Package: nychex (via r-universe)

May 19, 2026

Title Tessellated Hex Maps for New York City Geographies

Version 0.3.0

Description Provides sf objects containing hexagonal and square tile maps for New York City administrative geographies. Each polygon in the source geography is represented by a single tile, preserving the overall spatial layout of the city.

LazyData true

LazyDataCompression xz

Depends R (>= 4.1.0)

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URL https://kjhealy.github.io/nychex/, https://github.com/kjhealy/nychex

BugReports https://github.com/kjhealy/nychex/issues

Encoding UTF-8

Roxygen list(markdown = TRUE)

RoxygenNote 7.3.3

Suggests dplyr, ggplot2, sf, testthat (>= 3.0.0)

Config/testthat/edition 3

Repository https://kjhealy.r-universe.dev

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RemoteUrl https://github.com/kjhealy/nychex

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Contents

`nyc_ct_boros_hex_sf` *Borough outlines for the NYC census tract 2020 hex map*

Description

Polygon outlines of the main contiguous hex area for each NYC borough, derived from nyc_ct20_hex_sf. Disconnected island hexes are excluded. Brooklyn and Queens have separate outlines, so the shared border between them is visible.

Usage

```
nyc_ct_boros_hex_sf
```

Format

`nyc_ct_boros_hex_sf`**:**

A simple feature collection with 5 rows and 3 columns:

boro_name Borough name.

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

tile_map POLYGON outline geometry (EPSG:2263).

Author(s)

Kieran Healy

Source

Derived from nyc_ct20_hex_sf by unioning hex tiles per borough and extracting the largest polygon.

nyc_ct_boros_sq_sf *Borough outlines for the NYC census tract 2020 square tile map*

Description

Polygon outlines of the main contiguous square tile area for each NYC borough, derived from nyc_ct20_sq_sf. Disconnected island tiles are excluded. Brooklyn and Queens have separate outlines, so the shared border between them is visible.

Usage

```
nyc_ct_boros_sq_sf
```

Format

`nyc_ct_boros_sq_sf`**:**

A simple feature collection with 5 rows and 3 columns:

boro_name Borough name.

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

tile_map POLYGON outline geometry (EPSG:2263).

Author(s)

Kieran Healy

Source

Derived from nyc_ct20_sq_sf by unioning square tiles per borough and extracting the largest polygon.

nyc_ct20_hex_sf *Hexagonal tile map of NYC census tracts (2020)*

Description

A tessellated hexagonal tile map of all 2,325 New York City 2020 census tracts. Each tract is represented by a single hexagonal polygon tile, arranged to approximate the geographic layout of the city.

Usage

```
nyc_ct20_hex_sf
```

Format

`nyc_ct20_hex_sf`**:**

A simple feature collection with 2325 rows and 9 columns:

geoid Census GEOID (state + county + tract FIPS code). Use this column for joining with other tract-level data.

boro_ct2020 Unique borough-tract identifier (borough code concatenated with tract code).

ct2020 Census tract 2020 code (not unique across boroughs).

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

boro_name Borough name.

nta2020 NTA 2020 identifier for the tract.

nta_name Full NTA name.

puma Public Use Microdata Area code.

tile_map POLYGON hexagonal tile geometry (EPSG:2263).

Details

The hex map was generated using the tilemaps algorithm applied to each borough separately (Manhattan, Bronx, Brooklyn, Queens, Staten Island), then rescaled to uniform hex size and assembled to preserve NYC's overall geographic layout. Unlike the NTA hex map, Brooklyn and Queens were tiled as separate boroughs rather than combined, so there is a visible gap between them.

Island tracts (those in geographically disconnected NTAs or that become disconnected after polygon simplification) are included as individual or small-group tiles positioned near their geographic locations. Multi-tract island NTAs (e.g. Rockaways, City Island) are tiled as contiguous groups where possible.

Author(s)

Kieran Healy

Source

Derived from census tract 2020 boundaries in the **nycmaps** package using the **tilemaps** algorithm.

`nyc_ct20_sq_sf` *Square tile map of NYC census tracts (2020)*

Description

A tessellated square tile map of all 2,325 New York City 2020 census tracts. Each tract is represented by a single square polygon tile, arranged to approximate the geographic layout of the city.

Usage

```
nyc_ct20_sq_sf
```

Format

`nyc_ct20_sq_sf`**:**

A simple feature collection with 2325 rows and 9 columns:

geoid Census GEOID (state + county + tract FIPS code). Use this column for joining with other tract-level data.

boro_ct2020 Unique borough-tract identifier (borough code concatenated with tract code).

ct2020 Census tract 2020 code (not unique across boroughs).

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

boro_name Borough name.

nta2020 NTA 2020 identifier for the tract.

nta_name Full NTA name.

puma Public Use Microdata Area code.

tile_map POLYGON square tile geometry (EPSG:2263).

Details

The square tile map was generated using the tilemaps algorithm with `square = TRUE`, applied to each borough separately (Manhattan, Bronx, Brooklyn, Queens, Staten Island), then rescaled to uniform tile size and assembled to preserve NYC's overall geographic layout. Unlike the NTA square map, Brooklyn and Queens were tiled as separate boroughs rather than combined, so there is a visible gap between them.

Island tracts (those in geographically disconnected NTAs or that become disconnected after polygon simplification) are included as individual or small-group tiles positioned near their geographic locations. Multi-tract island NTAs (e.g. Rockaways, City Island) are tiled as contiguous groups where possible.

Author(s)

Kieran Healy

Source

Derived from census tract 2020 boundaries in the **nycmaps** package using the **tilemaps** algorithm.

`nyc_nta_boros_hex_sf` *Borough outlines for the NYC NTA 2020 hex map*

Description

Polygon outlines of the main contiguous hex area for each NYC borough, derived from nyc_nta20_hex_sf. Disconnected island hexes are excluded. Brooklyn and Queens have separate outlines, so the shared border between them is visible.

Usage

```
nyc_nta_boros_hex_sf
```

Format

`nyc_nta_boros_hex_sf`:

A simple feature collection with 5 rows and 3 columns:

boro_name Borough name.

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

tile_map POLYGON outline geometry (EPSG:2263).

Author(s)

Kieran Healy

Source

Derived from nyc_nta20_hex_sf by unioning hex tiles per borough and extracting the largest polygon.

`nyc_nta_boros_sq_sf` *Borough outlines for the NYC NTA 2020 square tile map*

Description

Polygon outlines of the main contiguous square tile area for each NYC borough, derived from nyc_nta20_sq_sf. Disconnected island tiles are excluded. Brooklyn and Queens have separate outlines, so the shared border between them is visible.

Usage

```
nyc_nta_boros_sq_sf
```

Format

`nyc_nta_boros_sq_sf`:

A simple feature collection with 5 rows and 3 columns:

boro_name Borough name.

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

tile_map POLYGON outline geometry (EPSG:2263).

Author(s)

Kieran Healy

Source

Derived from nyc_nta20_sq_sf by unioning square tiles per borough and extracting the largest polygon.

`nyc_nta20_hex_sf` *Hexagonal tile map of NYC Neighborhood Tabulation Areas (2020)*

Description

A tessellated hexagonal tile map of New York City's 262 Neighborhood Tabulation Areas (NTA 2020). Each NTA is represented by a single hexagonal polygon tile, arranged to approximate the geographic layout of the city.

Usage

```
nyc_nta20_hex_sf
```

Format

`nyc_nta20_hex_sf`**:**

A simple feature collection with 262 rows and 12 columns:

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

county_fips County FIPS code.

nta_name Full NTA name.

nta2020 NTA 2020 identifier.

boro_name Borough name.

nta_type NTA type (residential or non-residential).

cdta2020 Community District Tabulation Area 2020 identifier.

cdta_name Full CDTA name.

shape_leng Perimeter length of the original NTA boundary.

nta_abbrev Abbreviated NTA name.

shape_area Area of the original NTA boundary.

tile_map POLYGON hexagonal tile geometry (EPSG:2263).

Details

The hex map was generated using the tilemaps algorithm applied to borough groups separately (Manhattan, Bronx, Brooklyn/Queens, Staten Island), then rescaled to uniform hex size and assembled to preserve NYC's overall geographic layout. Island NTAs were added back using `tilemaps::create_island()` and positioned to approximate their geographic locations.

Author(s)

Kieran Healy

Source

Derived from NTA 2020 boundaries in the **nycmaps** package using the **tilemaps** algorithm.

`nyc_nta20_sq_sf` *Square tile map of NYC Neighborhood Tabulation Areas (2020)*

Description

A tessellated square tile map of New York City's 262 Neighborhood Tabulation Areas (NTA 2020). Each NTA is represented by a single square polygon tile, arranged to approximate the geographic layout of the city.

Usage

```
nyc_nta20_sq_sf
```

Format

`nyc_nta20_sq_sf`**:**

A simple feature collection with 262 rows and 12 columns:

boro_code Borough code. 1 = Manhattan, 2 = Bronx, 3 = Brooklyn, 4 = Queens, 5 = Staten Island.

county_fips County FIPS code.

nta_name Full NTA name.

nta2020 NTA 2020 identifier.

boro_name Borough name.

nta_type NTA type (residential or non-residential).

cdta2020 Community District Tabulation Area 2020 identifier.

cdta_name Full CDTA name.

shape_leng Perimeter length of the original NTA boundary.

nta_abbrev Abbreviated NTA name.

shape_area Area of the original NTA boundary.

tile_map POLYGON square tile geometry (EPSG:2263).

Details

The square tile map was generated using the tilemaps algorithm with `square = TRUE`, applied to borough groups separately (Manhattan, Bronx, Brooklyn/Queens, Staten Island), then rescaled to uniform tile size and assembled to preserve NYC's overall geographic layout. Island NTAs were added back using `tilemaps::create_island()` and positioned to approximate their geographic locations.

Author(s)

Kieran Healy

Source

Derived from NTA 2020 boundaries in the **nycmaps** package using the **tilemaps** algorithm.

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