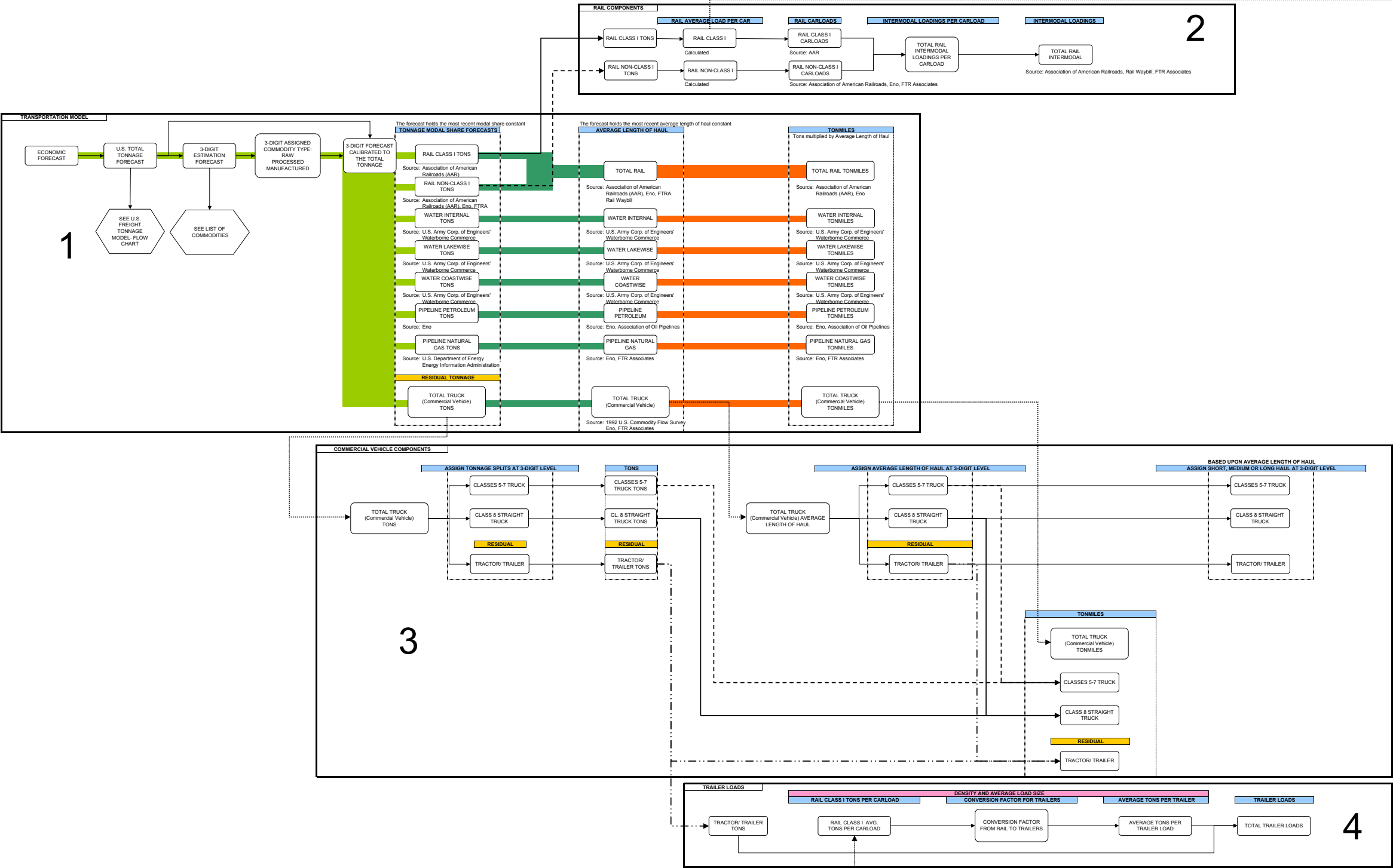
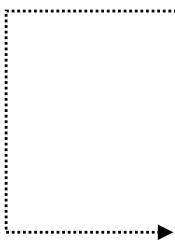
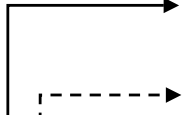
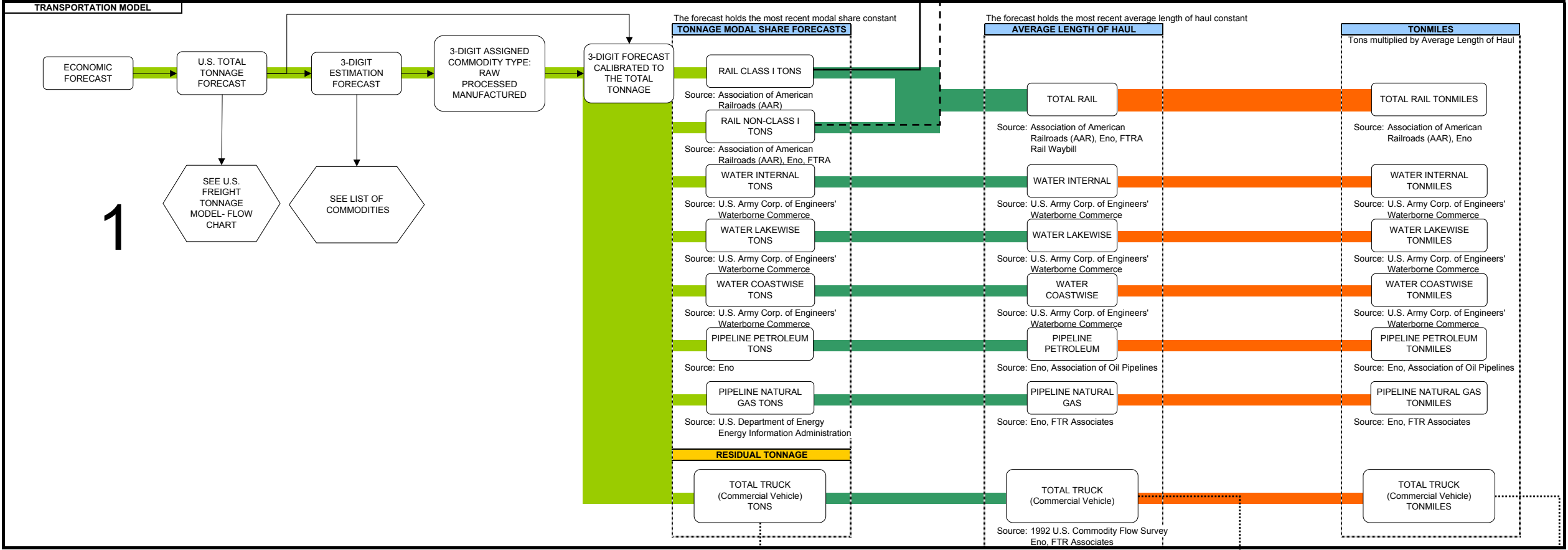
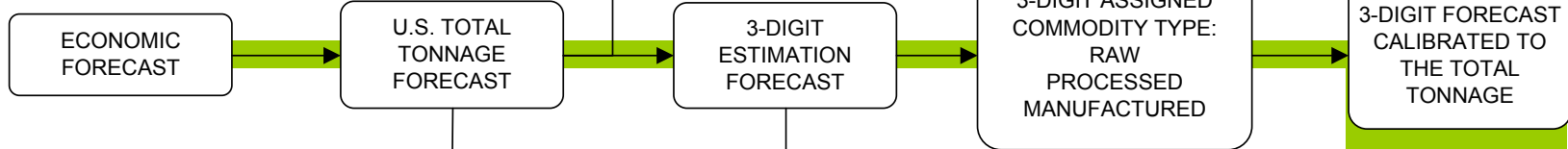


# FTR ASSOCIATES U.S. FREIGHT MODEL





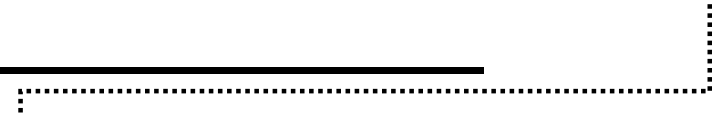
TRANSPORTATION MODEL



1a

SEE U.S. FREIGHT TONNAGE MODEL- FLOW CHART

SEE LIST OF COMMODITIES



The forecast holds the most recent modal share constant

**TONNAGE MODAL SHARE FORECASTS**

The forecast holds the most recent average length of haul constant

**AVERAGE LENGTH OF HAUL**

**TONMILES**

Tons multiplied by Average Length of Haul

3-DIGIT FORECAST CALIBRATED TO THE TOTAL TONNAGE

RAIL CLASS I TONS

Source: Association of American Railroads (AAR)

RAIL NON-CLASS I TONS

Source: Association of American Railroads (AAR), Eno, FTRA

WATER INTERNAL TONS

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

WATER LAKEWISE TONS

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

WATER COASTWISE TONS

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

PIPELINE PETROLEUM TONS

Source: Eno

PIPELINE NATURAL GAS TONS

Source: U.S. Department of Energy Energy Information Administration

**RESIDUAL TONNAGE**

TOTAL TRUCK (Commercial Vehicle) TONS

TOTAL RAIL

Source: Association of American Railroads (AAR), Eno, FTRA Rail Waybill

WATER INTERNAL

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

WATER LAKEWISE

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

WATER COASTWISE

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

PIPELINE PETROLEUM

Source: Eno, Association of Oil Pipelines

PIPELINE NATURAL GAS

Source: Eno, FTR Associates

TOTAL TRUCK (Commercial Vehicle)

Source: 1992 U.S. Commodity Flow Survey Eno, FTR Associates

TOTAL RAIL TONMILES

Source: Association of American Railroads (AAR), Eno

WATER INTERNAL TONMILES

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

WATER LAKEWISE TONMILES

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

WATER COASTWISE TONMILES

Source: U.S. Army Corp. of Engineers' Waterborne Commerce

PIPELINE PETROLEUM TONMILES

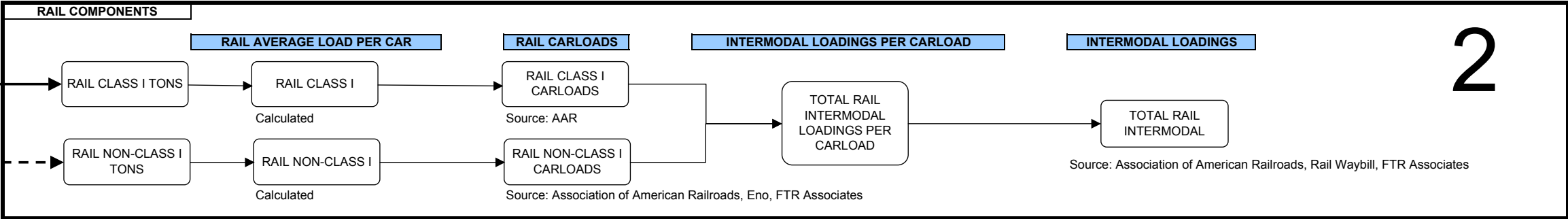
Source: Eno, Association of Oil Pipelines

PIPELINE NATURAL GAS TONMILES

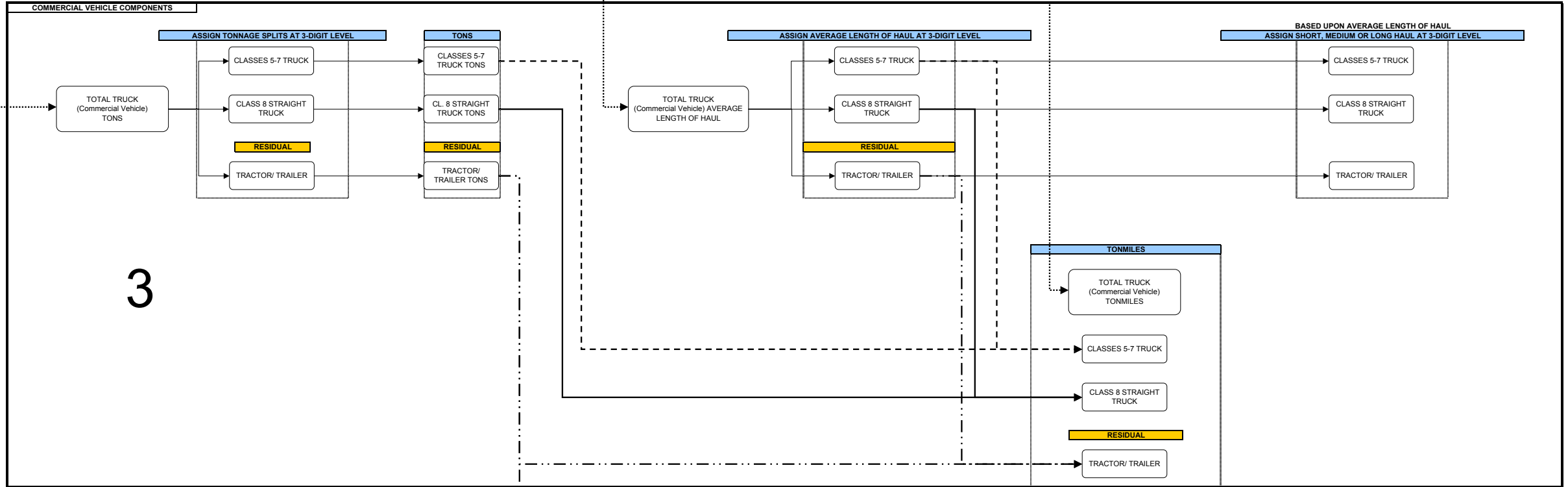
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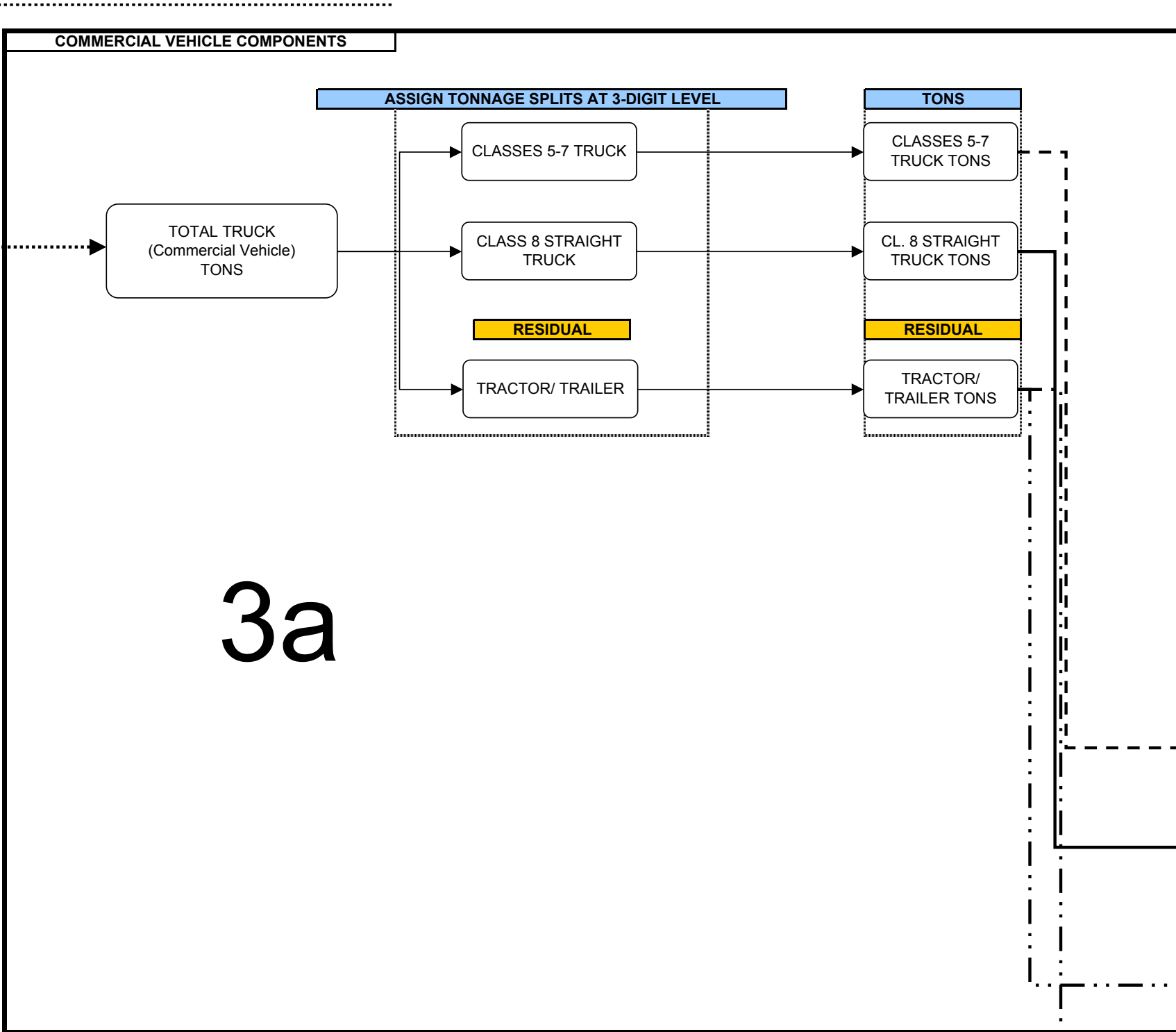
TOTAL TRUCK (Commercial Vehicle) TONMILES

1b



3





3a

3b

