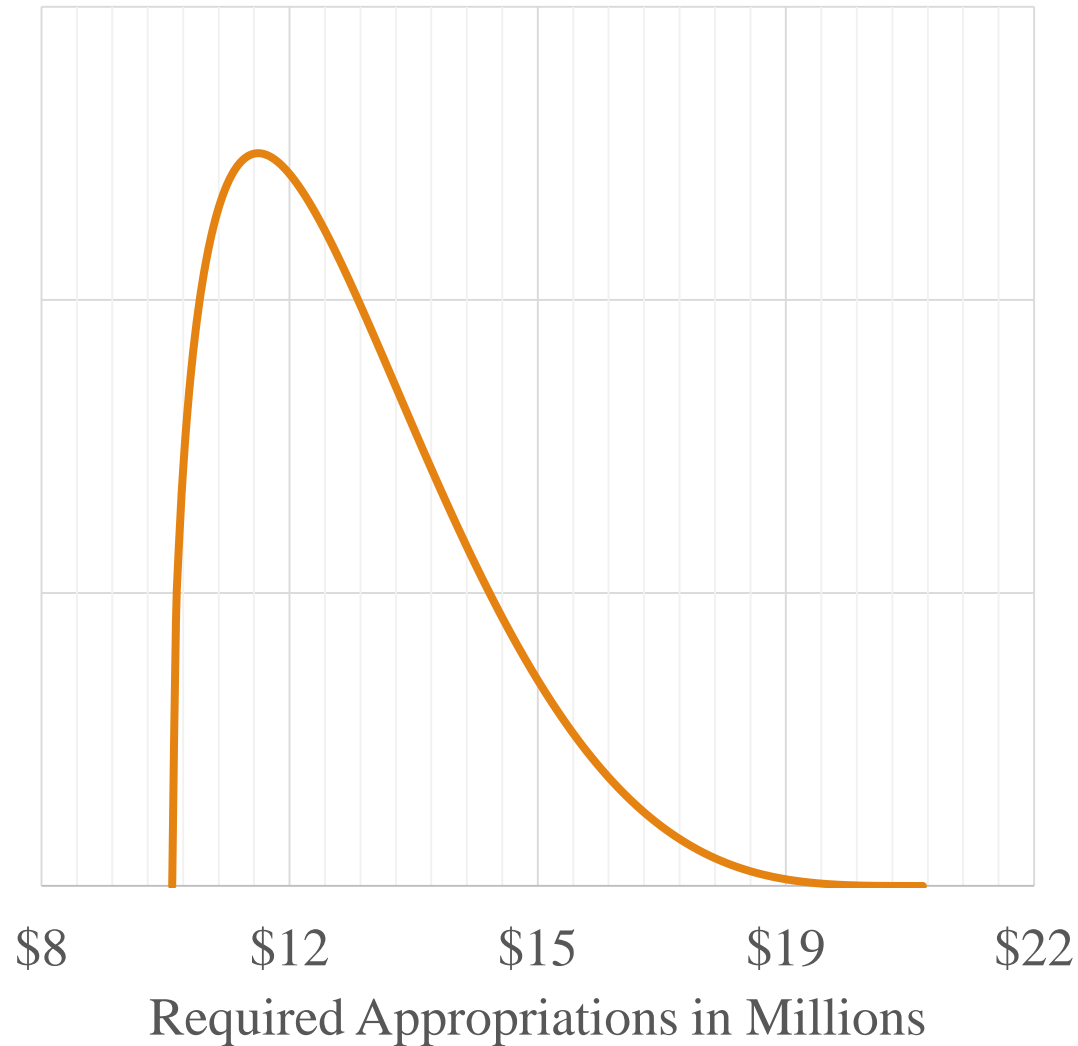
- From NAVFAC on wbdg.org
- Collateral Equipment (FF&E) Criteria & Templates
- FF&E Cost Estimating Guide per SF costs for a variety of building types



COUNTY COSTS

- Project Management and Inspection
- County Counsel and Procurement Fees
- Proposal Stipends
- Telecom Site Installation Costs
- Technical Consultant Fees
- 10% Owner's Contingency





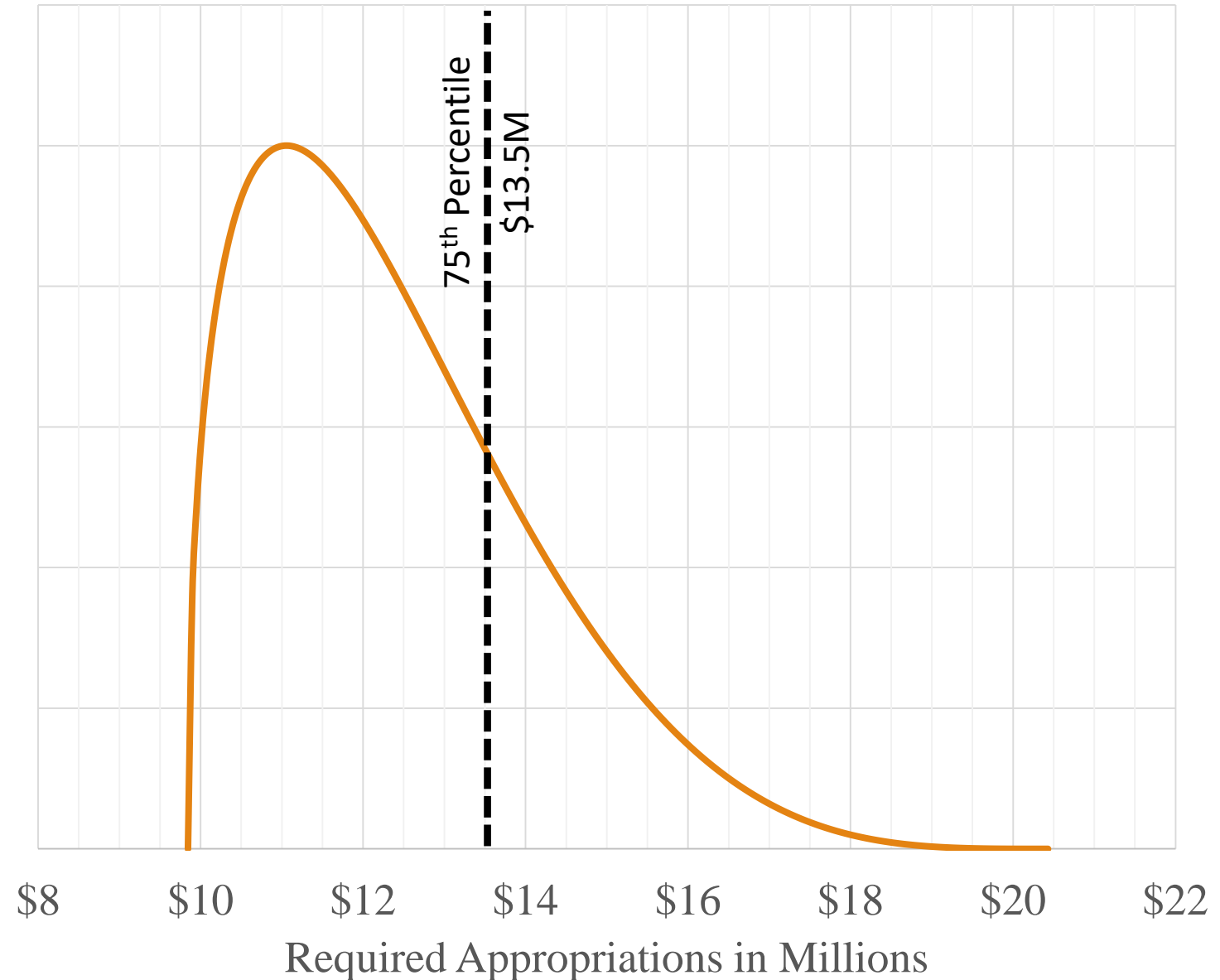
Result

Statistical Steps To Create Curve

1. Adjusted Boxplot method to calculate optimistic and pessimistic values.
2. Program Evaluation and Review Technique ("PERT") method to establish
 - a. most likely value,
 - b. expected value,
 - c. alpha, and
 - d. beta.
3. Excel's BETA.DIST function to establish graph.

Calibration

- Estimated several past projects to gauge accuracy.
- Reliance on 75th percentile is appropriate for San Diego County's conceptual budgets.
- Interested agencies can estimate their past projects to determine an appropriate percentile.



Demonstration

Questions
