Package: nycroutes (via r-universe)

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Title NYC Subway Routes and Stops

Version 0.0.4.9000

Description Spatial and tabular data describing the New York City subway system, derived from the MTA's GTFS feed. Includes route shapes, stops, parent stations, directional platforms, transfers, and pre-computed offset versions of routes and stops suitable for schematic mapping.

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Depends R (>= 3.5)

Suggests sf (>= 1.0.0), testthat (>= 3.0.0), tibble (>= 3.0.0)

Config/testthat/edition 3

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

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

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`nyc_subway_complex_routes_df`

NYC subway complex-to-route service map

Description

Flat join between MTA station complexes and the GTFS routes that call at any of their constituent parent stops. One row per `(station_complex_id, route_id)` pair.

Usage

```
nyc_subway_complex_routes_df
```

Format

`nyc_subway_complex_routes_df`**:**

A tibble with one row per (complex, route):

station_complex_id MTA complex identifier; joins to nyc_subway_complexes_df.

route_id GTFS route identifier; joins to nyc_subway_routes_df.

Details

Equivalent to `nyc_subway_complex_stops_df |> inner_join(nyc_subway_stop_routes_df, by = "stop_id") |> distinct()`. Provided directly because almost every consuming script wants it. Includes express and branch service variants (e.g., `7X`, `FX`) that may not appear in the route bullets in `nycsubwayhourly`'s `station_complex` text.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

See Also

nyc_subway_complexes_df, nyc_subway_stop_routes_df.

`nyc_subway_complex_stops_df`
NYC subway complex-to-parent-stop mapping

Description

Long-form bridge between MTA station complexes and the GTFS parent stops that constitute them. One row per `(station_complex_id, stop_id)` pair.

Usage

```
nyc_subway_complex_stops_df
```

Format

`nyc_subway_complex_stops_df`**:**

A tibble with one row per (complex, parent stop):

station_complex_id MTA complex identifier; joins to nyc_subway_complexes_df.

stop_id GTFS parent station identifier; joins to nyc_subway_stops_parent_sf.

Details

Subway-only; see nyc_subway_complexes_df for the construction procedure and the SIR/tram caveat.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

See Also

nyc_subway_complexes_df, nyc_subway_complex_routes_df.

nyc_subway_complexes_df *NYC subway station complexes*

Description

One row per MTA station complex. The complex is the unit of aggregation used in the ridership data published by the MTA (notably `nycsubwayhourly` and `nycsubwayodr`), and may aggregate multiple GTFS parent stops (for instance, Times Sq–42 St aggregates five parent stops across the IRT, BMT, and IND lines).

Usage

```
nyc_subway_complexes_df
```

Format

`nyc_subway_complexes_df`**:**

A tibble with one row per complex:

station_complex_id MTA complex identifier as used in `nycsubwayhourly` and `nycsubwayodr`.

station_complex_name Canonical human-readable complex name.

borough Borough containing the complex.

n_stops Number of GTFS parent stops belonging to the complex.

Details

Subway-only. Staten Island Railway and Roosevelt Island Tramway complexes that appear in `nycsubwayhourly` are intentionally not included here because the underlying GTFS feed used by `nycroutes` is the subway feed (`gtfs_subway.zip`).

Complex membership is reconstructed from the GTFS feed because the MTA's subway GTFS feed used by this package does not include `station_complexes.txt`. Each parent station is assigned to the nearest centroid in `nycsubwayhourly`'s station-complex centroid table, with a 1500 ft cutoff (in EPSG:2263) to exclude SIR parents that would otherwise snap to mainland subway centroids.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

See Also

nyc_subway_complex_stops_df, nyc_subway_complex_routes_df, nyc_subway_complexes_sf.

`nyc_subway_complexes_sf` *NYC subway station complexes (sf)*

Description

Centroid geometry for each MTA station complex, with the same scalar columns as nyc_subway_complexes_df. EPSG:2263, NAD83 / New York Long Island (ftUS).

Usage

```
nyc_subway_complexes_sf
```

Format

`nyc_subway_complexes_sf`**:**

A simple feature collection with one row per complex:

station_complex_id MTA complex identifier.

station_complex_name Canonical complex name.

borough Borough.

n_stops Number of GTFS parent stops in the complex.

geometry Point centroid in EPSG:2263, computed as the centroid of the constituent parent-stop point geometries.

Details

The centroid is the mean of the constituent parent-stop point geometries, not the single `(latitude, longitude)` published in `nycsubwayhourly` (which sits on or near a single parent stop).

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

See Also

nyc_subway_complexes_df for the non-spatial version; nyc_subway_complex_stops_df and nyc_subway_stops_parent_sf for the constituent parent stops.

`nyc_subway_routes_df` *NYC subway routes*

Description

Tabular metadata for the 29 named subway services in the MTA GTFS feed, including long and short names, descriptions, brand colors, and sort order.

Usage

```
nyc_subway_routes_df
```

Format

`nyc_subway_routes_df`**:**

A tibble with 29 rows and 10 columns:

route_id GTFS route identifier (e.g., `"A"`, `"FX"`).

route_group Route group identifier (e.g., `"ACE"`, `"123"`).

agency_id GTFS agency identifier (all `"MTA NYCT"`).

route_short_name Short service name, usually the bullet letter or number shown on signage.

route_long_name Descriptive long name (e.g., `"8 Avenue Express"`).

route_desc Long-form description of the service.

route_type GTFS route type code. Always 1 (subway/metro).

route_url MTA route information URL.

route_color Brand color as a hex string prefixed with #.

route_text_color Text color for labels as a hex string prefixed with #.

route_sort_order MTA-supplied sort order for presentation.

Details

Derived from `routes.txt` in the MTA NYC Transit subway GTFS feed.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

`nyc_subway_routes_offset_sf` *NYC subway route shapes with schematic offsets*

Description

A version of nyc_subway_routes_sf in which each route has been shifted horizontally by a small amount (in feet, CRS EPSG:2263) so that co-running services can be drawn as parallel lines in schematic maps instead of stacking on top of each other. EPSG:2263, NAD83 / New York Long Island (ftUS).

Usage

```
nyc_subway_routes_offset_sf
```

Format

`nyc_subway_routes_offset_sf`**:**

A simple feature collection with 311 rows and 7 columns:

shape_id GTFS shape identifier.

route_id GTFS route identifier.

route_group Route group identifier (e.g., `"ACE"`, `"123"`).

route_short_name Short service name (bullet letter/number).

route_long_name Descriptive long name.

route_color Brand color as a hex string prefixed with #.

x_offset Horizontal offset in feet applied to the geometry.

geometry Offset linestring geometry in EPSG:2263.

Details

Offsets are computed as `(group_id - n_routes / 2) * 50`, so each route is shifted by a multiple of 50 feet relative to the middle route. This is a cosmetic transformation intended only for schematic visualization; for any spatial analysis use nyc_subway_routes_sf instead.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

`nyc_subway_routes_sf` *NYC subway route shapes*

Description

Linestring geometries for NYC subway route shapes, one row per GTFS `shape_id`. Each shape is joined to its route identifier, short and long names, and brand color so that features can be mapped and styled directly. EPSG:2263, NAD83 / New York Long Island (ftUS).

Usage

```
nyc_subway_routes_sf
```

Format

`nyc_subway_routes_sf`**:**

A simple feature collection with 311 rows and 6 columns:

shape_id GTFS shape identifier.

route_id GTFS route identifier the shape belongs to.

route_group Route group identifier (e.g., `"ACE"`, `"123"`).

route_short_name Short service name (bullet letter/number).

route_long_name Descriptive long name.

route_color Brand color as a hex string prefixed with #.

geometry Linestring geometry in EPSG:2263.

Details

Built from `shapes.txt`, `trips.txt`, and `routes.txt` in the MTA NYC Transit subway GTFS feed. A single `route_id` may be represented by several shapes, one per service pattern.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

`nyc_subway_stop_routes_df` *NYC subway parent-stop route service map*

Description

Long-form mapping from each parent subway station to the GTFS routes that call at it. One row per `(stop_id, route_id)` pair.

Usage

```
nyc_subway_stop_routes_df
```

Format

`nyc_subway_stop_routes_df`**:**

A tibble with one row per parent stop and route:

stop_id GTFS parent station identifier (`location_type == 1`); joins to nyc_subway_stops_parent_sf.

route_id GTFS route identifier; joins to nyc_subway_routes_df.

Details

Built by joining `stop_times.txt` to `trips.txt` and rolling the platform-level `stop_id` up to its `parent_station`. Includes any express or branch service variants (e.g., `7X`, `FX`) that call at the stop in the GTFS schedule, even when those variants do not appear in the route bullets in `nycsubwayhourly`'s `station_complex` text.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

See Also

nyc_subway_complex_routes_df for the same information rolled up to MTA station complexes.

`nyc_subway_stops_offset_sf` *NYC subway stops with schematic offsets*

Description

Directional platform stops joined to the services that call at them, with the same horizontal offsets applied as in nyc_subway_routes_offset_sf. Each stop appears once per serving route so that stop markers align with the corresponding offset route line. EPSG:2263, NAD83 / New York Long Island (ftUS).

Usage

```
nyc_subway_stops_offset_sf
```

Format

`nyc_subway_stops_offset_sf`**:**

A simple feature collection with 1,909 rows and 8 columns:

stop_id GTFS platform identifier.

stop_name Station name.

location_type GTFS location type; always `NA` here (platforms only).

parent_station `stop_id` of the owning parent station.

route_id GTFS route identifier of a service calling at the stop. A stop may appear in multiple rows, one per route.

route_group Route group identifier (e.g., `"ACE"`, `"123"`).

x_offset Horizontal offset in feet applied to the geometry.

route_color Brand color as a hex string prefixed with #.

geometry Offset point geometry in EPSG:2263.

Details

Built by joining the platforms in nyc_subway_stops_platform_sf to route ids via `stop_times.txt` and `trips.txt`, then applying the same per-route offsets as nyc_subway_routes_offset_sf. This is a cosmetic transformation intended only for schematic visualization; for any spatial analysis use nyc_subway_stops_platform_sf instead.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

`nyc_subway_stops_parent_sf` *NYC subway parent stations*

Description

Point locations of the 496 parent subway stations (`location_type == 1`). Each parent station corresponds to one or more directional platforms in nyc_subway_stops_platform_sf. EPSG:2263, NAD83 / New York Long Island (ftUS).

Usage

```
nyc_subway_stops_parent_sf
```

Format

`nyc_subway_stops_parent_sf`**:**

A simple feature collection with 496 rows and 5 columns:

stop_id GTFS stop identifier for the parent station.

stop_name Station name.

location_type GTFS location type; always 1 here.

parent_station Always `NA` for parent stations.

geometry Point geometry in EPSG:2263.

Details

Filtered from nyc_subway_stops_sf on `location_type == 1`.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

`nyc_subway_stops_platform_sf` *NYC subway directional platforms*

Description

Point locations of the 992 directional platforms (child stops with `is.na(location_type)`). Each platform has a `parent_station` id linking to a row in nyc_subway_stops_parent_sf. EPSG:2263, NAD83 / New York Long Island (ftUS).

Usage

```
nyc_subway_stops_platform_sf
```

Format

`nyc_subway_stops_platform_sf`**:**

A simple feature collection with 992 rows and 5 columns:

stop_id GTFS platform identifier, typically the parent `stop_id` with a trailing `N` or `S` for direction.

stop_name Station name (usually the same as the parent).

location_type GTFS location type; always `NA` here.

parent_station `stop_id` of the owning parent station.

geometry Point geometry in EPSG:2263.

Details

Filtered from nyc_subway_stops_sf on `is.na(location_type)`. Directional platforms are the rows referenced by GTFS `stop_times.txt` and are what should be joined against trip data.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

`nyc_subway_stops_sf` *NYC subway stops*

Description

Point locations of every NYC subway stop in the MTA GTFS feed, including both parent stations and their directional platforms. EPSG:2263, NAD83 / New York Long Island (ftUS).

Usage

```
nyc_subway_stops_sf
```

Format

`nyc_subway_stops_sf`**:**

A simple feature collection with 1,488 rows and 5 columns:

stop_id GTFS stop identifier. Parent stations use a bare id (e.g., `"101"`); directional platforms append `N` or `S` (e.g., `"101N"`, `"101S"`).

stop_name Human-readable station or platform name.

location_type GTFS location type. `1` indicates a parent station; `NA` indicates a directional platform (child stop).

parent_station For platforms, the `stop_id` of the parent station; `NA` for parent stations themselves.

geometry Point geometry in EPSG:2263.

Details

Built from `stops.txt` in the MTA NYC Transit subway GTFS feed. See also nyc_subway_stops_parent_sf for parent stations only and nyc_subway_stops_platform_sf for directional platforms only.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

`nyc_subway_transfers_df` *NYC subway transfers*

Description

Transfer pairs between subway stops, from the GTFS `transfers.txt` file.

Usage

```
nyc_subway_transfers_df
```

Format

`nyc_subway_transfers_df`**:**

A tibble with 613 rows and 4 columns:

from_stop_id `stop_id` where the transfer originates.

to_stop_id `stop_id` where the transfer terminates.

transfer_type GTFS transfer type code. `0` = recommended transfer, `2` = transfer requires a minimum time, `3` = no transfer possible.

min_transfer_time Minimum time in seconds to complete the transfer; `NA` if not specified.

Details

Derived from `transfers.txt` in the MTA NYC Transit subway GTFS feed. Stop ids can be joined to nyc_subway_stops_sf.

Author(s)

Kieran Healy

Source

https://new.mta.info/developers

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