Appendix A: CAPTool Quick Start Guide
CAPTool Overview

In the simplest terms, CAPTool accepts user inputs about assets of interest and relevant hazards and helps planners and asset managers identify countermeasure options and cost estimate for implementing these countermeasures.

The CAPTool process, illustrated below, advances the user through a series of steps that capture relevant input provided by the user and choices made by the user, resulting in a list of selected countermeasures for assets of interest and an order of magnitude cost estimate for implementing these countermeasures.

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**BASIC Versus EXPANDED CAPTool PROCESS**

In the Basic CAPTool process, users accept the default calculations, costs, and assumptions and can arrive at results quickly. Minimum data must be entered. The Expanded CAPTool gives users access to the variables in the entire process, including threshold values and costs of countermeasures, and allows the user to apply individual filters to countermeasure selection.
STEP 1. RELEVANT RISK SELECTION

In STEP 1, users identify

- Hazards and threats
- Asset classes

Choose asset classes and hazards based on agency relevance. SELECT “Y” for each asset class and hazard to include in the CAPTool analysis as illustrated below.

USEFUL AGENCY INFORMATION

- Hazard maps, historical records and data, pertaining to experienced hazards and threats.
- Other events or disruptions to be included in the analysis such as extreme weather events or earthquakes.
STEP 2. CONSEQUENCE THRESHOLDS

In STEP 2, users establish the consequence thresholds for each asset class related to level of risk to the population, property loss or service disruption. The choice of a threshold does not mean that losses below this level are unimportant or inconsequential; it means that losses below this level can be managed operationally and within the existing resources of the agency.

Select consequence thresholds for each asset class for:

- Potentially Exposed Population
- Property Loss
- Mission Importance Functions

The user can alter and adjust the threshold levels in subsequent iterations with the CAPTool to conduct a sensitivity analysis to determine how such changes might affect the number and types of assets that remain on the high consequence list.
STEP 3. DESCRIBE ASSETS/ASSET CLASS INVENTORY

In STEP 3, users enter all the assets and asset classes to be considered by the CAPTool into the appropriate transportation mode sheet. The modes are those selected in Step 1.

For each asset class (on separate spreadsheets per asset class) enter the assets or groups of assets into the spreadsheet.

The inputs for road bridges/tunnels contain a user input for cable stay and suspension bridges. These highly individual structures require specific replacement cost data. Note that buildings are only critical if the user marks them as such in the last column.

Once the data for each asset class has been entered, click CALCULATE CRITICALITY. CAPTool then calculates which of the assets/asset classes exceed the thresholds chosen by the user.
STEP 4. CRITICAL ASSETS DISPLAY

In STEP 4, the user views the “high consequence” assets arrayed against the hazards and threats to which they are vulnerable.

CAPTool has combined results from steps 2 and 3 to identify the assets and asset classes that exceed one or more consequence threshold. These assets and asset classes are presented in columns on the same page as the rows of hazards and threats, located in the first column.

USEFUL AGENCY INFORMATION

Critical agency specific assets not listed using the current CAPTool threshold criteria to be included as either a manual override or by adjusting threshold criteria, designed to manage.
STEP 5. COUNTERMEASURE OPPORTUNITIES

In Step 5, CAPTool displays the potentially effective countermeasures that have been deemed appropriate and likely to assist in mitigating the consequence to the specific asset or asset class for the selected hazards.

The options are shown using a color code to indicate countermeasures considered to be highly or moderately effective: gold for high effectiveness, yellow for medium effectiveness.

For each asset, enter the quantity of potential countermeasure you want to include in the budget analysis. If you want to examine an asset in further detail, set the asset and click on the ANALYZE ASSET button.
STEP 6. RESULTS SUMMARY

In STEP 6, CAPTool provides the user with a one-page summary of consequence-based results and countermeasure combinations across multiple modes of transport. The summary is provided by asset category with optional spreadsheets available for individual assets.

SAVE RESULTS OPTIONS

Save Results Only – Saves results of Summary Report.

Save Time-Stamped Copy - Saves copy