

# Methods and Tools for Freight Flow Disaggregation

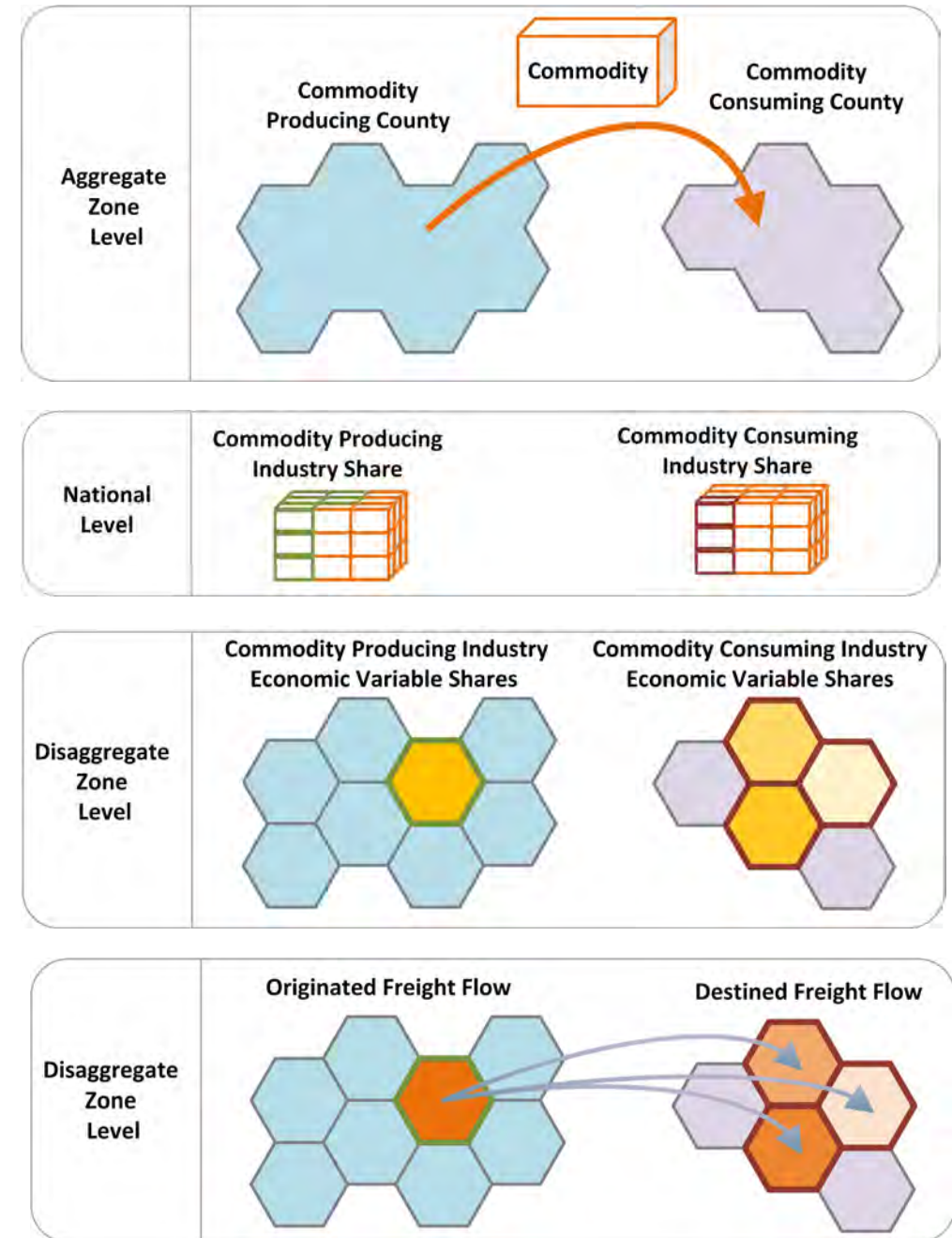
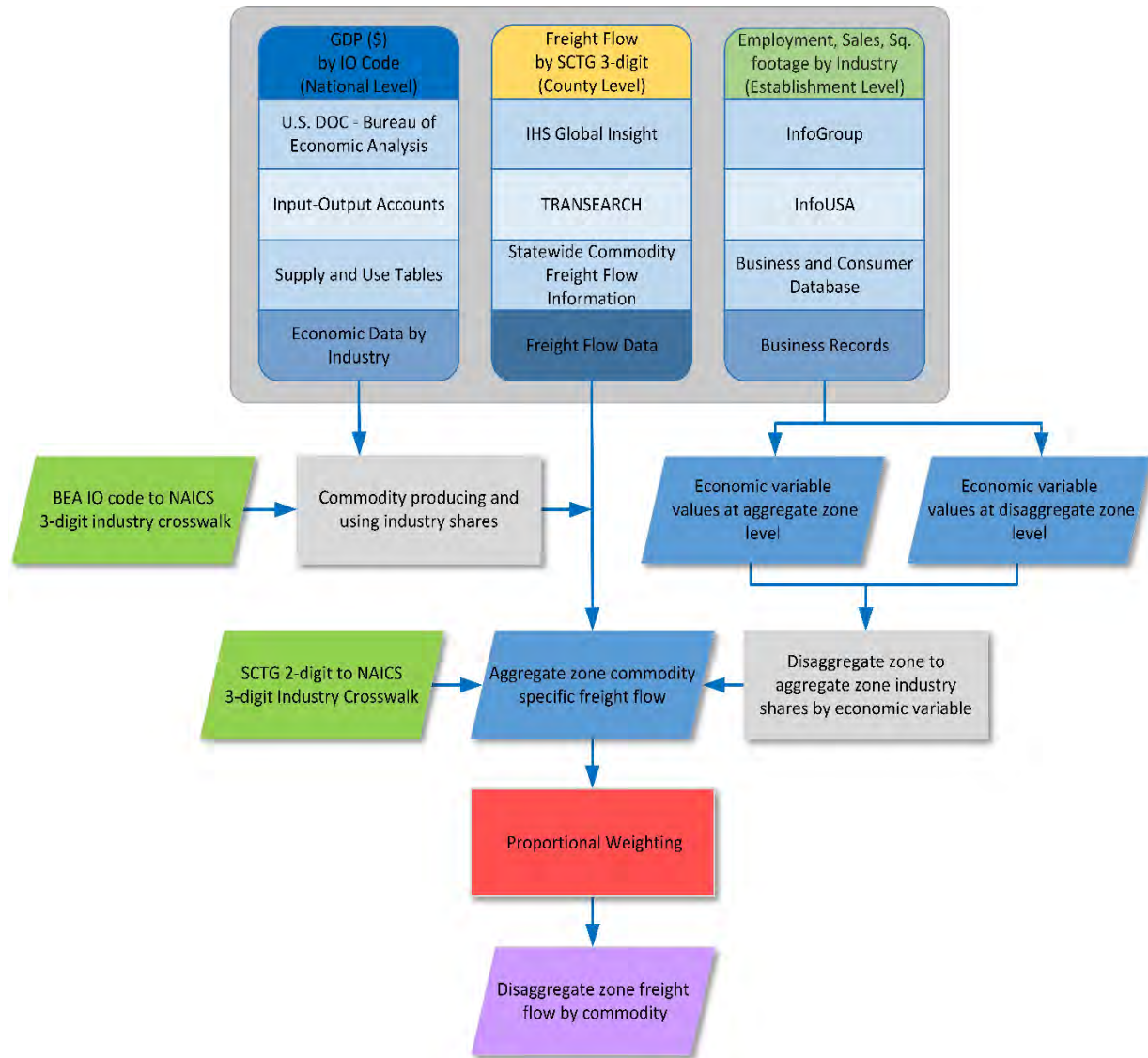


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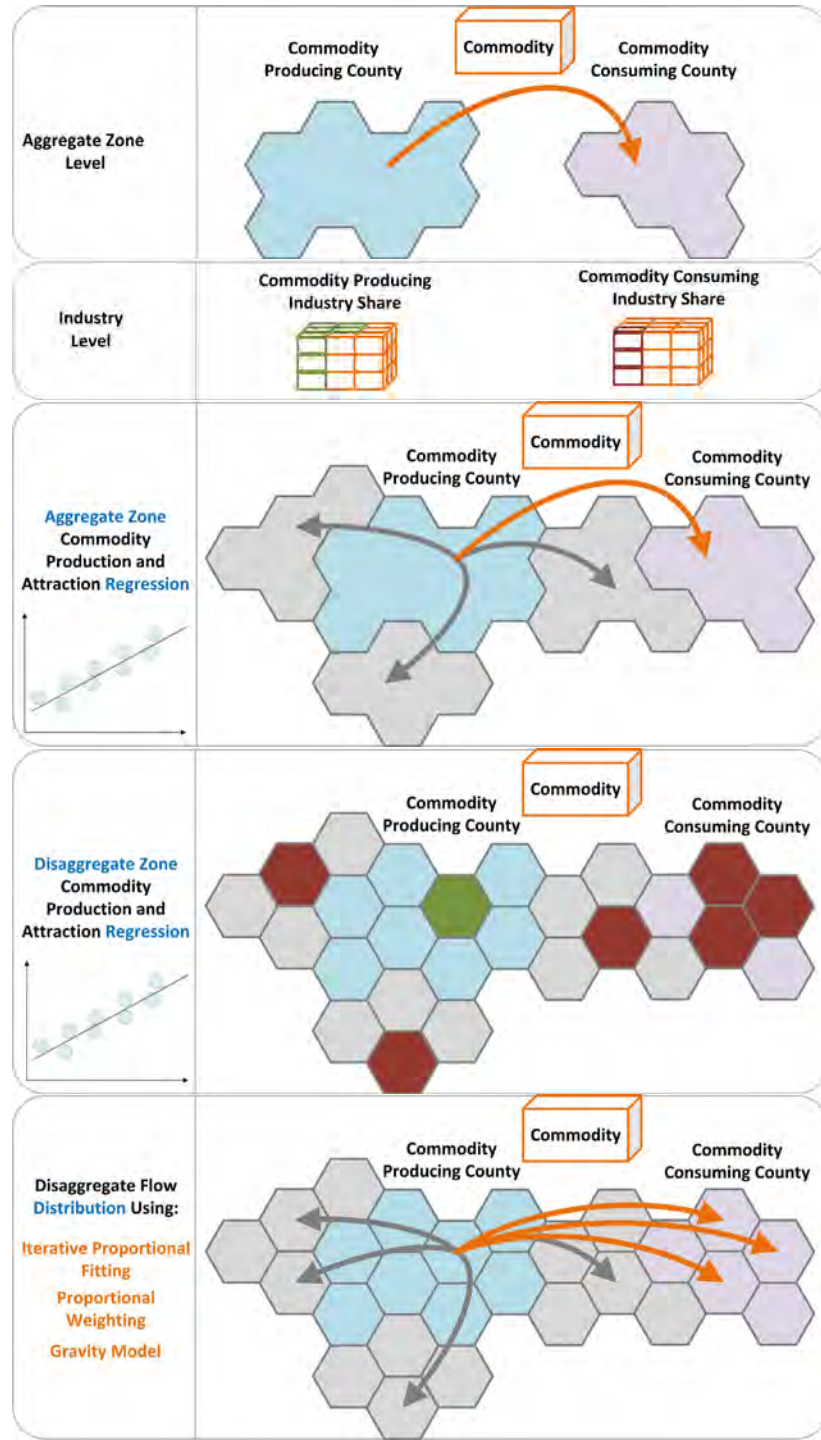
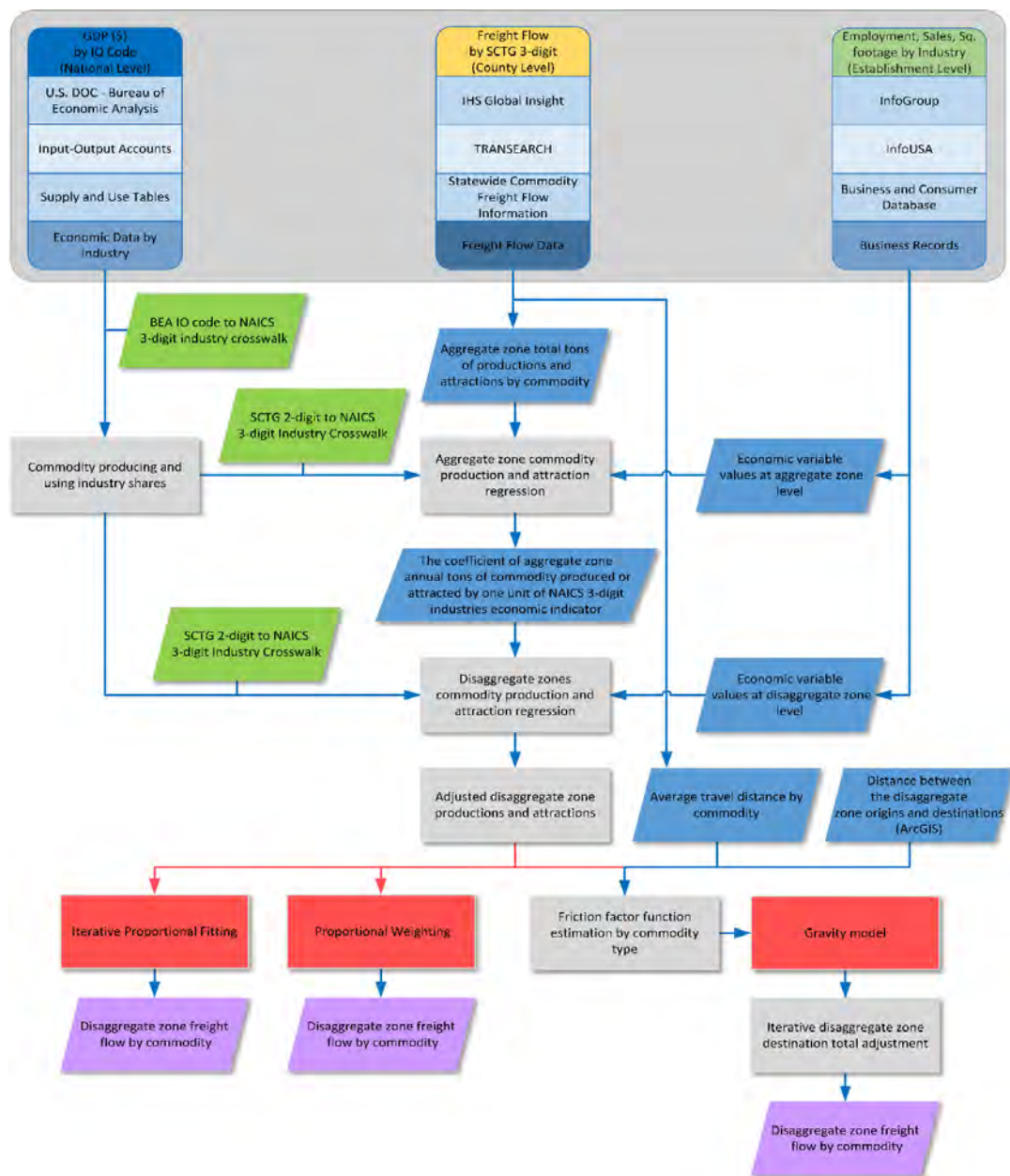
# Disaggregation Methodologies for Commodity Freight Flows

- **Method I: Industry and Economic Indicator Proportional Weighting**
  - The relationship between commodity producing and using industries
  - The relationship between the disaggregate zone freight flow to aggregate zone freight flow are assumed to be proportional to the industry economic indicator shares
- **Method II: Industry Proportional Weighting and Economic Indicator Regression**
  - The relationship between commodity producing and using industries
  - The relationship between the aggregate zone economic indicators and freight flow productions and attractions

# Method I: Industry and Economic Indicator Proportional Weighting



# Method II: Industry Proportional Weighting and Economic Indicator Regression

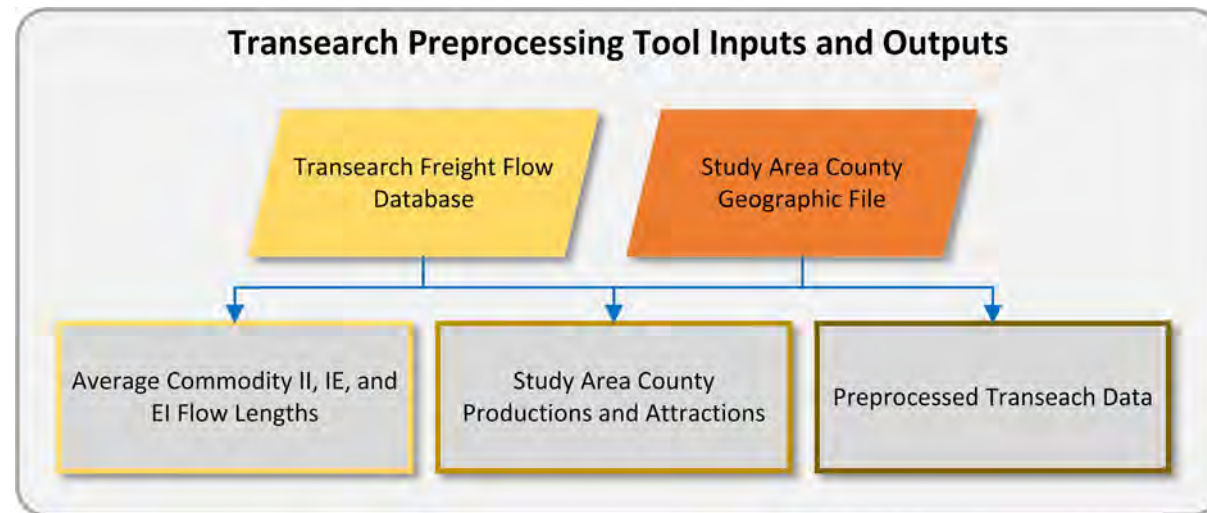


# ArcGIS Tools

- Step 1: Preprocessing
  - Transearch Preprocessing Tool
  - Spatial and Economic Data Preprocessing Tool
  - IO Accounts Supply and Use Table Conversion Tool
- Step 2: Disaggregation
  - IO Accounts and Proportional Weight Disaggregation Method Tool
  - IO Accounts and Regression Disaggregation Method Tool
- Step 3: Postprocessing
  - PA Estimation OD Selection Tool
  - PA MAP Tool
  - OD MAP Tool

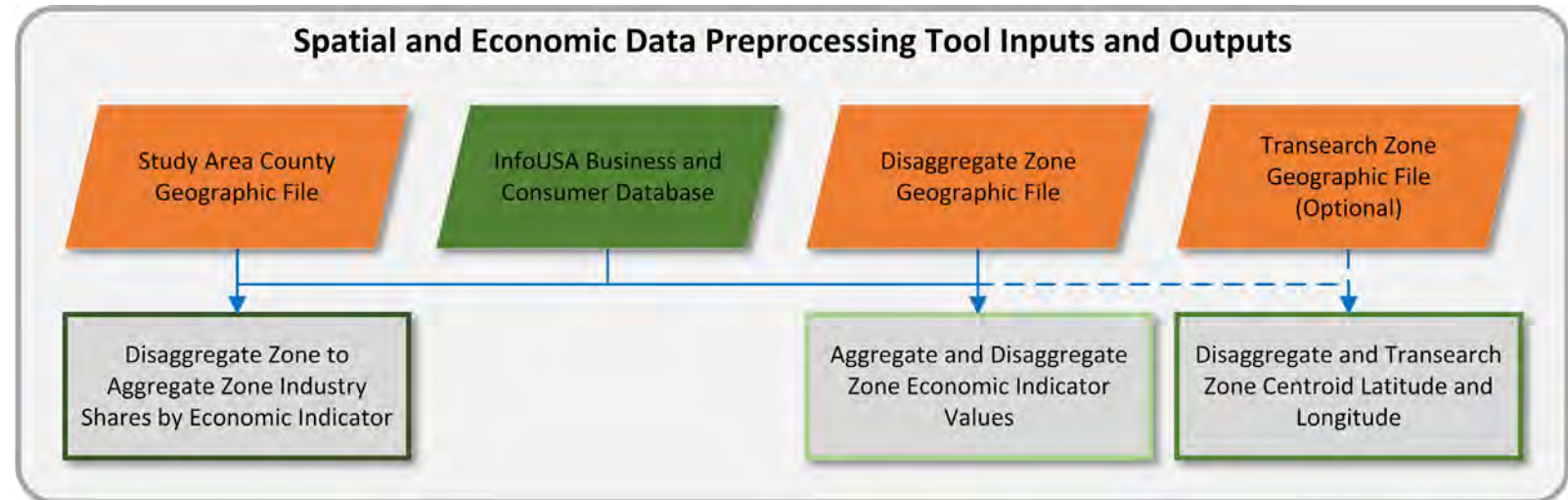
# Preprocessing tool: Transearch Preprocessing Tool

The screenshot shows the 'Transearch Preprocessing Tool' dialog box. It features several input fields and checkboxes. At the top, there are fields for 'Transearch Database' and 'County File', each with a folder icon. Below these are three checked checkboxes: 'Production and Attraction Estimation (optional)', 'Average Commodity Flow Length Estimation (optional)', and 'Export Data by Unique Field Attributes (optional)'. A section titled 'Unique Field Attributes (optional)' contains a list of attributes with checkboxes: 'County' (checked), 'SCTG 2D' (checked), 'Equipment' (unchecked), 'Trade Type' (unchecked), and 'Mode' (unchecked). Below this list are 'Select All', 'Unselect All', and 'Add Value' buttons. Further down, there is an unchecked checkbox for 'Select Data by County (optional)' and a 'Counties (optional)' list box with its own 'Select All', 'Unselect All', and 'Add Value' buttons. At the bottom, there is an 'Output Folder' field with a folder icon. The dialog concludes with 'OK', 'Cancel', 'Environments...', and '<< Hide Help' buttons.



# Preprocessing tool: **Spatial and Economic Data Preprocessing Tool**

The screenshot shows the 'Spatial and Economic Data Preprocessing Tool' window. It features several input fields and checkboxes. The 'InfoUSA Database' field is empty. The 'County File' and 'Disaggregate Zone File' fields are also empty. The 'Disaggregate Zone Spatial Identifier' is set to 'TAZ'. Under 'Economic Indicators', 'Employment', 'Sales', and 'Square Footage' are checked. There are buttons for 'Select All', 'Unselect All', and 'Add Value'. Below these are three optional checkboxes: 'Estimate Disaggregate to Aggregate Zone Economic Indicator Shares (optional)', 'Estimate Economic Indicator Values for Each Aggregate and Disaggregate Zone (optional)', and 'Estimate Disaggregate and Transearch Zone Centroid Latitude and Longitude (optional)'. The 'Transearch Zone File (optional)' field is empty. The 'Output Folder' field is empty. At the bottom, there are buttons for 'OK', 'Cancel', 'Environments...', and '<< Hide Help'.



# Preprocessing tool: IO Accounts Supply and Use Table Conversion Tool

IO Accounts Supply and Use Table Conversion Tool

- IO Accounts Supply Table
- IO Accounts Use Table
- IO Accounts Industry Code to NAICS 3-digit Code Crosswalk Table

Convert IO Accounts Supply and Use Tables to NAICS 3-digit Code (optional)

Estimate IO Accounts Supply and Use Commodity Producing and Using Industry Shares (optional)

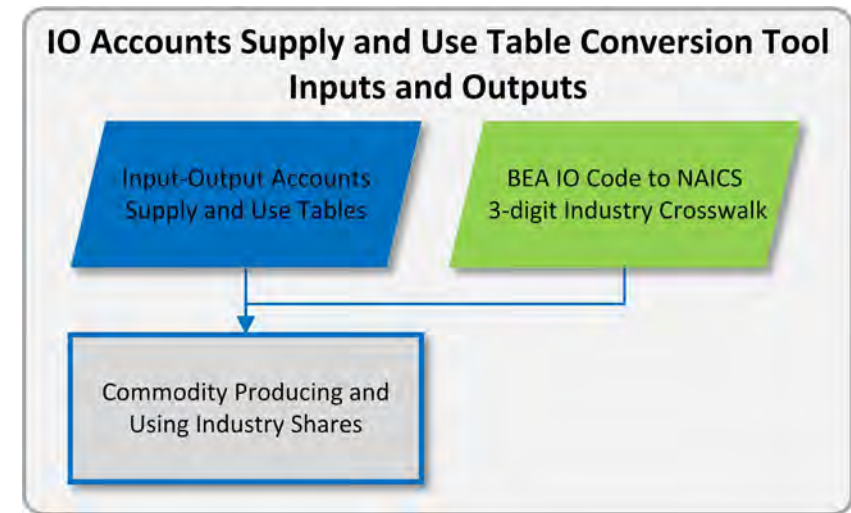
Estimate IO Accounts Supply and Use Commodity Producing and Using Industry Shares with a Minimum (%) of Shares (optional)

Minimum (%) of Commodity Producing and Using Industry Share (optional)

10

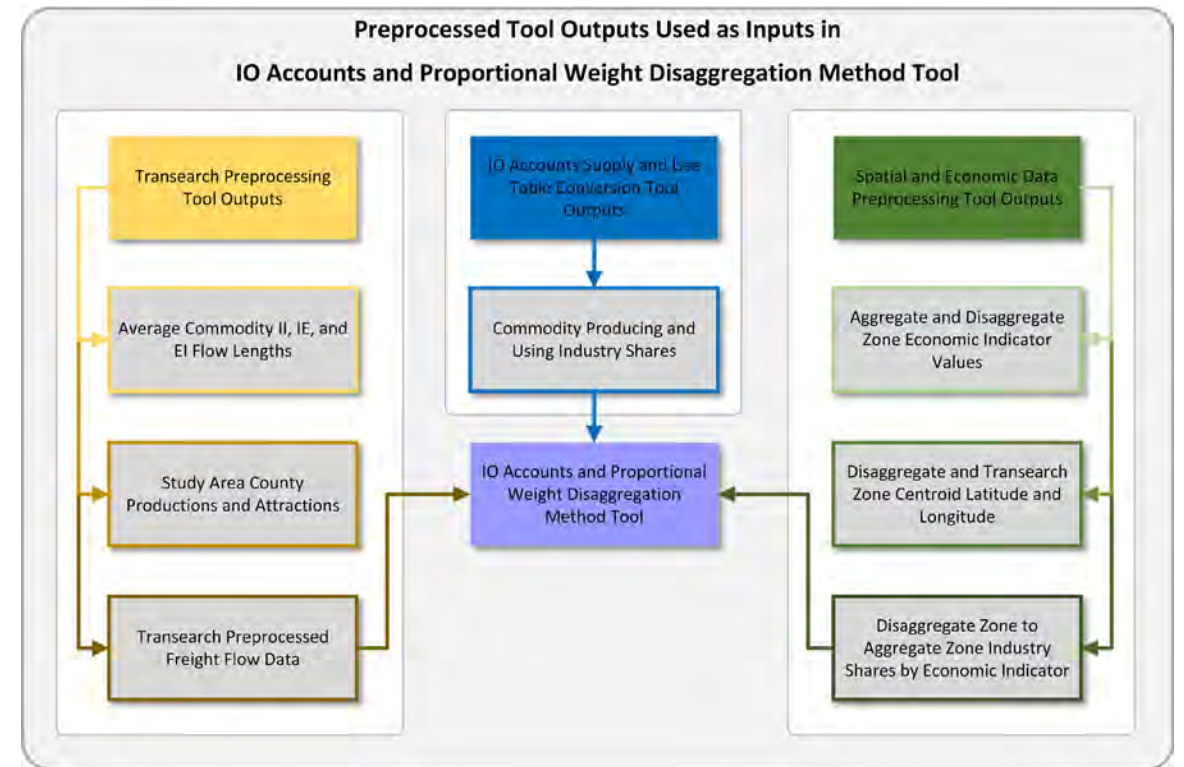
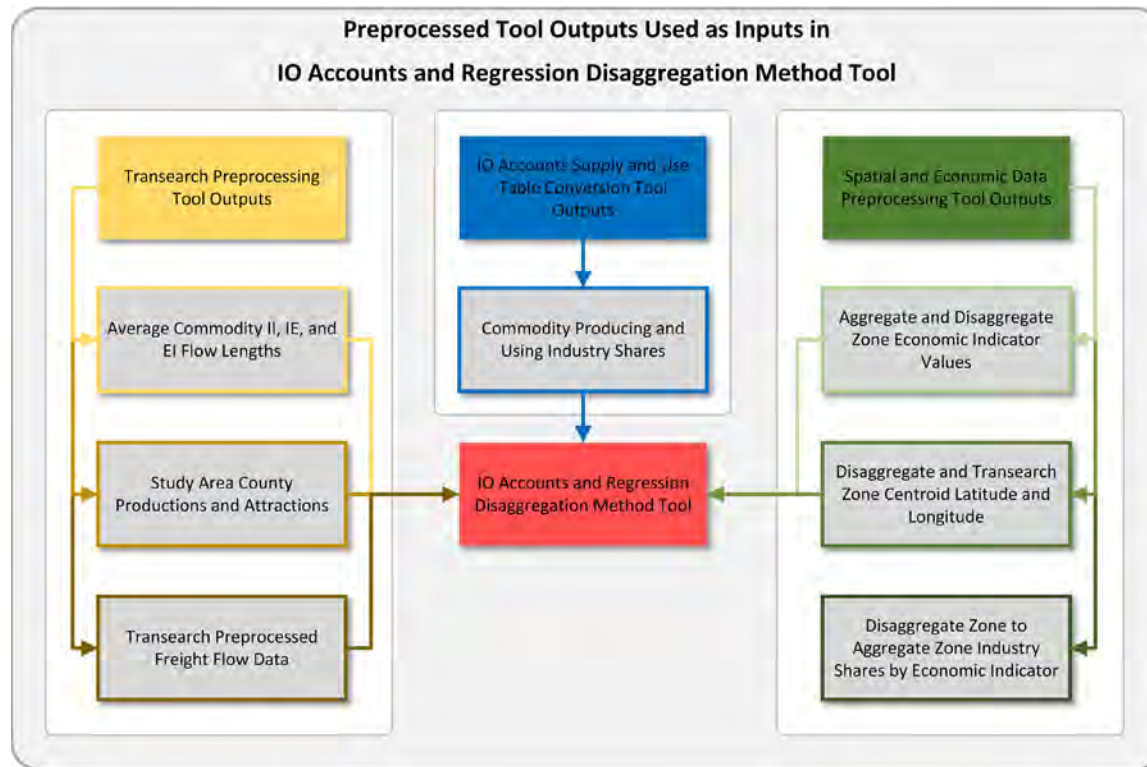
Output Folder

OK Cancel Environments... << Hide Help











# Outputs from Preprocessing Tools Used in the Disaggregation Tools

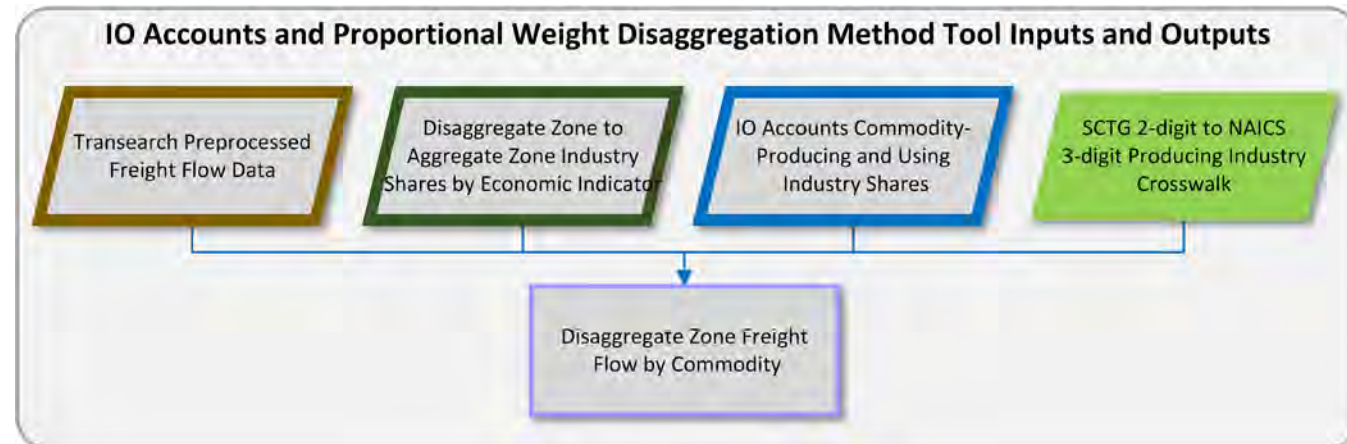


# Disaggregation tool: IO Accounts and Proportional Weight Disaggregation Method Tool

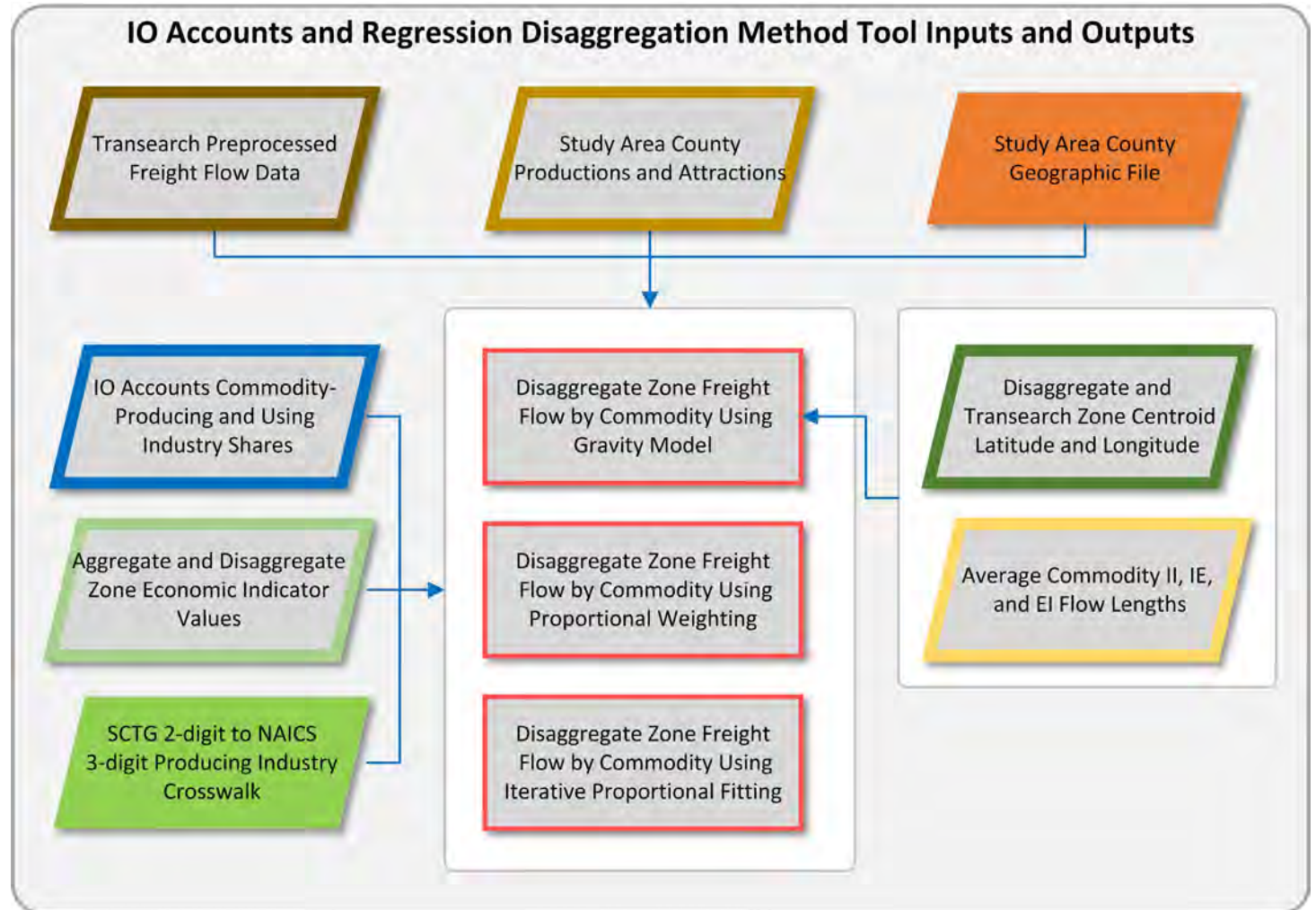
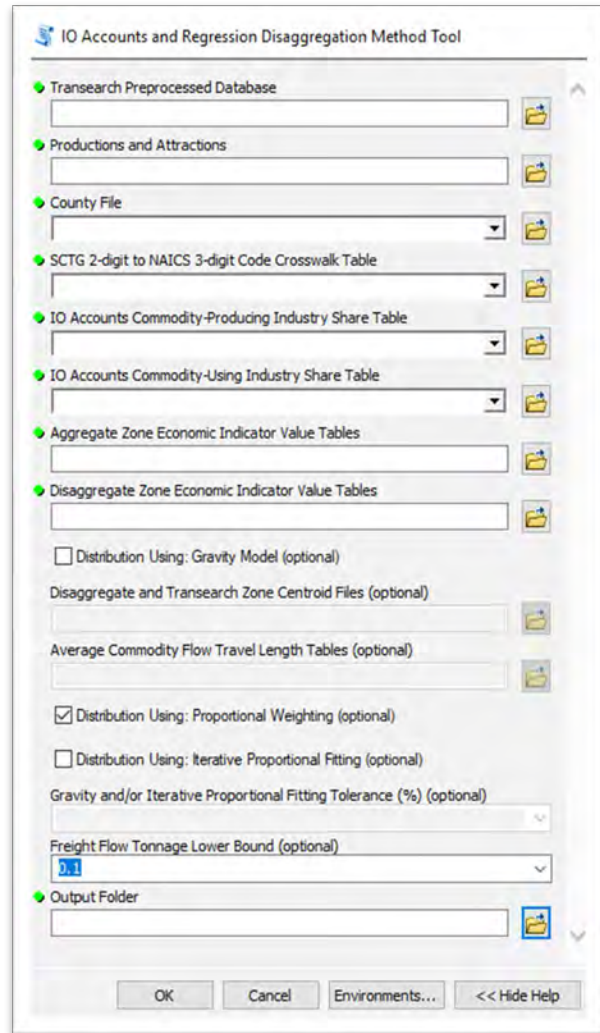
IO Accounts and Proportional Weight Disaggregation Method Tool

- Transearch Preprocessed Database  
- Economic Indicator Spatial Share Table  
- SCTG 2-digit to NAICS 3-digit Code Crosswalk Table  
- IO Accounts Commodity-Producing Industry Share Table  
- IO Accounts Commodity-Using Industry Share Table  
- Freight Flow Tonnage Lower Bound
- Output Folder  

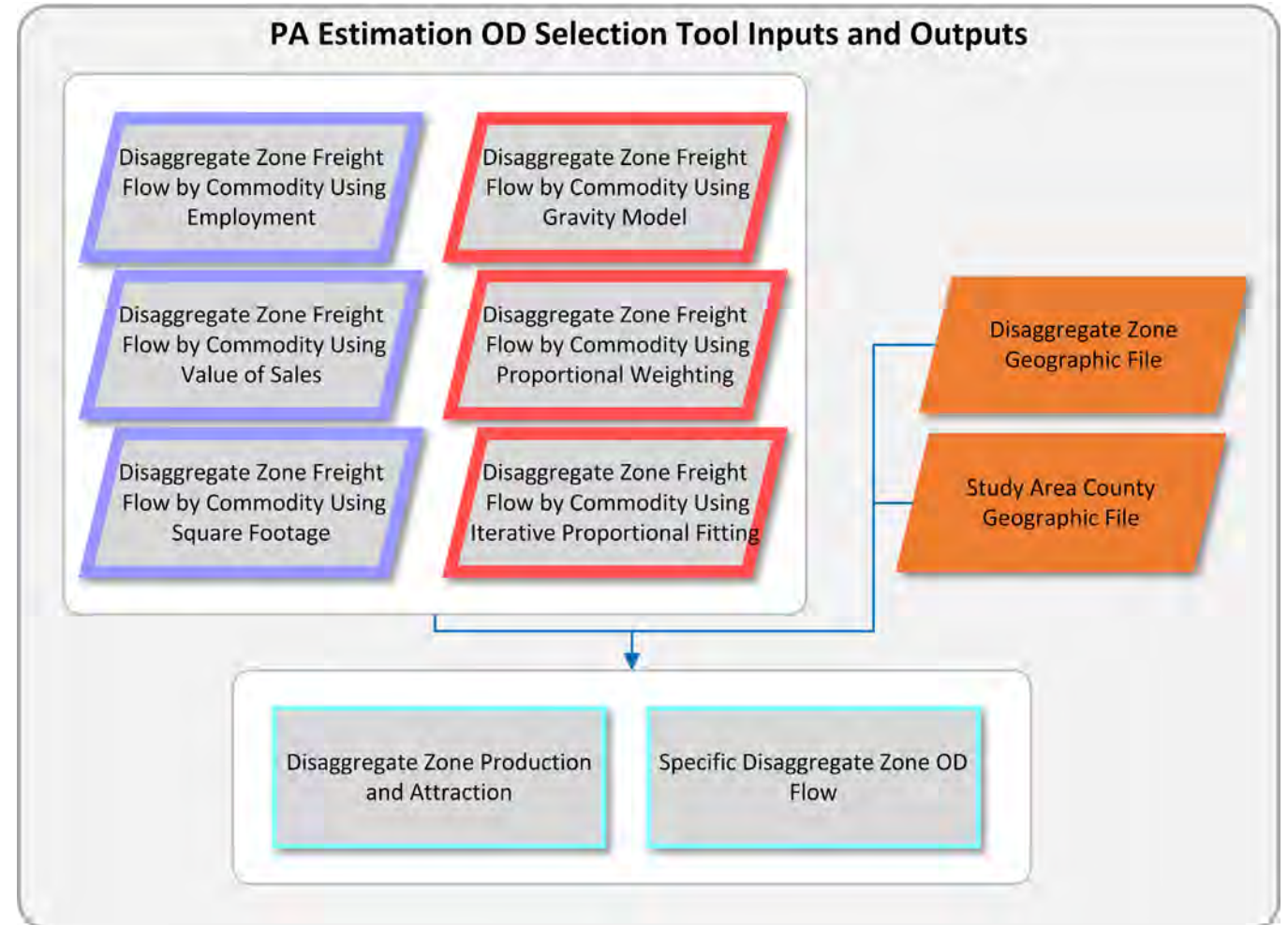
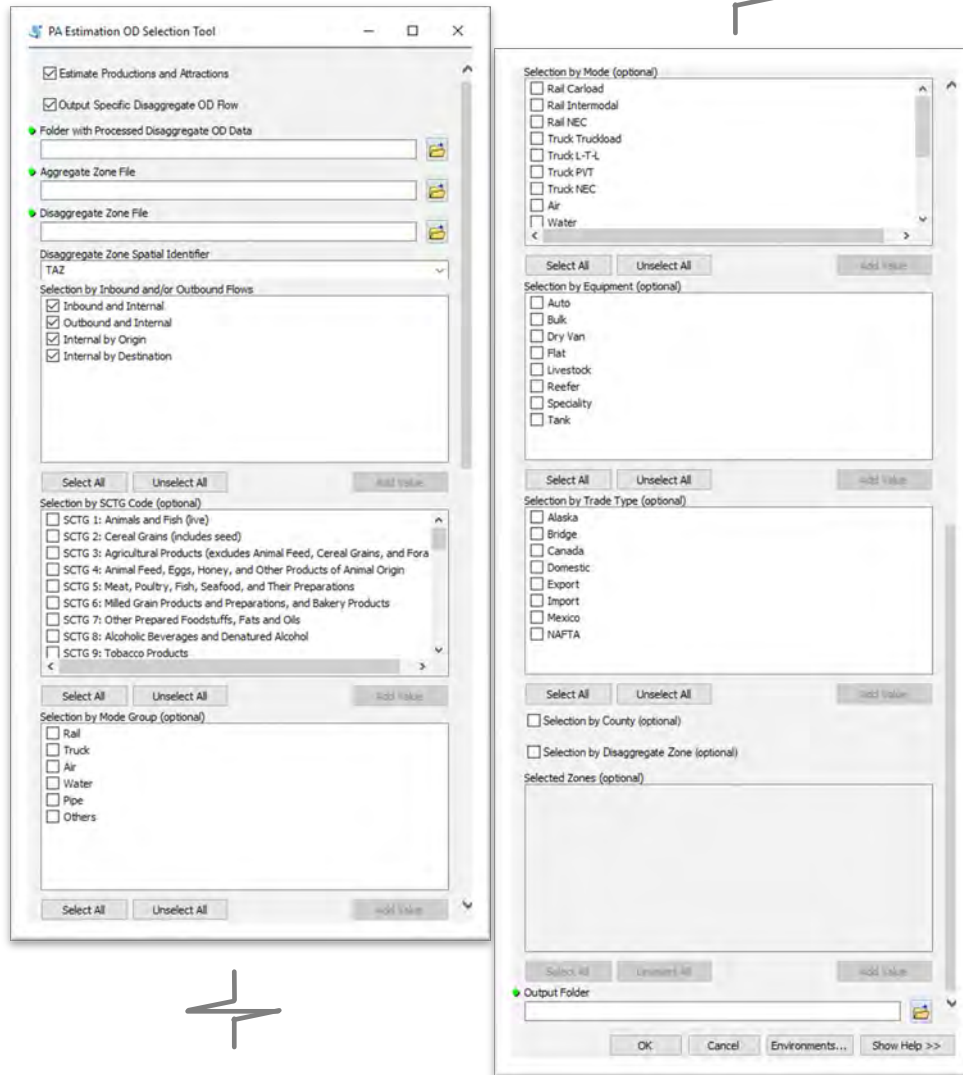
OK Cancel Environments... << Hide Help



# Disaggregation tool: IO Accounts and Regression Disaggregation Method Tool



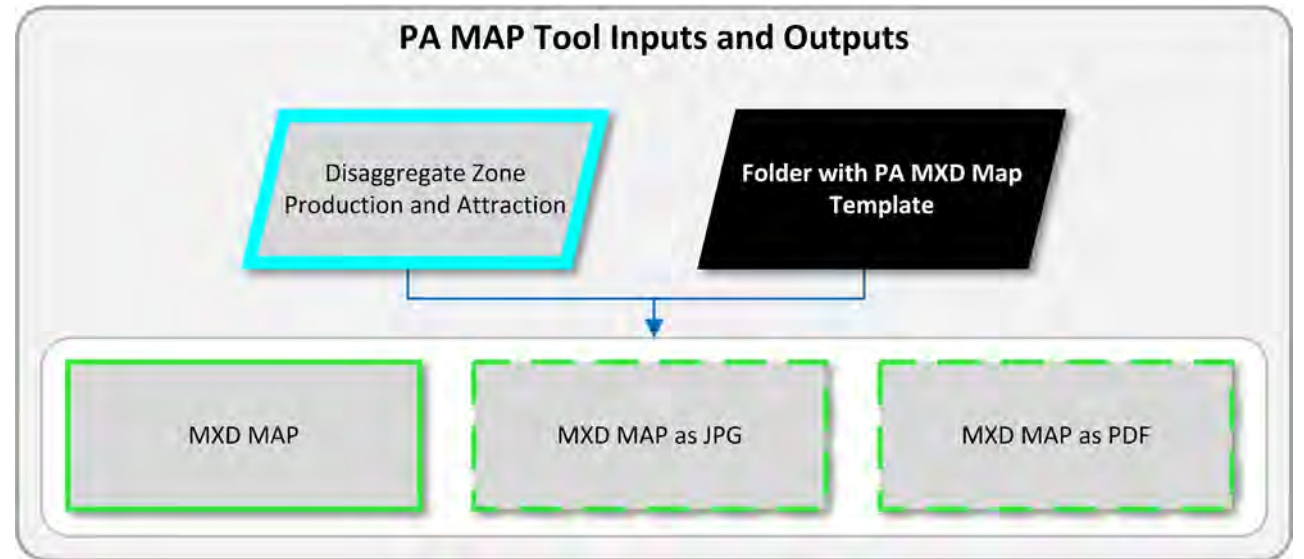
# Postprocessing tool: PA Estimation OD Selection Tool



# Postprocessing tool: PA MAP Tool

The screenshot shows the PA MAP Tool dialog box with the following fields and options:

- Folder with Estimated Productions and Attractions: [Empty text box]
- Folder with PA MXD Map Template: [Empty text box]
- Disaggregate Zone Spatial Identifier: TAZ
- Specify Units:
  - Tons
  - Units
  - Value
- Buttons: Select All, Unselect All, Add Value
- Export Maps as JPG (optional):
- Export Maps as PDF (optional):
- Bottom buttons: OK, Cancel, Environments..., << Hide Help



# Postprocessing tool: **OD MAP Tool**

