**Process 3: Shelter Model**

**Data Source:** Results of the displacement model, collected demographic data

1. Create a new excel sheet named COUNTY\_Shelter\_DATE
2. Copy the fields below from the excel sheet named COUNTY\_Displacement\_COM\_DATE:

**GEO\_label**

**CID**

**GEO\_ID**

**Census\_ID**

**Area**

**Population\_Total**

**Income\_pct\_Less\_20000, Income\_pct\_20000\_30000, Income\_pct\_30000\_50000, Income\_pct\_50000\_60000, Income\_pct\_60000\_more**

**Age\_pct\_Under\_15, Age\_pct\_15\_64, Age\_pct\_65\_over**

**Displaced\_Population\_FLD\_COM**

1. Use values from the excel sheet named COUNTY\_Demographic\_DATE to calculate these fields:
   1. In a new field named **HI1:**

Income\_pct\_Less\_20000

In a new field named **HI2:**

Income\_pct\_20000\_30000

In a new field named **HI3:**

Income\_pct\_30000\_50000

In a new field named **HI4:**

Income\_pct\_50000\_60000

In a new field named **HI5:**

Income\_pct\_60000\_more

* 1. In a new field named **HA1:**

Age\_pct\_Under\_15

In a new field named **HA2:**

Age\_pct\_15\_64

In a new field named **HA3:**

Age\_pct\_65\_over

* 1. Add and calculate new fields as below (alpha coefficients):

**a11:**

If Inc\_ pct\_above\_60000 < 60: a11 = (0.8\*0.4) + (0.2\*0.05)

else: a11 = (0.8\*0.46) + (0.2\*0.05)

**a12:**

If Inc\_ pct\_above\_60000 < 60: a12 = (0.8\*0.4) + (0.2\*0.2)

else: a12 = (0.8\*0.46) + (0.2\*0.2)

**a13:**

If Inc\_ pct\_above\_60000 < 60: a13 = (0.8\*0.4) + (0.2\*0.5)

else: a13 = (0.8\*0.46) + (0.2\*0.5)

**a21:**

If Inc\_ pct\_above\_60000 < 60: a21 = (0.8\*0.3) + (0.2\*0.05)

else: a21 = (0.8\*0.36) + (0.2\*0.05)

**a22:**

If Inc\_ pct\_above\_60000 < 60: a22 = (0.8\*0.3) + (0.2\*0.2)

else: a22 = (0.8\*0.36) + (0.2\*0.2)

**a23:**

If Inc\_ pct\_above\_60000 < 60: a23 = (0.8\*0.3) + (0.2\*0.5)

else: a23 = (0.8\*0.36) + (0.2\*0.5)

**a31:**

If Inc\_ pct\_above\_60000 < 60: a31 = (0.8\*0.15) + (0.2\*0.05)

else: a31 = (0.8\*0.12) + (0.2\*0.05)

**a32:**

If Inc\_ pct\_above\_60000 < 60: a32 = (0.8\*0.15) + (0.2\*0.2)

else: a32 = (0.8\*0.12) + (0.2\*0.2)

**a33:**

If Inc\_ pct\_above\_60000 < 60: a33 = (0.8\*0.15) + (0.2\*0.5)

else: a33 = (0.8\*0.12) + (0.2\*0.5)

**a41:**

If Inc\_ pct\_above\_60000 < 60: a41 = (0.8\*0.1) + (0.2\*0.05)

else: a41 = (0.8\*0.05) + (0.2\*0.05)

**a42:**

If Inc\_ pct\_above\_60000 < 60: a42 = (0.8\*0.1) + (0.2\*0.2)

else: a42 = (0.8\*0.05) + (0.2\*0.2)

**a43:**

If Inc\_ pct\_above\_60000 < 60: a43 = (0.8\*0.1) + (0.2\*0.5)

else: a43 = (0.8\*0.05) + (0.2\*0.5)

**a51:**

If Inc\_ pct\_above\_60000 < 60: a51 = (0.8\*0.05) + (0.2\*0.05)

else: a51 = (0.8\*0.01) + (0.2\*0.05)

**a52:**

If Inc\_ pct\_above\_60000 < 60: a52 = (0.8\*0.05) + (0.2\*0.2)

else: a52 = (0.8\*0.01) + (0.2\*0.2)

**a53:**

If Inc\_ pct\_above\_60000 < 60: a53 = (0.8\*0.05) + (0.2\*0.5)

else: a53 = (0.8\*0.01) + (0.2\*0.5)

1. Add a new field named **Shelter\_Population\_FLD\_COM** and calculate the values in it as:

(a11 \* Displaced\_Population\_FLD\_COM \* HI1 \* HA1) + (a12 \* Displaced\_Population\_FLD\_COM \* HI1 \* HA2) +

(a13 \* Displaced\_Population\_FLD\_COM \* HI1 \* HA3) + (a21 \* Displaced\_Population\_FLD\_COM \* HI2 \* HA1) +

(a22 \* Displaced\_Population\_FLD\_COM \* HI2 \* HA2) + (a23 \* Displaced\_Population\_FLD\_COM \* HI2 \* HA3) +

(a31 \* Displaced\_Population\_FLD\_COM \* HI3 \* HA1) + (a32 \* Displaced\_Population\_FLD\_COM \* HI3 \* HA2) +

(a33 \* Displaced\_Population\_FLD\_COM \* HI3 \* HA3) + (a41 \* Displaced\_Population\_FLD\_COM \* HI4 \* HA1) +

(a42 \* Displaced\_Population\_FLD\_COM \* HI4 \* HA2) + (a43 \* Displaced\_Population\_FLD\_COM \* HI4 \* HA3) +

(a51 \* Displaced\_Population\_FLD\_COM \* HI5 \* HA1) + (a52 \* Displaced\_Population\_FLD\_COM \* HI5 \* HA2) +

(a53 \* Displaced\_Population\_FLD\_COM \* HI5 \* HA3)