

# Maturing Cost Estimation in Rapid Acquisitions

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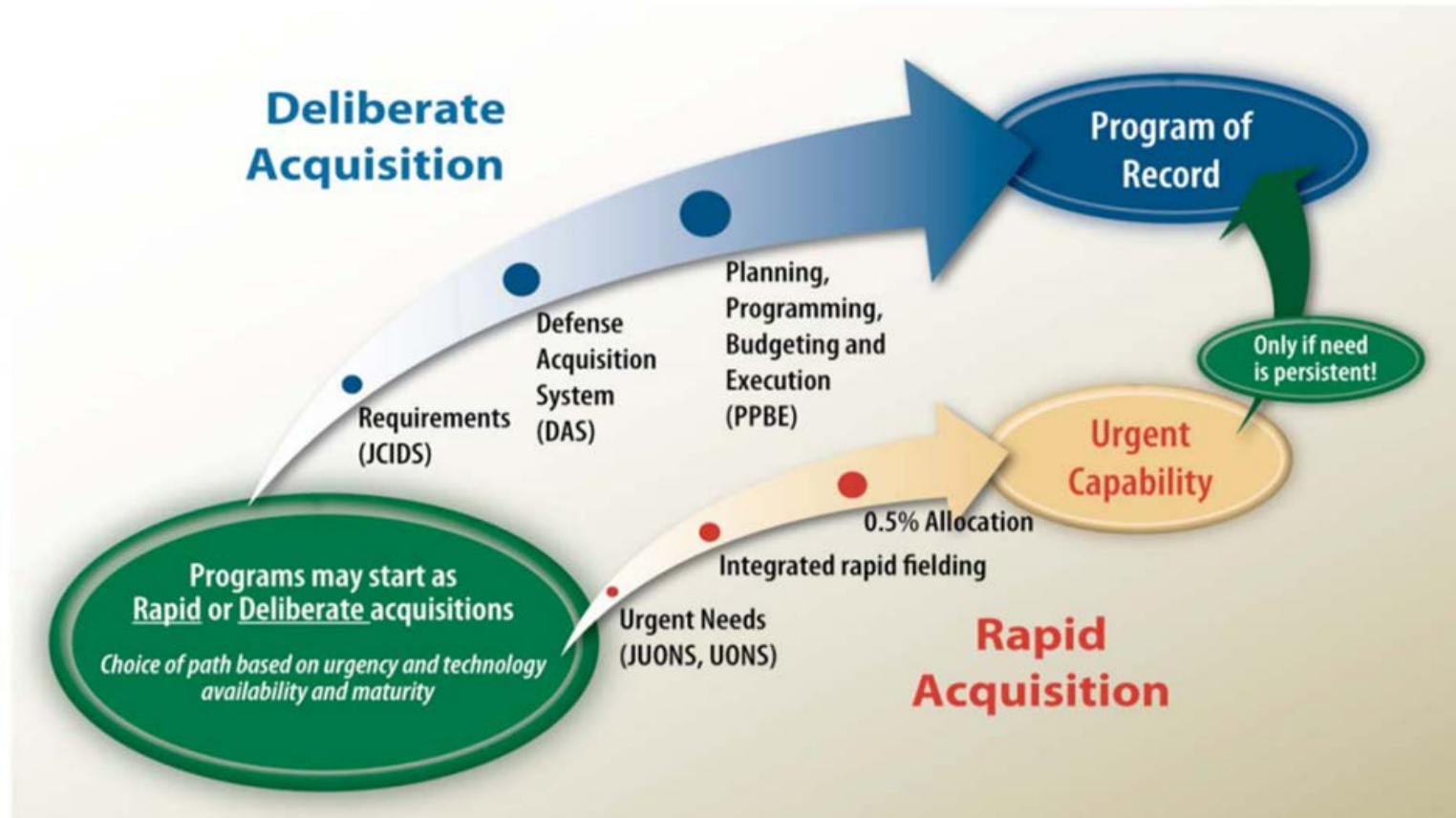
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# Research Idea

- **Agencies are searching for ways to deliver critical mission functionality more quickly and with less risk**
- **Generating confident and credible cost estimates is a challenge when programs may have less definition, greater uncertainty, and fast timelines**
- **Research Goals:**
  - Provide a deeper understanding of cost implications in rapid acquisition environments
  - Develop methods of costing rapid acquisition projects in a consistent and repeatable way

# Rapid vs. Deliberate Planning



**“Rapid” generally entails reduced documentation, empowered decision making, and less oversight to meet shortened schedules**

Source: Defense Science Board Joint Task Force, “Fulfillment of Operational Needs” 2009.

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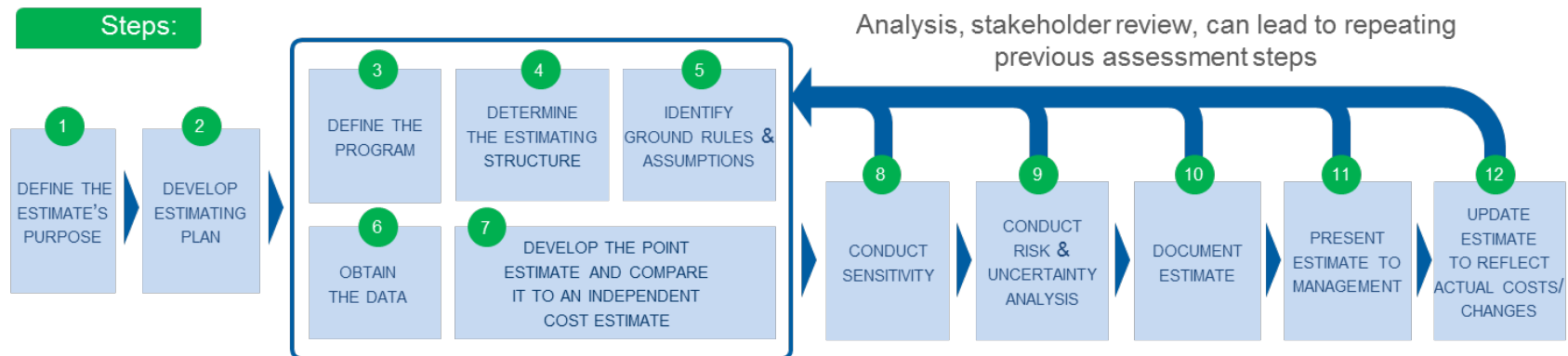
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# Case Studies Methodology\*

- **Applied research design and methods specific for case study research**
  - Established theoretical framework to guide research and map findings
  - Standardized data process and collection tools
  - Removed unintentional bias; ensured recommendations and findings are applicable to the broader community
- **Theoretical Framework is based on best practice in cost estimating community**

## GAO Cost Estimating and Assessment Guide<sup>1</sup>



\*Adapted from Case Study Research Design and Methods by Robert Yin (2014)

<sup>1</sup> References: GAO Cost Estimating and Assessment Guide (GAO-09-3SP) (March 2009)

# Findings: Cost Estimating in a Rapid Environment

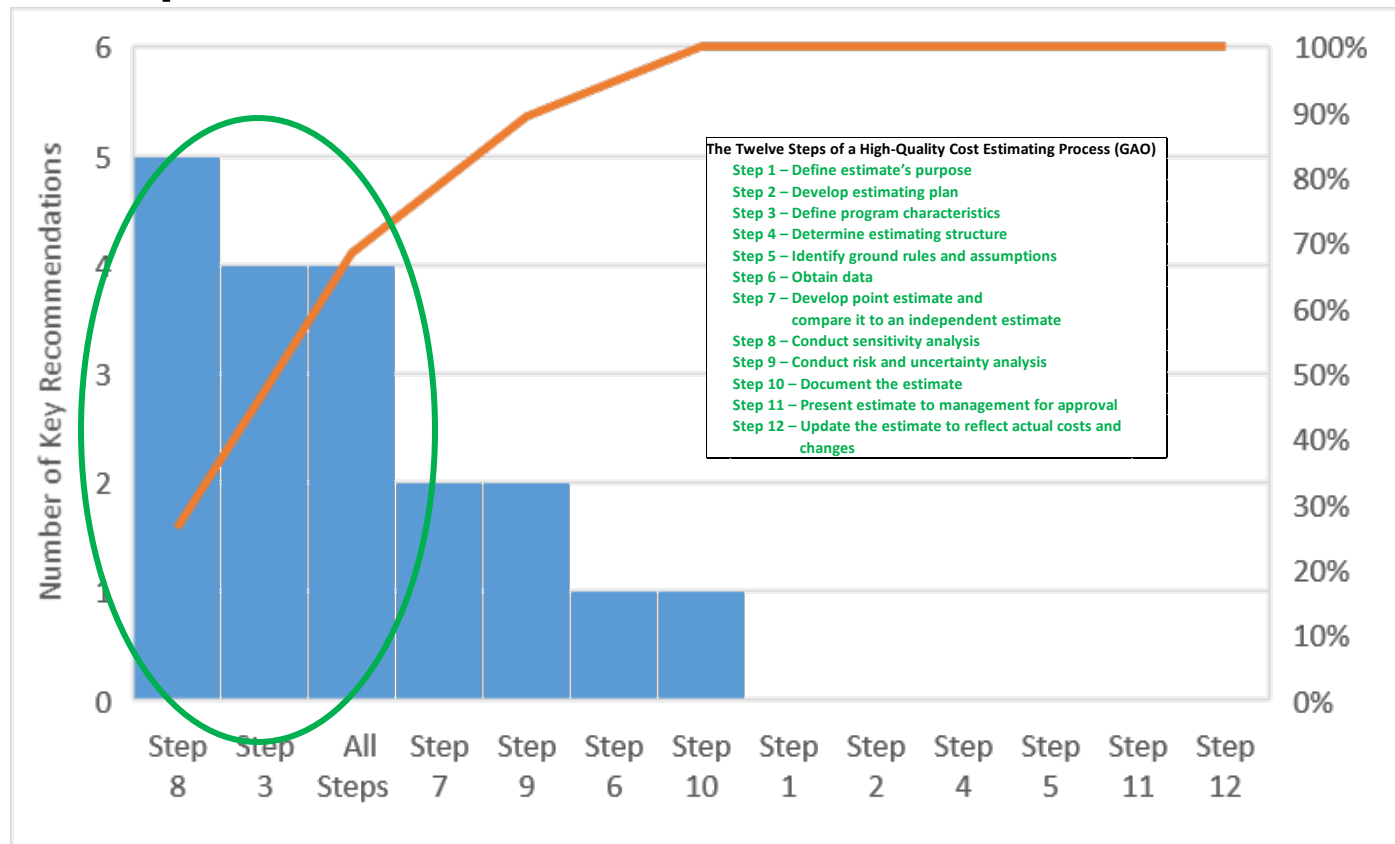
- **Findings identified rapid acquisition characteristics that impact cost methods**
  - Rapid acquisition emphasizes delivery of a capability quickly which causes very short acquisition timelines
  - In order to achieve these shortened timelines, rapid programs operate at a fast pace and have a great concurrency of efforts
  - Schedule is the top priority; cost and capability are flexible to support desired schedule
  - There are many rapid acquisition approaches that vary in solution maturity, size, type, timeline, and acquisition strategy
- **Rapid acquisition compressed timelines pose unique challenges to the cost estimating process**
- **Recommendations were made to specifically address these challenges while considering the constraints of rapid environments**

# Findings: Cost Estimating Challenges

Little time to collect data  
Quick turnaround initial estimates  
Adjusting for abbreviated processes  
Fast pace  
**Increased uncertainty/risk**  
Many trade-offs required  
Technical baseline maturity  
Documentation not top priority  
Transition planning varies

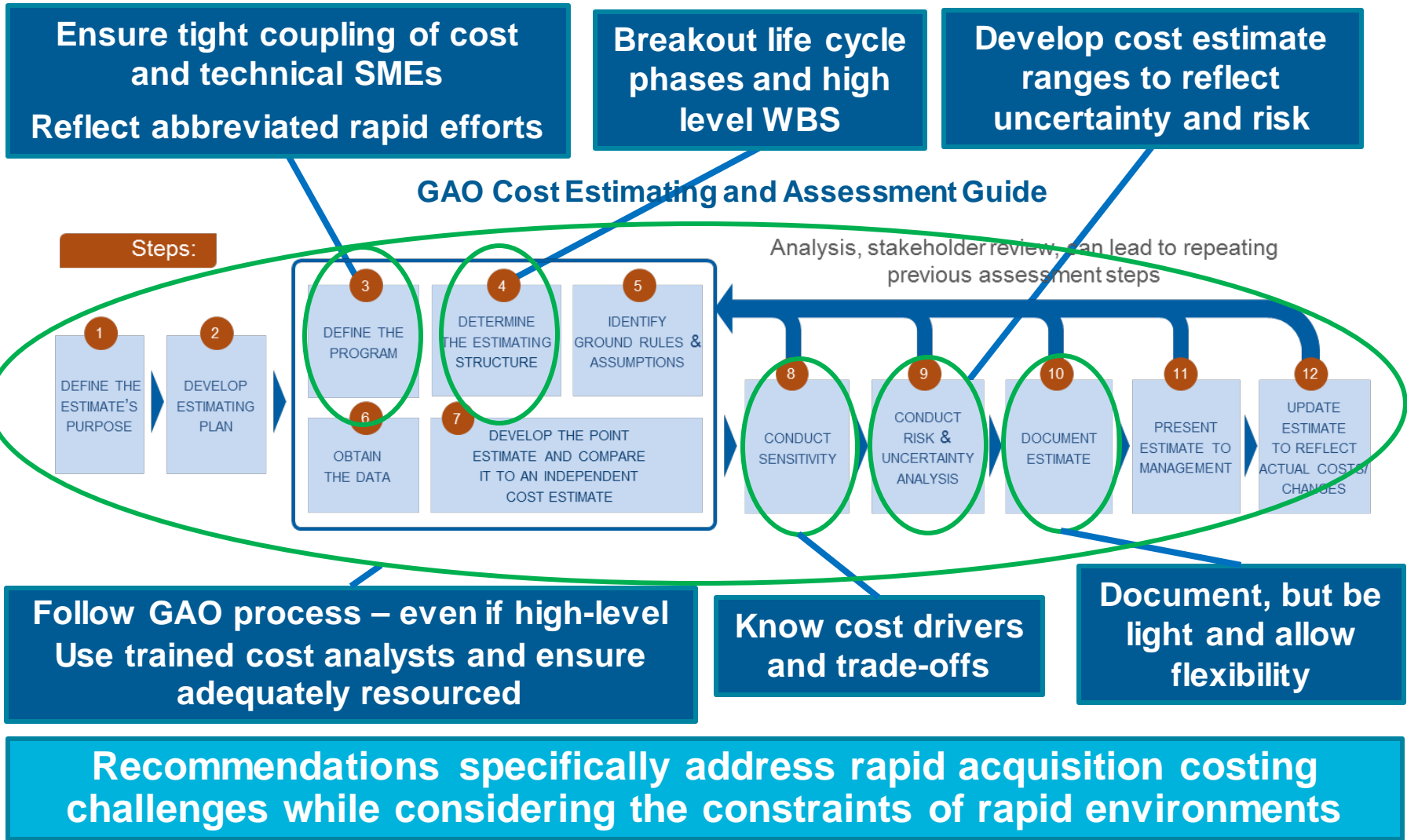
# Recommendations by GAO Step

- Number of key recommendations counted for each of the 12 GAO Steps



- Step 8, Step 3, and 'All Steps' had greatest number of key recommendations

# Recommendation Summary





# Application Considerations

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- **Consider the following factors when applying recommendations:**
  - Rapid acquisition approach
  - Size of program (\$)
  - New program start vs established program
  - Timeline
  - Solution maturity
  - Solution complexity

# Summary

- **Multiple programs and SMEs were interviewed across a variety of rapid acquisition program types and solutions**
- **Key recommendations include:**
  - Apply the GAO 12 step process – even if high-level
  - Use trained cost analysts and engage them early and ensure they are adequately resourced
  - Develop cost estimate ranges to reflect uncertainty and risk in rapid acquisitions
  - Know cost drivers and trade-offs
  - Understand and reflect abbreviated acquisition and technical efforts
  - Document, but be light and flexible
- **Recommendations are easily applied and adaptable to the variety of rapid acquisition approaches**
- **Recommendations align with established cost estimating best practices that help ensure confident, credible, and reliable cost estimates are developed**