LAND USE DIVERSITY

NYC Department of City Planning Transportation Division

March 2021

NYC PLANNING

- **MapPLUTO**
  - BBL
  - Census Tract 2010
  - Shape Area
  - Residential Area ⎫
  - Office Area
  - Retail Area
  - Garage Area ⎬ Total Building Area
  - Storage Area
  - Factory Area
  - Other Area ⎭

- Total Building Area != 0

- Total Building Area / Shape Area <= 40

                      ↑   ↑

            Built FAR   Max allowed FAR

Residential Area ——— Residential Area

Office Area
Retail Area } Office & Retail Area

Garage Area
Storage Area
Factory Area
Other Area } Other Area

$$LUDI_{CT} = -(\sum_{i=1}^{n} P_i \times \ln(P_i)) \div \ln(n)$$

Where,

$LUDI_{CT}$ = the Census Tract level Land Use Diversity Index with a range between 0 and 1; 0 represents homogenous land use, and 1 indicates the building area is equally distributed across all land use types

P_i = the proportion of total building area of ith land use category found in the Census Tract being analyzed

n = the number of land use categories of interest

Source: https://www.jtlu.org/index.php/jtlu/article/view/1132/1106

$$LUDI_{NTA} = (\sum_{i=1}^{n} LUDI_{CT}^{i} \times BA_{CT}^{i}) \div \sum_{i=1}^{n} BA_{CT}^{i}$$

Where,

$LUDI_{NTA}$ = the Neighborhood Tabulation (NTA) level Land Use Diversity Index with a range between 0 and 1; 0 represents homogenous land use, and 1 indicates the building area is equally distributed across all land use types

$LUDI_{CT}^{i}$ = the Census Tract level Land Use Diversity Index in Census Tract i

BA_{CT}^{i} = the total building area in Census Tract i