POST PROCESSING OF MODEL RESULTS

MTMUG

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IOWADOT

POST PROCESSING OF MODEL RESULTS

Presentation Purpose:

- **To document two techniques for taking model Flow and Adjusted Flow data and creating a final balanced forecast.**
- **What is adjusted flow? It is a future year flow that accounts for the any validation error inherent in the base year model**
  - Adjustments made by:
    - Ratio [percent growth rate]
    - Absolute [actual difference]
    - Average of Ratio and Absolute

POST PROCESSING OF MODEL RESULTS

Presentation Purpose:

- **Important to know how to do because:**
  - Project Management Team [PMT] / Interstate Justification Report [IJR] require significant post processing
  - Adjusted Flow is not always realistic and rarely creates balanced traffic
  - Turning Movement Diagrams [TMD] are in terms of flows, not necessarily compatible with Adjusted Flows

POST PROCESSING OF MODEL RESULTS

Typical issues with Travel Demand Models;

- **The need for the flow adjustment process**
- **Dissimilar base year counts**
- **Zero or illogical flows can appear in TMDs**
- **Growth in the model may not be inline with expectations**
- **Connectors acting as access points**
- **Potentially the SE data, Network, Trip Rates, etc.**

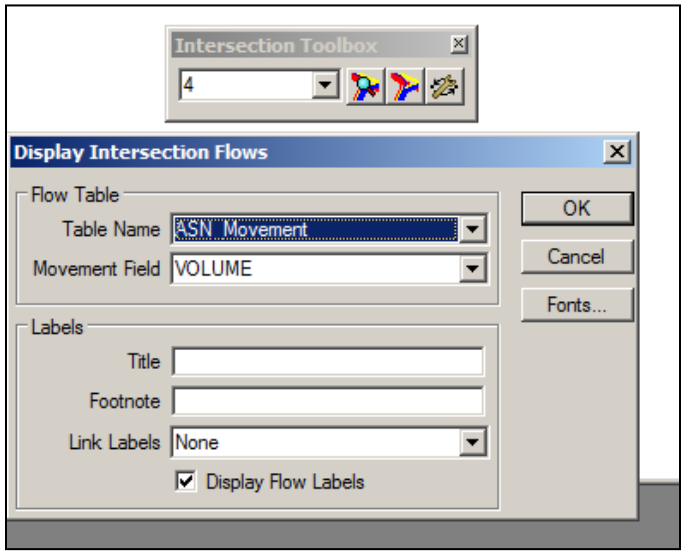
Two techniques for post processing reviewed herein;

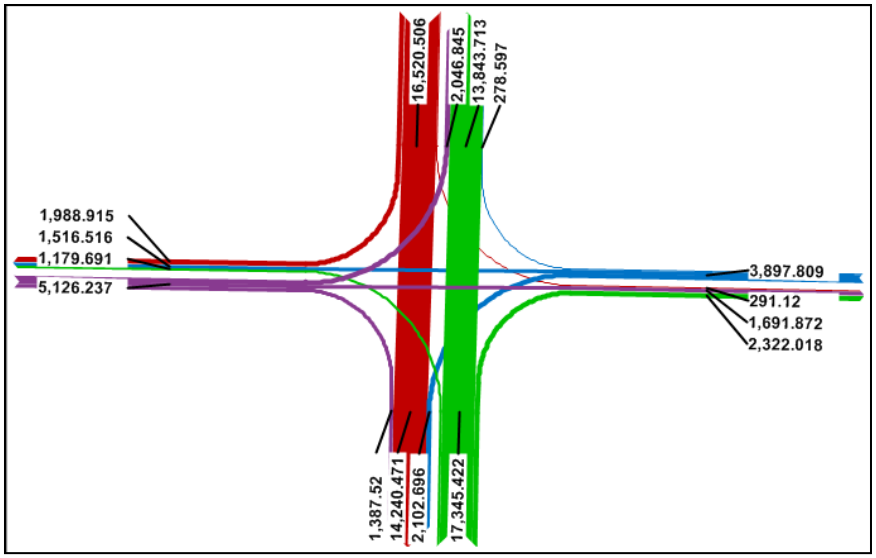
1. **No count data available**
2. **Count data available**

POST PROCESSING OF MODEL RESULTS

Technique 1: No count data available

- **Open a TMD movement file in TransCAD**





Must rely on the model to replicate the pattern of flow

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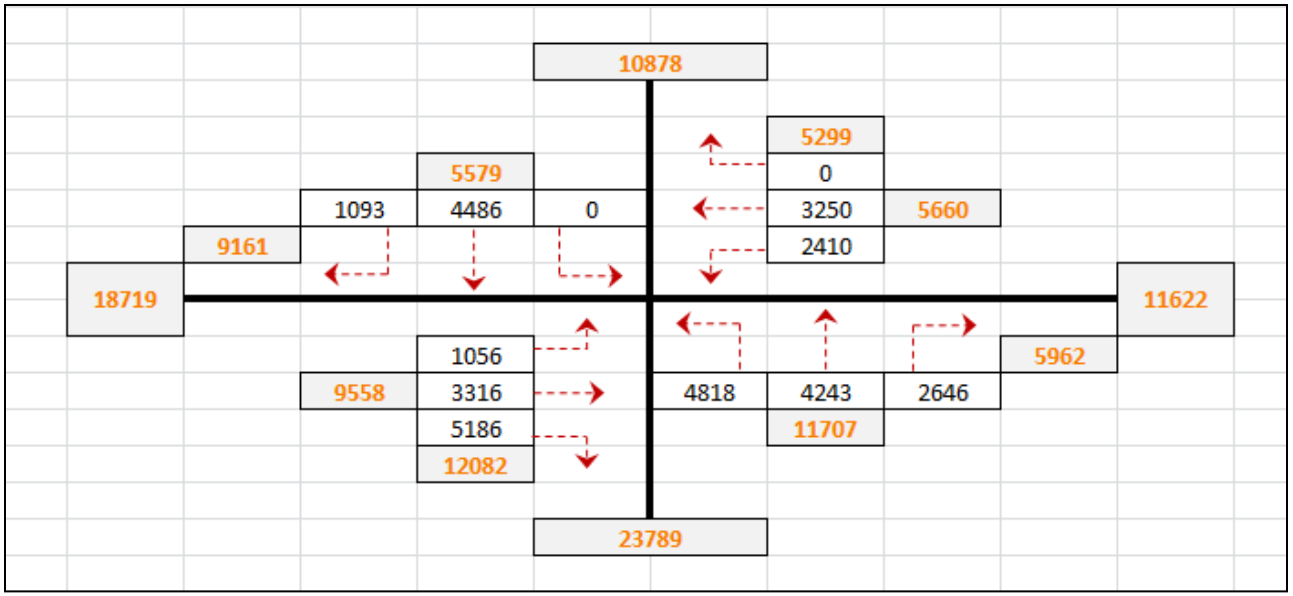
Technique 1: No count data available

- **Enter TMD flows to a Excel schematic for analysis**



This is our starting point, not final figure!

Notice that some values are zero

POST PROCESSING OF MODEL RESULTS

Technique 1: No count data available

- **TMD traffic is un-adjusted, we must incorporate the adjusted flow [when available].**
- **Process**
  - Calculate the flow proportions of a selected leg
  - Apply proportions to an adjusted flow

Items of note:

- Choose legs most important to area of study
- If model performs reasonably well more legs could be matched.

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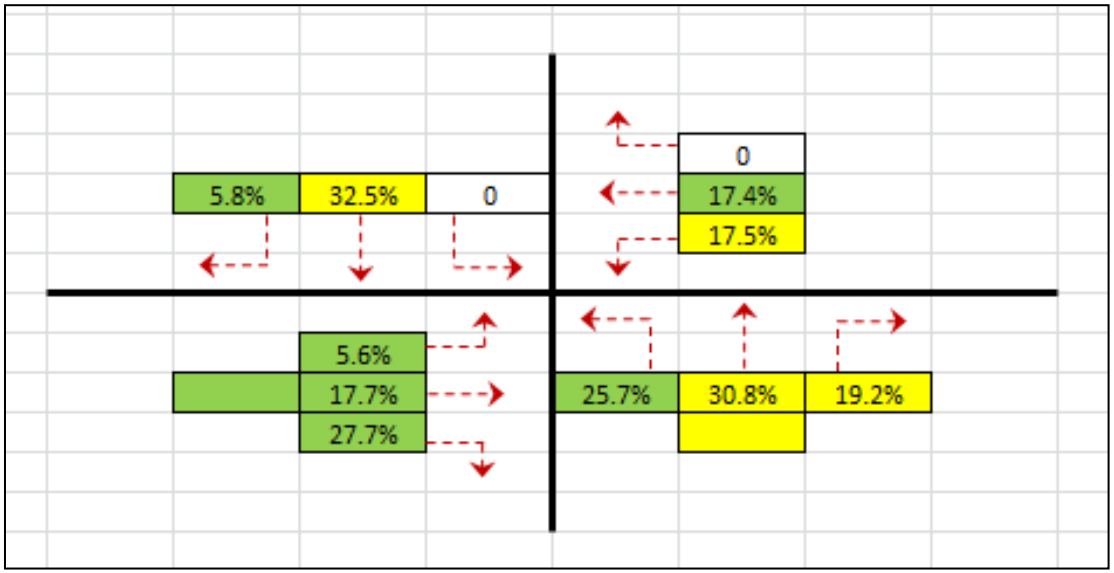
Technique 1: No count data available

- **Selection of the west leg as the primary link, and the south leg as the secondary link to adjust to**



- **Be mindful that the secondary link will overlap with the primary link, so subtract from the adjusted flow**

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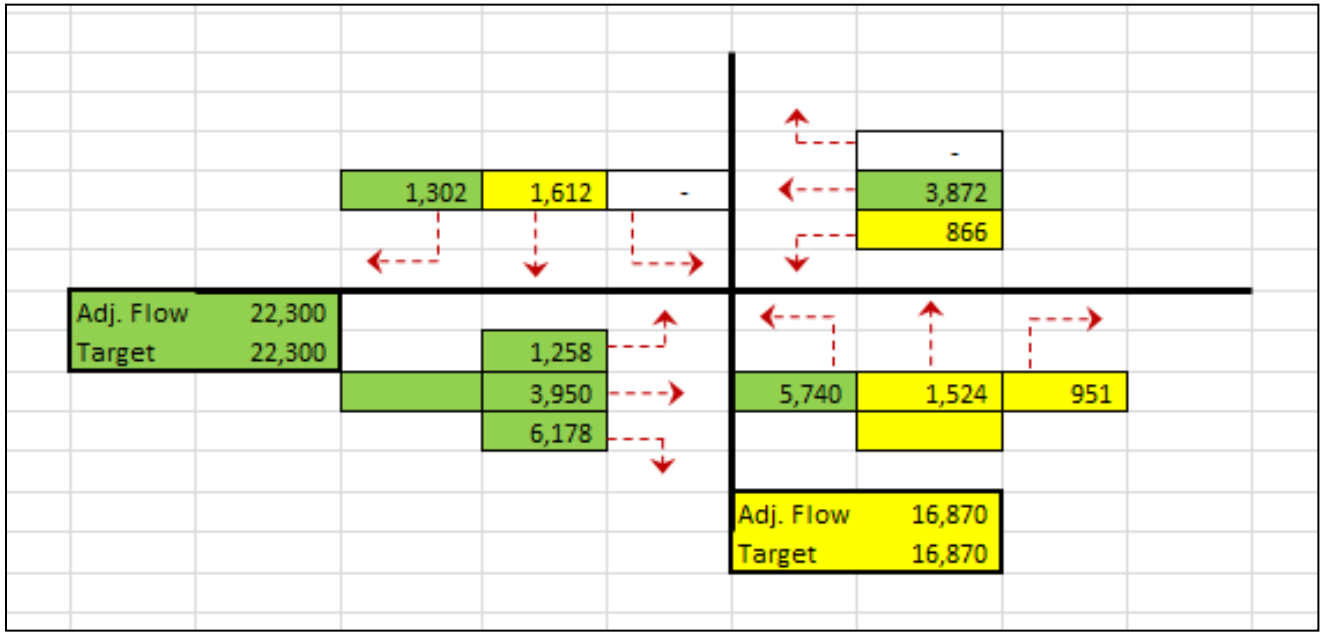
Technique 1: No count data available

- **Use the primary adjusted flow as the base for the proportions, then subtract overlapping movements for the south and calculate the remainder**



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Technique 1: No count data available

- **Remember to address the zero values**
  - Review latest counts, apply nominal growth that is reasonable for analysis year in question.
  - Clue: A movement and its reverse may be similar [daily yes, peak no]
  - If no credible source can be found, use professional judgment

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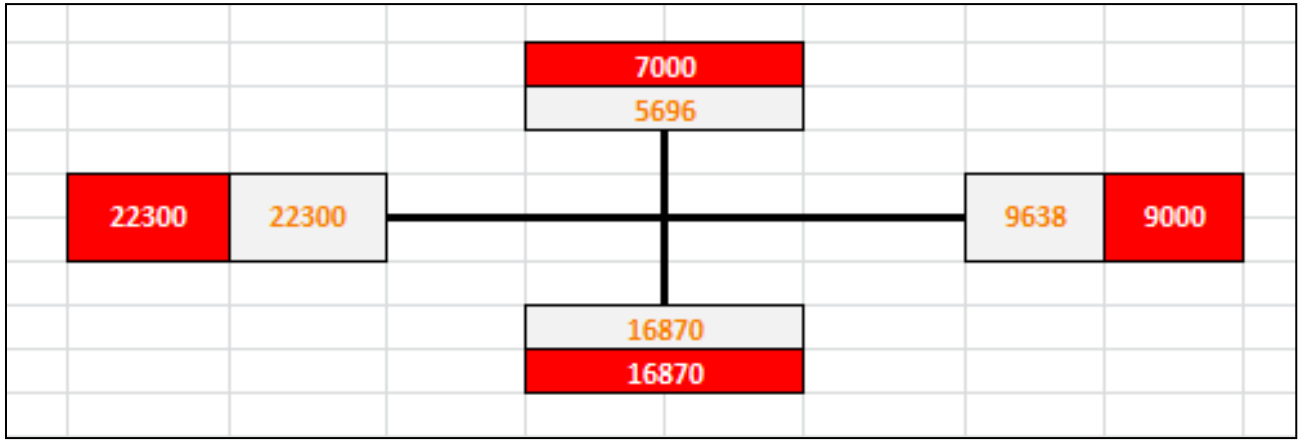
Technique 1: No count data available

- **Compare results with adjusted flows [adj. flow = red, balanced TMD = gray]**
  - West and South legs match, east slightly higher, north significantly lower



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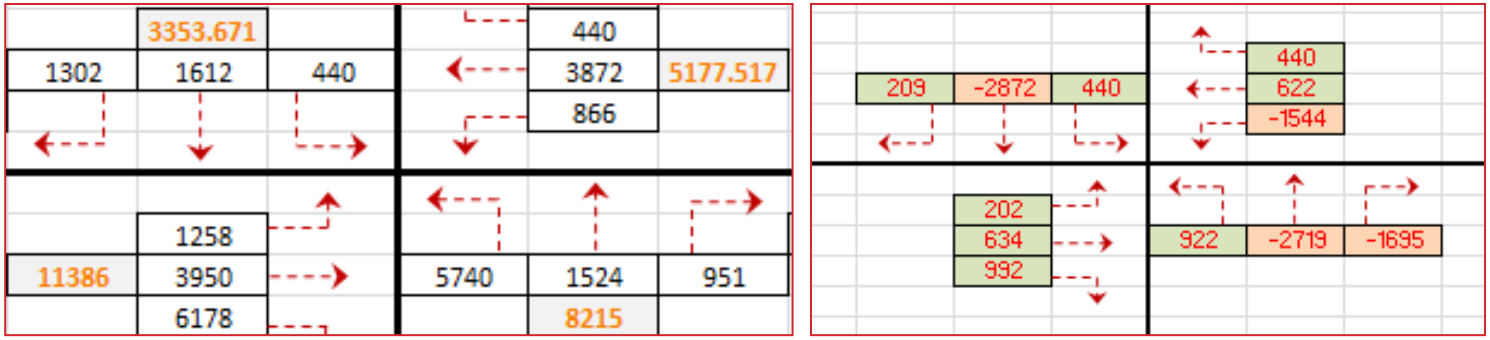
Technique 1: No count data available

- **Final Balanced Model TMD**



- **Forecast figures are usable as are based on the model, but having count data as a basis is best**

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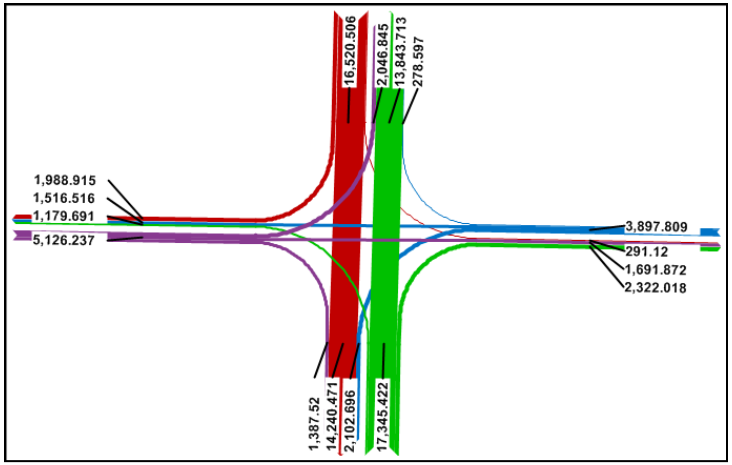
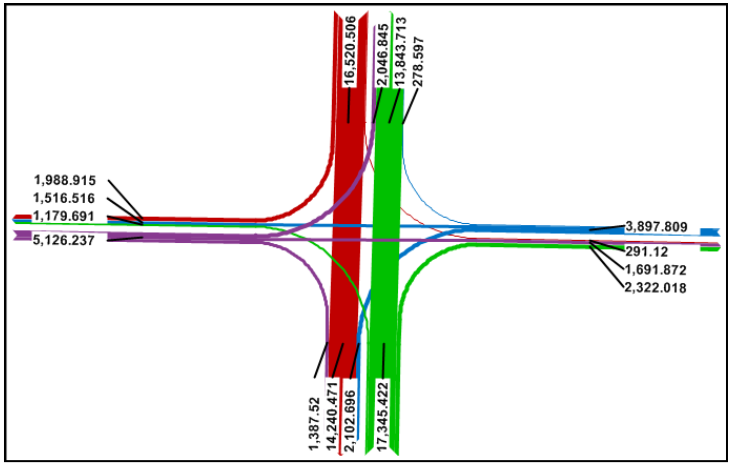
Technique 2: Count data is available

- **Open a TMD movement file in TransCAD**
- **Review the flows in base and design year TMDs**





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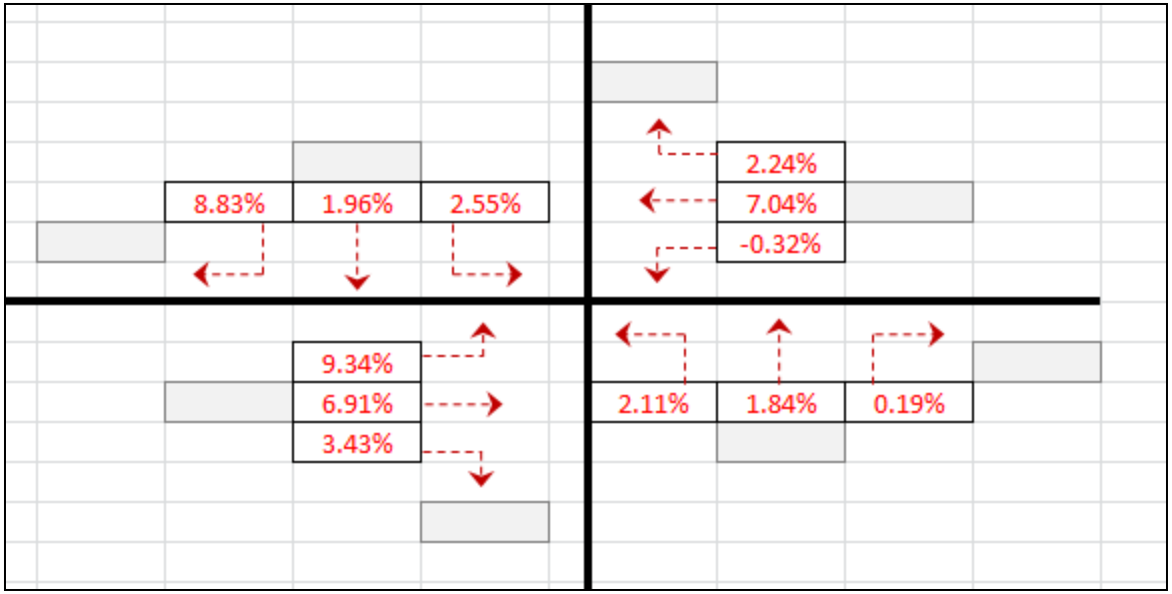
Technique 2: Count data is available

- **Calculate the model growth per year from the two TMDs**



Notice that values can be in a wide range

Similar values for reverse movements indicate logical flow

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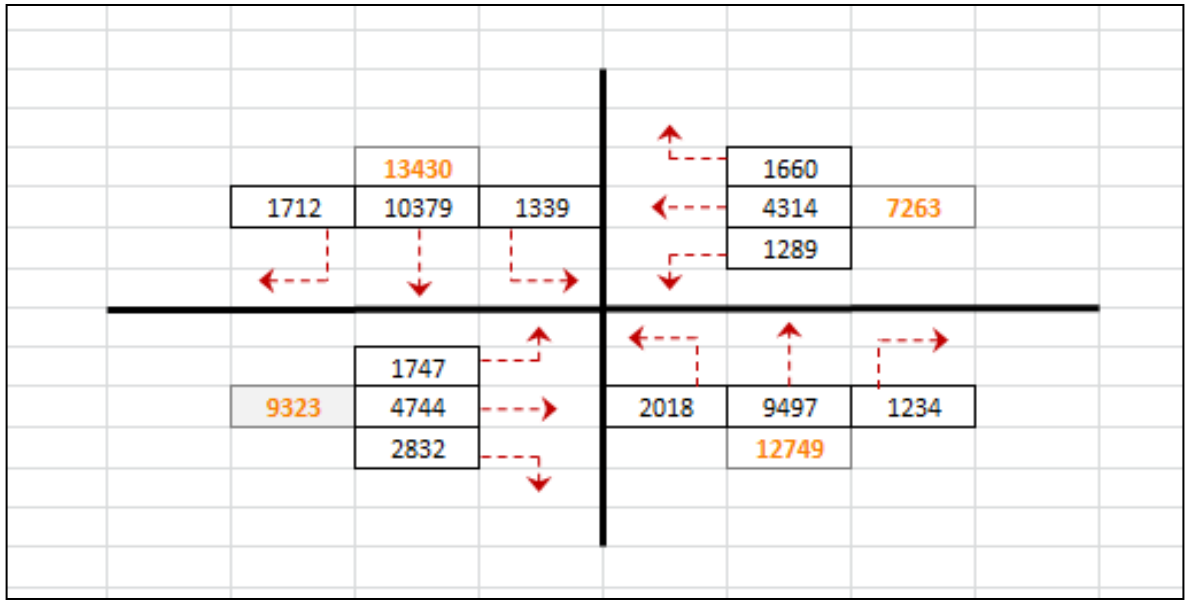
Technique 2: Count data is available

- **Apply the model growth to base year count data**



These are not the final figures!

Adjusted flow review/balancing is still needed

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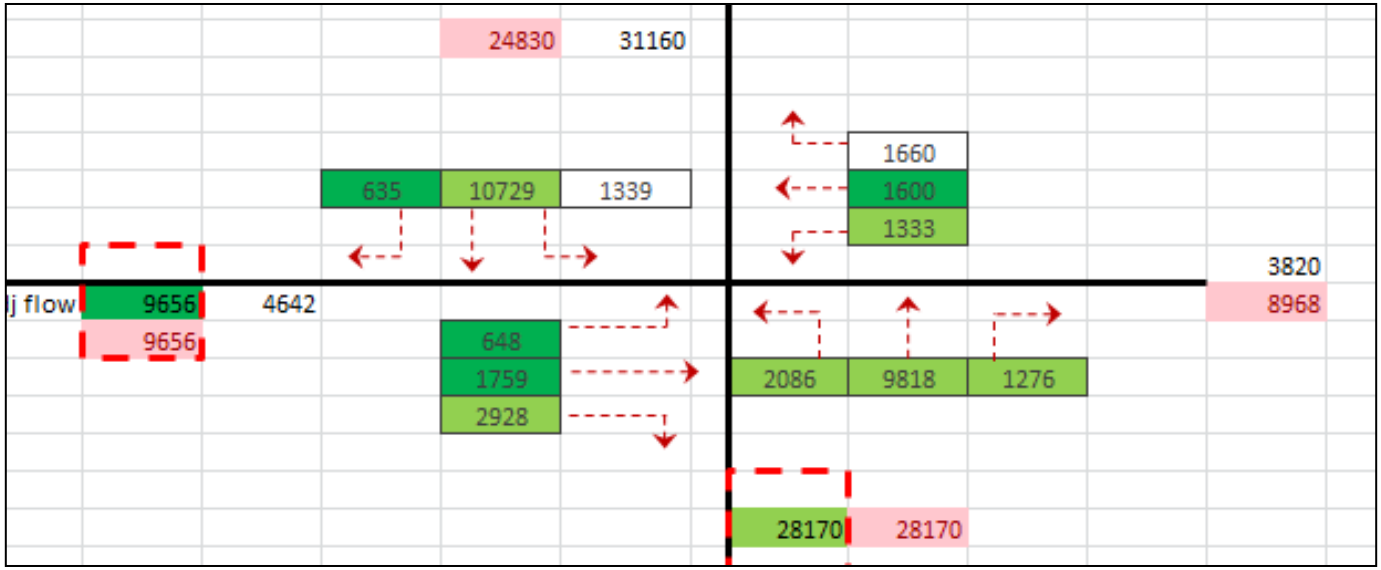
Technique 2: Count data is available

- **For 2 legs, calculate the proportions of movements**



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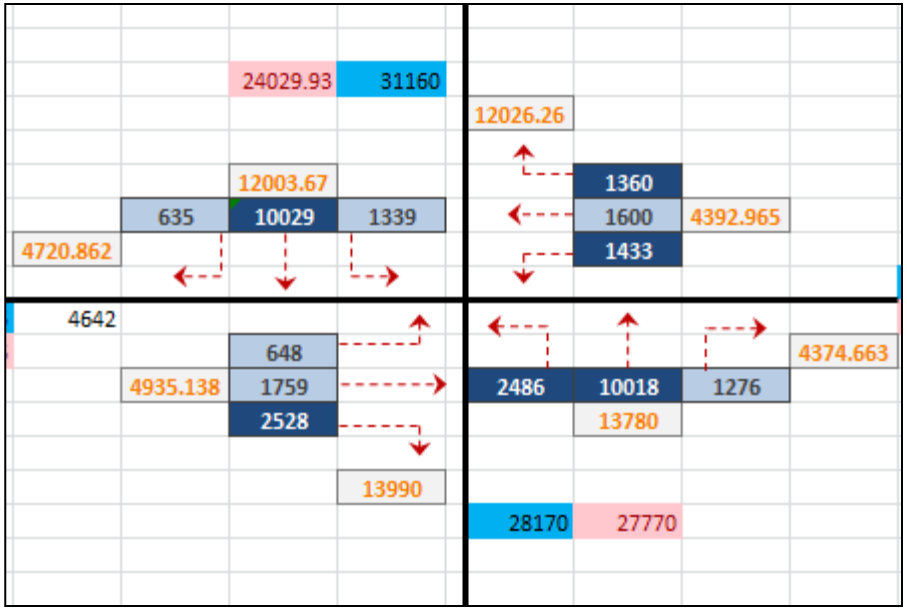
Technique 2: Count data is available

- **Review legs and manually adjust with regards to:**
  - Neighboring intersections
  - Access points
  - Balance of flows



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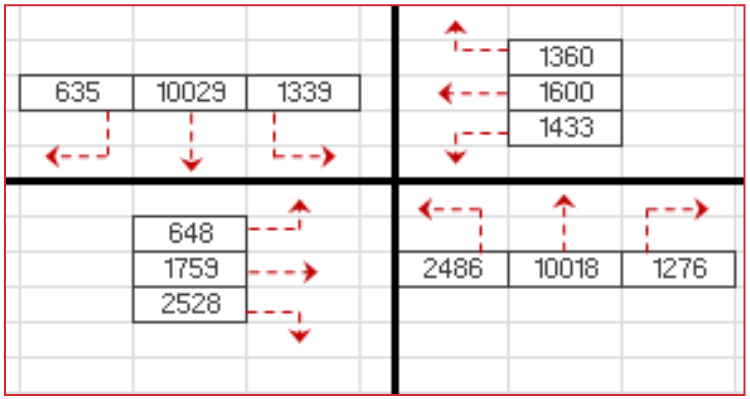
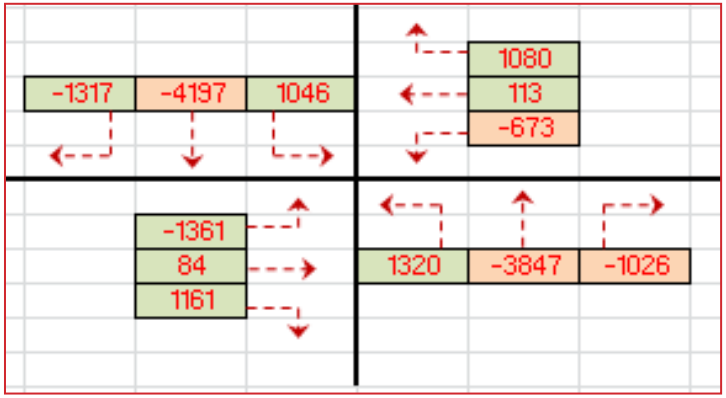
Technique 2: Count data is available

- **Figure comparison**

Final Design year flow



Difference Plot



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Technique 2: Count data is available

- **Extensive model work and manual professional judgment is needed to process model results**
- **Different processes may be applicable to any one model**
- **Different notions of acceptable forecast results may apply**
  - Should negative growth be shown?
  - Should balanced flows be expected?
  - What is the maximum logical growth?

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Thank you for your attention

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