

Supporting school place planning in London local government

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Greater London Authority

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Greater London Authority (GLA) City Intelligence Unit

Over 40 staff specialising in:

- Economics
- Demography
- GIS
- Opinion research & polling
- Census
- Crime and safety



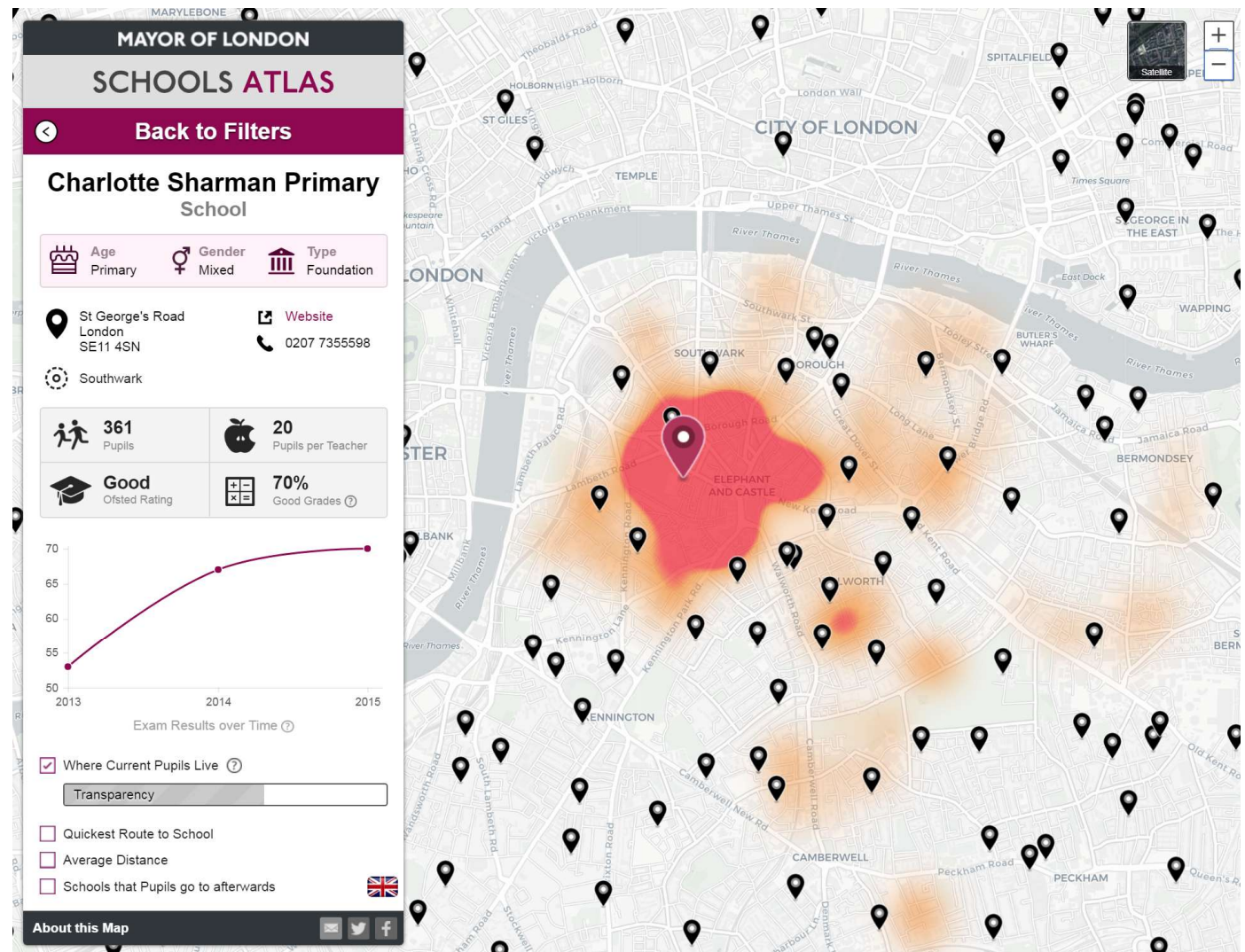
Provide support to strategic planners, mayor, local authorities

How we use the NPD

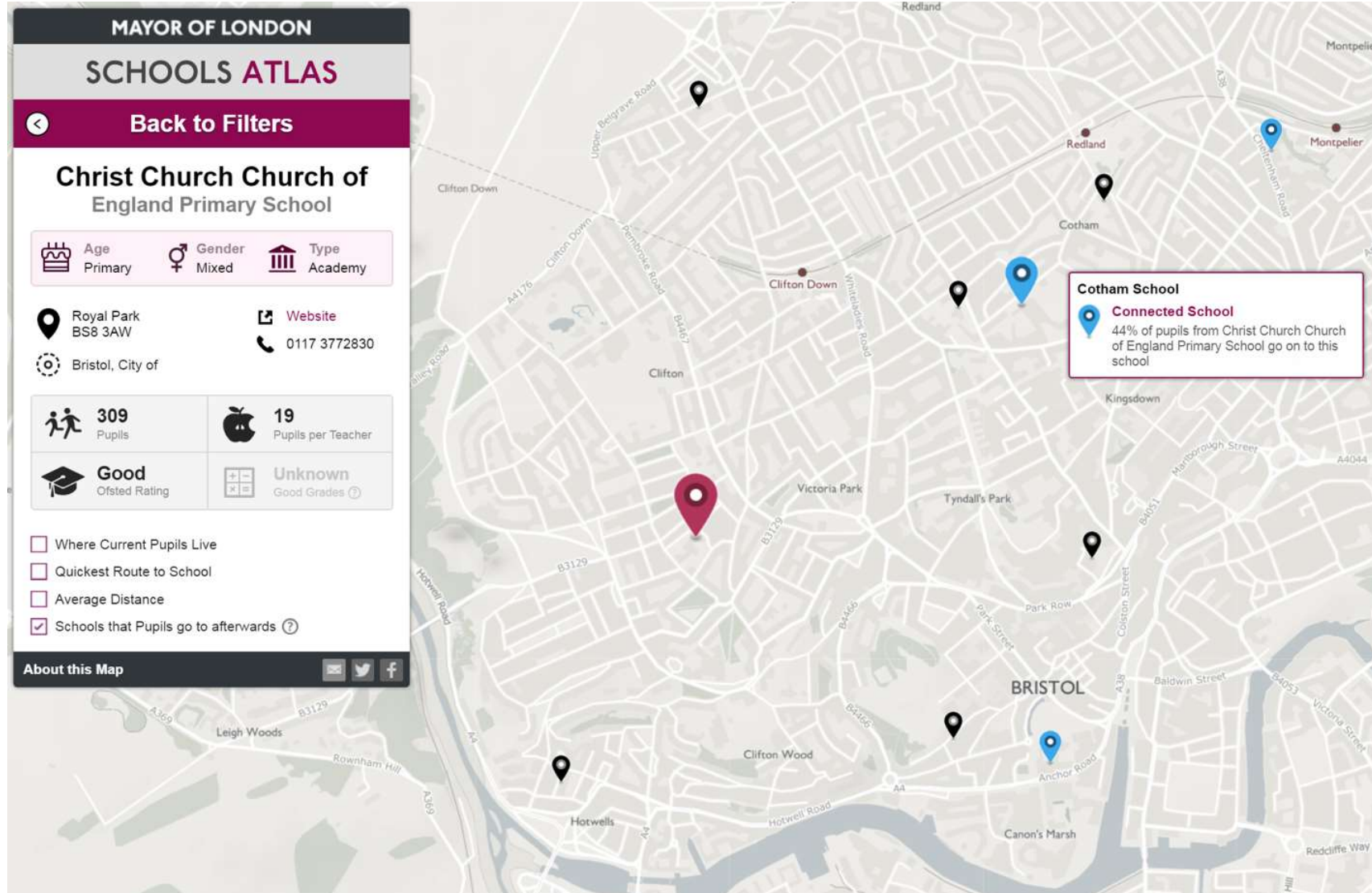
- Current products
 - London schools Atlas
 - School roll projections
- Work in development
 - Analysis of school preferences
 - Projections of pupils with SEND

Schools Atlas: Overview

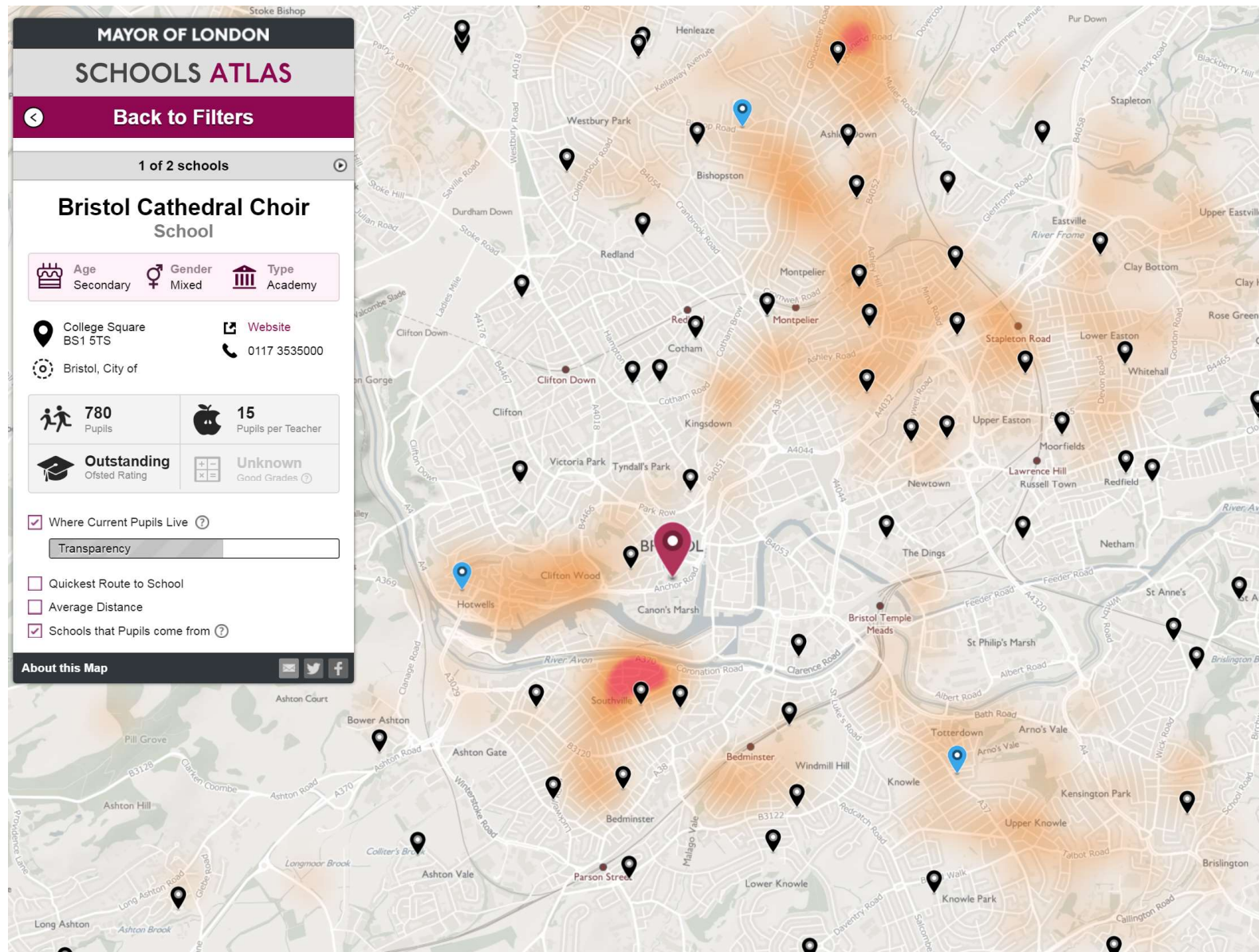
- Open Interactive tool
- Launched in Nov 2013
- Visualises:
 - Pupil flows (home <-> school)
 - School flows (Primary <-> Secondary)
 - Pupil distance travelled
 - Travel time
 - School performance



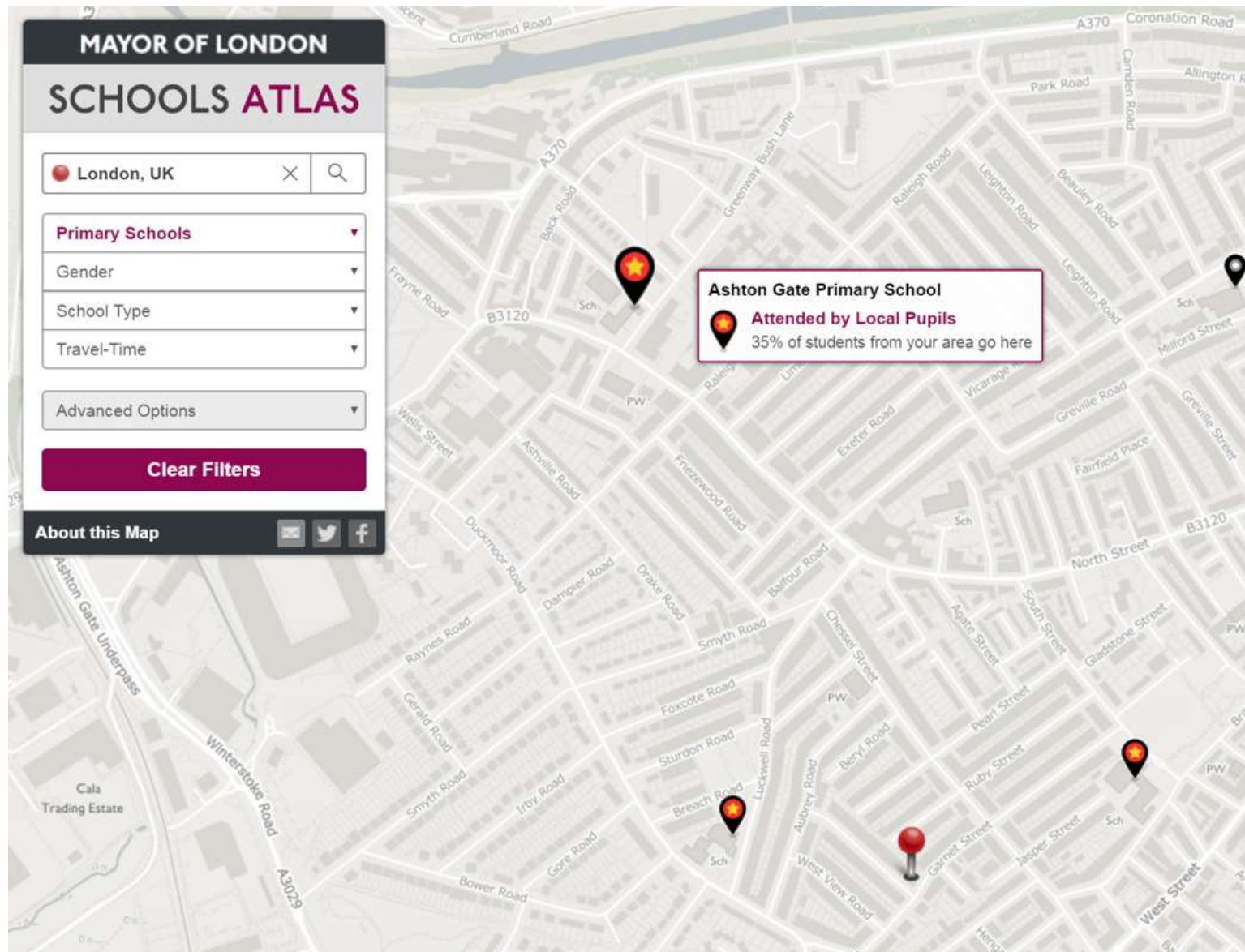
School flows Primary to Secondary



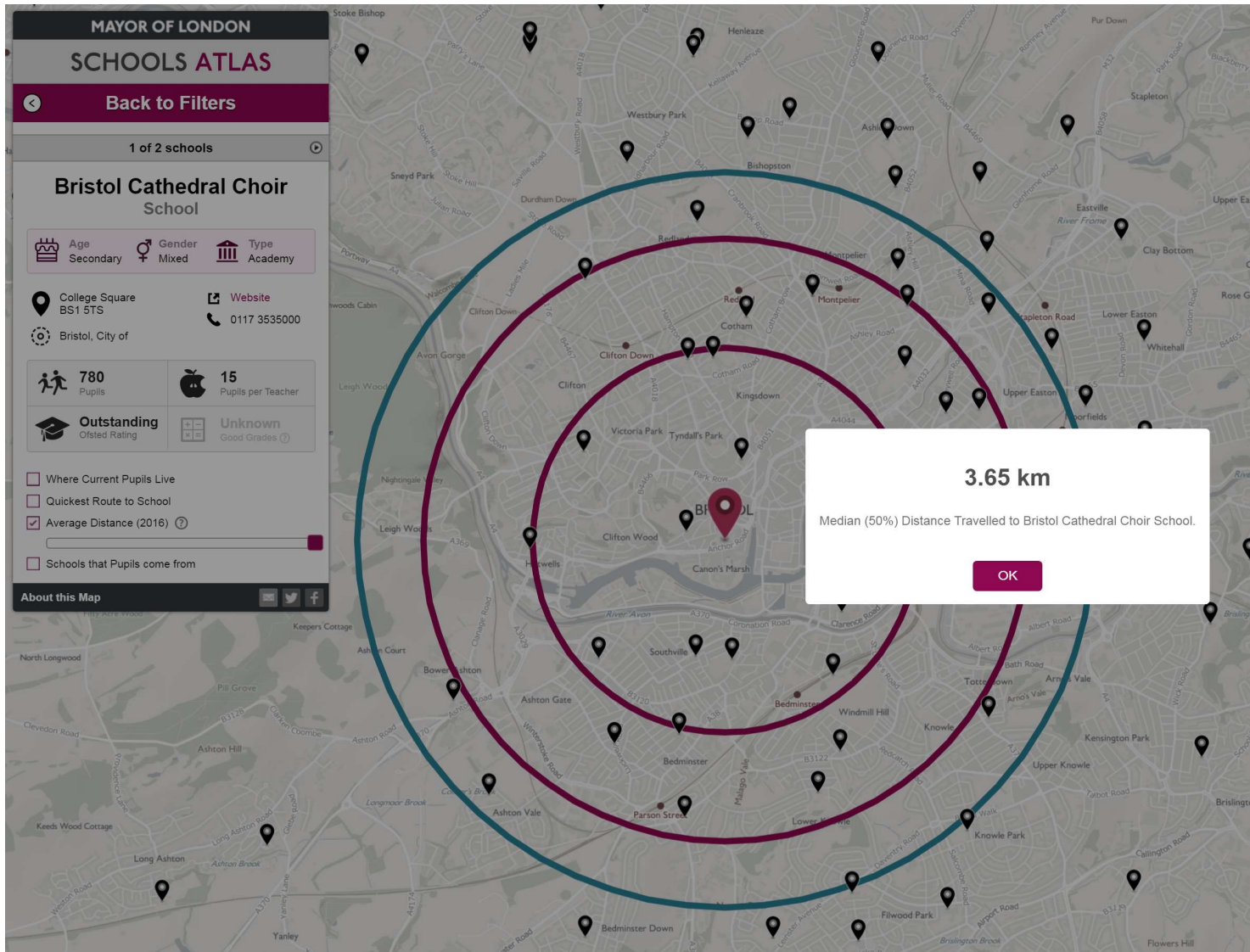
School catchments



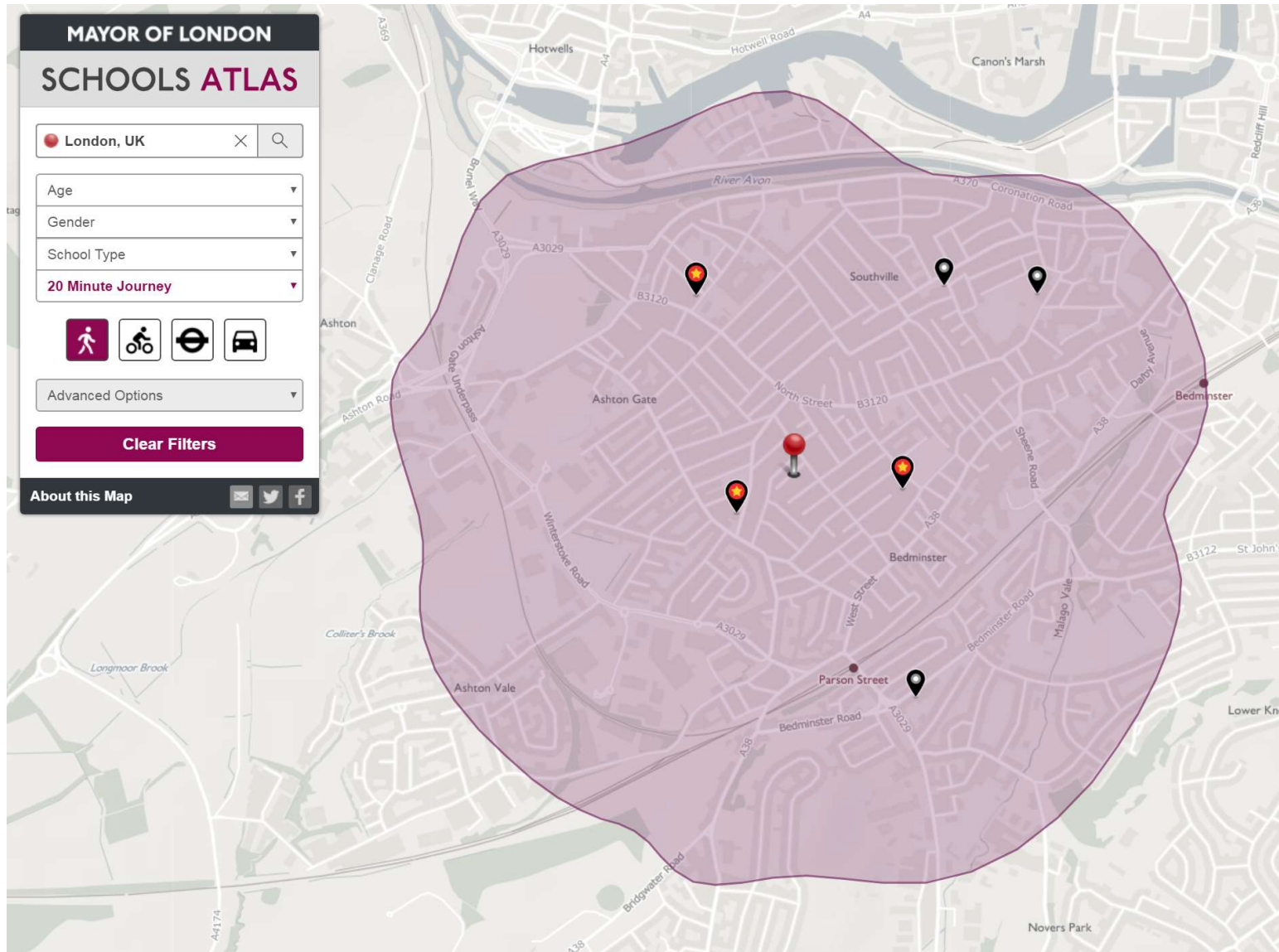
Home to school flows



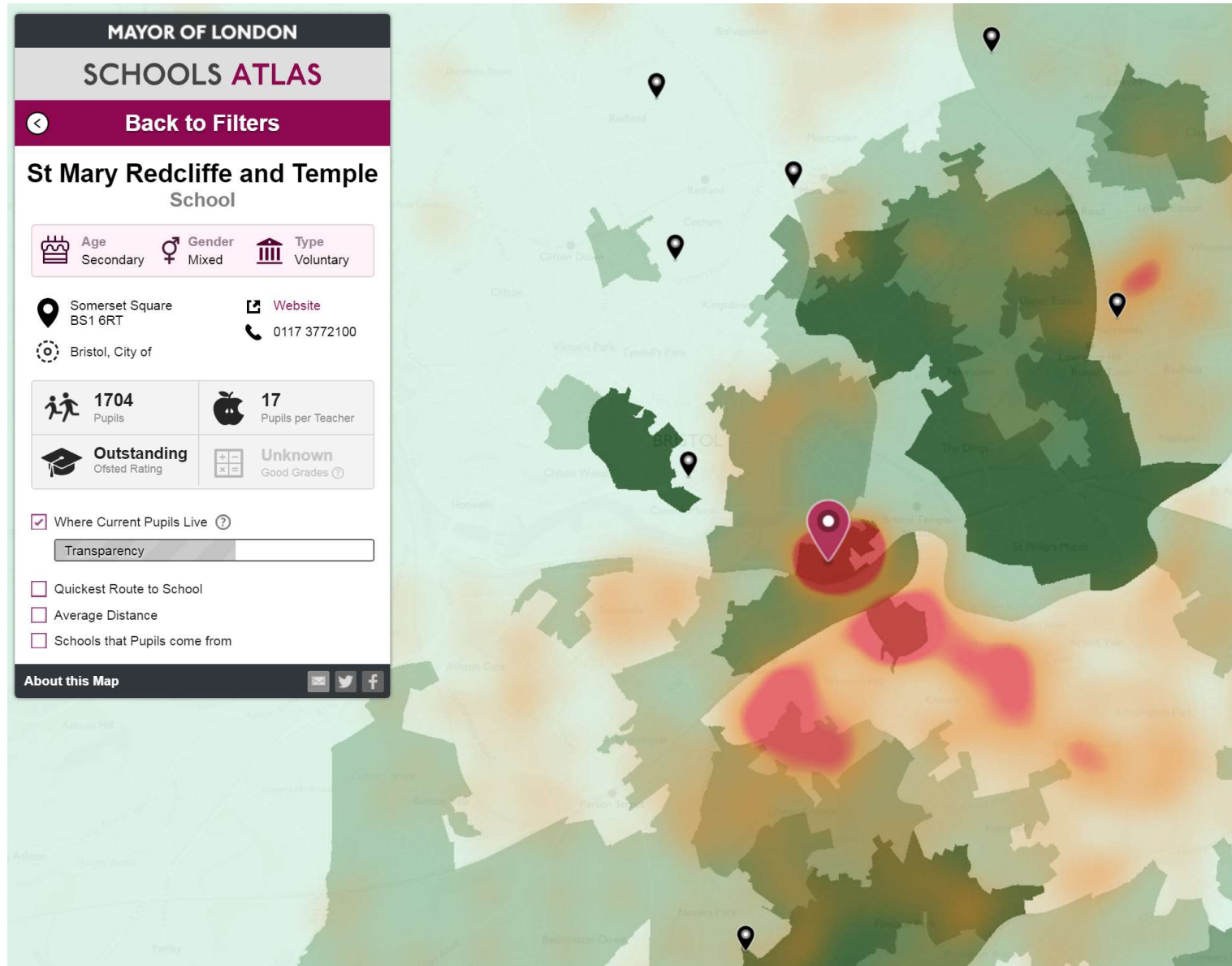
Distance travelled by pupils



Schools within a 20 minute travel



Combine layers

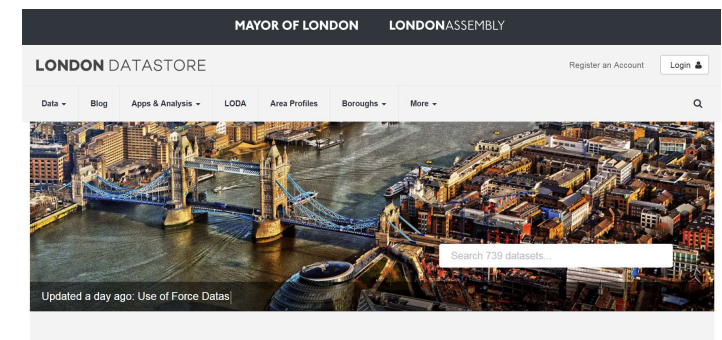


Technologies/data

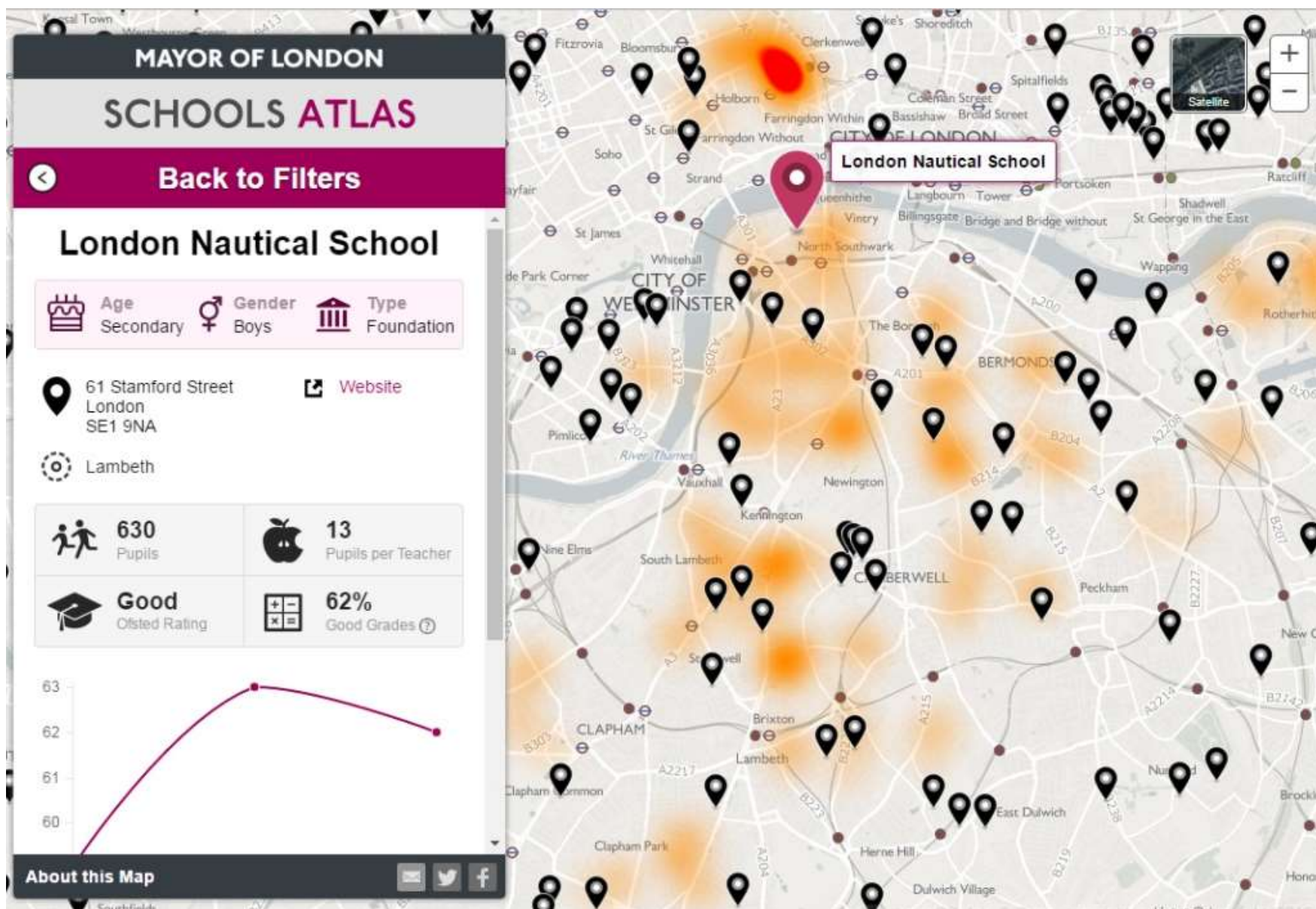
- Javascript Web Application
- Built on ESRI ArcGIS API & Travel time API (igeolise)
- Processed in FME
- Storage: PostgreSQL
- Data sources:
 1. NPD
 2. Edubase
 3. DfE school performance
 4. GLA Demographic projections
 5. London Output Area Classification



PostgreSQL



School roll projections



School roll projections products

- Pan London projections
 - Consistent strategic view for policy makers
 - Code and results online
(<https://data.london.gov.uk/dataset/pan-london-school-place-demand>)
- Bespoke borough projections
 - Subscription service
 - Informs SCAP return
 - Allows housing development scenarios

Benefits of using the NPD

- Link to the population projections of the areas where schools draw their pupils
- Complete and consistent data for all areas

Work flow for producing projections



Work flow for producing projections

The screenshot shows a web application interface for running school roll projections. The browser address bar indicates the URL is `http://127.0.0.1:7188`. The interface includes a navigation menu with three options: **Run projections** (selected), **Save school roll**, and **Population/births PA aggregations**. The main configuration area is divided into several sections:

- Borough:** A dropdown menu set to "Barking and Dagenham".
- Round year:** A dropdown menu set to "2018".
- Census month:** A dropdown menu set to "January".
- Select primary roll file:** A dropdown menu set to "Borough Primary Actual School Roll 2018 LBBD.csv".
- Select secondary roll file:** A dropdown menu set to "Borough Secondary Actual School Roll 2018 LBBD.csv".
- Population base year:** A dropdown menu set to "2016".
- Population projection type:** Radio buttons for "BPO" (selected), "SHLAA", and "other".
- Select a BPO:** A dropdown menu set to "Barking and Dagenham".
- Save roll for back-series:** A checked checkbox.
- No of back years for pupil distribution:** A dropdown menu set to "3".
- No of back years for new intake:** A dropdown menu set to "4".

A prominent green button labeled "Run projection model" is located at the bottom right of the configuration area.



Projections work flow

Q:/Teams/D&PA/Demography/Projections/R Models/DEV-SchoolRollProjectionModel/RunSRP - S...
 http://127.0.0.1:7188 | Open in Browser | Publish

Run projections
 Save school roll
 Population/births PA aggregations

Borough
 Barking and Dagenham

Round year
 2018

Census month
 January

Select primary roll file
 Borough Primary Actual School Roll 2018 LBBB.csv

Select secondary roll file
 Borough Secondary Actual School Roll 2018 LBBB.csv

Save roll for back-series

No of back years for pupil distribution
 3

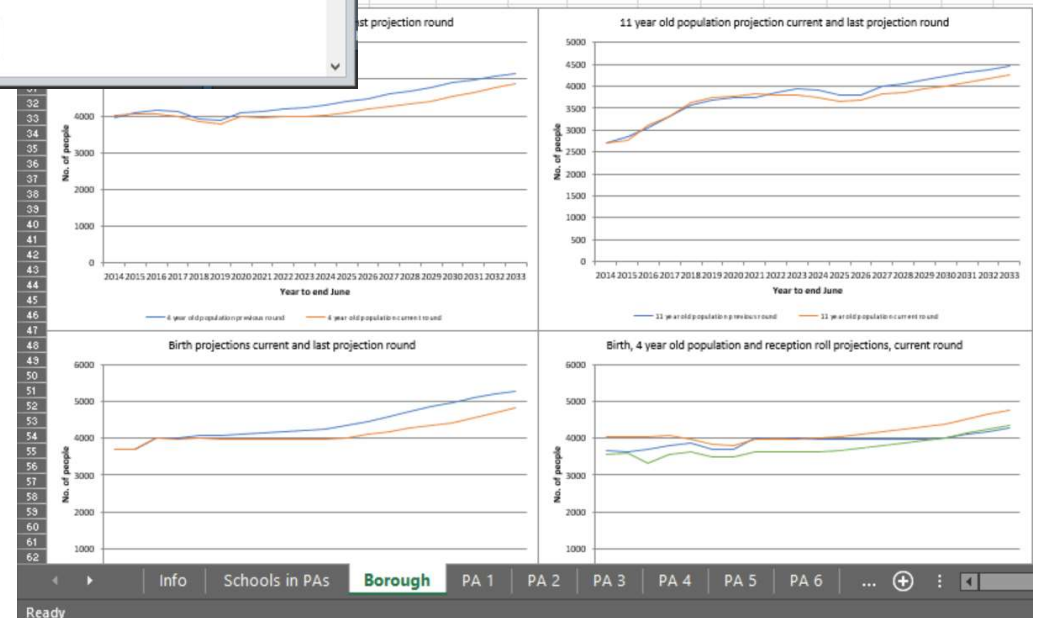
No of back years for new intake
 4

Population base year
 2016

Population projection type
 BPO
 SHLAA
 other

Select a BPO
 Barking and Dagenham

2	4231	4004	3933	3490	4967.2449	4421.0137	4011.7919	4395.1871	4004	3929.49	345
4	4331	4130	4012	3567	5089.5726	4567.0322	4105.3631	4527.7388	4130	4012.16	356
8	4423	4247	4094	3649	5199.0697	4700.9541	4191.8782	4653.3841	4247	4094.64	364
7		4358		3732	5293.2604	4822.3412	4271.7033	4769.1766	4358	4179.71	373



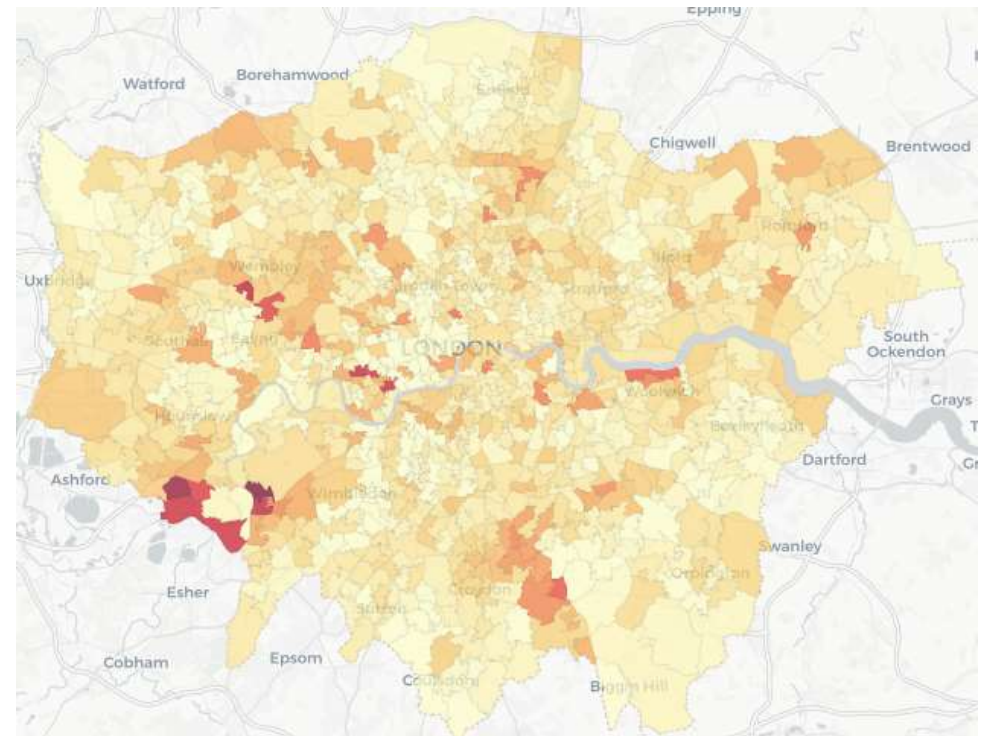
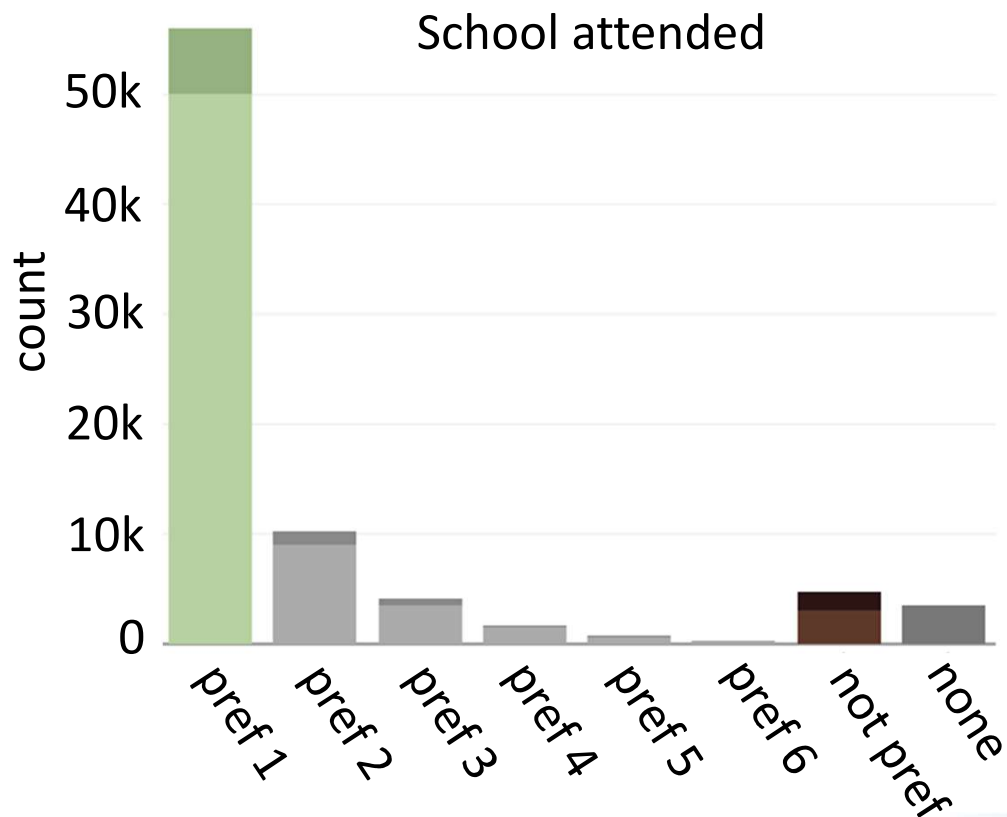
How we'd like to develop the model

Incorporate more data to understand demand and place allocation

- Drivers of parental preference
- School capacity data
- Scenario testing

Preferences data

- More than 81,000 pupils' preferences data (secondary schools, 2014/2015)
- Linked to January 2015 census
 - 56,000 pupils attending first preference (70%)
 - 4,800 pupils attending a school that was not one of their preferences (6%)
 - 3,500 pupils not found in the year 7 census

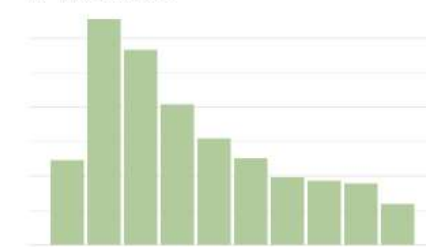


Preferences data - IMD

- Residents in less deprived areas:
 - More likely to get offer for first preference, less likely to get no preferences
 - More likely to be missing from Year 7 (probably private school)

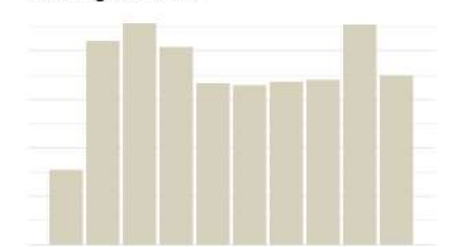
Category	N	Offered 1st pref	Offered no prefs	Not in Yr7	FSM %
Most deprived 10%	6,148	68.4%	4.8%	2.5%	53.7%
IMD 10-20%	16,383	69.0%	4.7%	2.5%	47.8%
IMD 20-30%	14,158	69.3%	4.8%	3.1%	39.1%
IMD 30-40%	10,188	67.4%	4.8%	3.9%	30.9%
IMD 40-50%	7,742	68.6%	4.4%	4.1%	26.1%
IMD 50-60%	6,279	69.9%	4.0%	5.0%	20.5%
IMD 60-70%	4,878	73.1%	3.9%	6.4%	15.9%
IMD 70-80%	4,628	75.5%	2.8%	6.8%	12.3%
IMD 80-90%	4,437	75.7%	2.8%	9.3%	8.5%
Least deprived 10%	2,949	76.2%	2.1%	10.6%	5.2%

In Yr7 Census



<- more deprived | IMD deciles | less deprived ->

Missing from Yr7

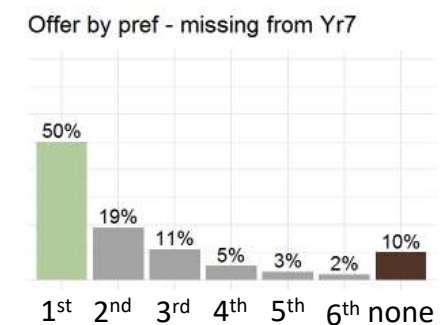
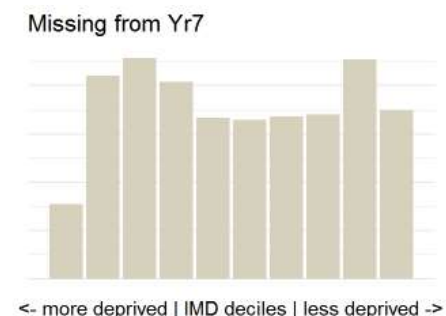
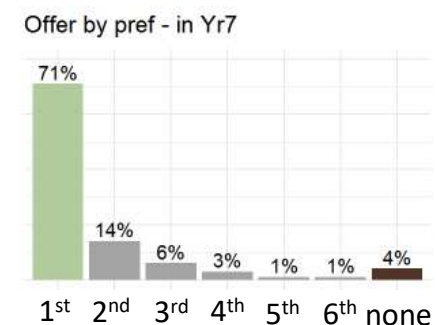
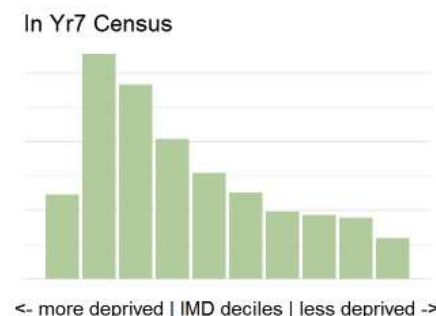


<- more deprived | IMD deciles | less deprived ->

Preferences data - IMD

- Residents in less deprived areas:
 - More likely to get offer for first preference, less likely to get no preferences
 - More likely to be missing from Year 7 (probably private school)
- Pupils not offered first preference more likely to be missing from year 7

Category	N	Offered 1st pref	Offered no prefs	Not in Yr7	FSM %
Most deprived 10%	6,148	68.4%	4.8%	2.5%	53.7%
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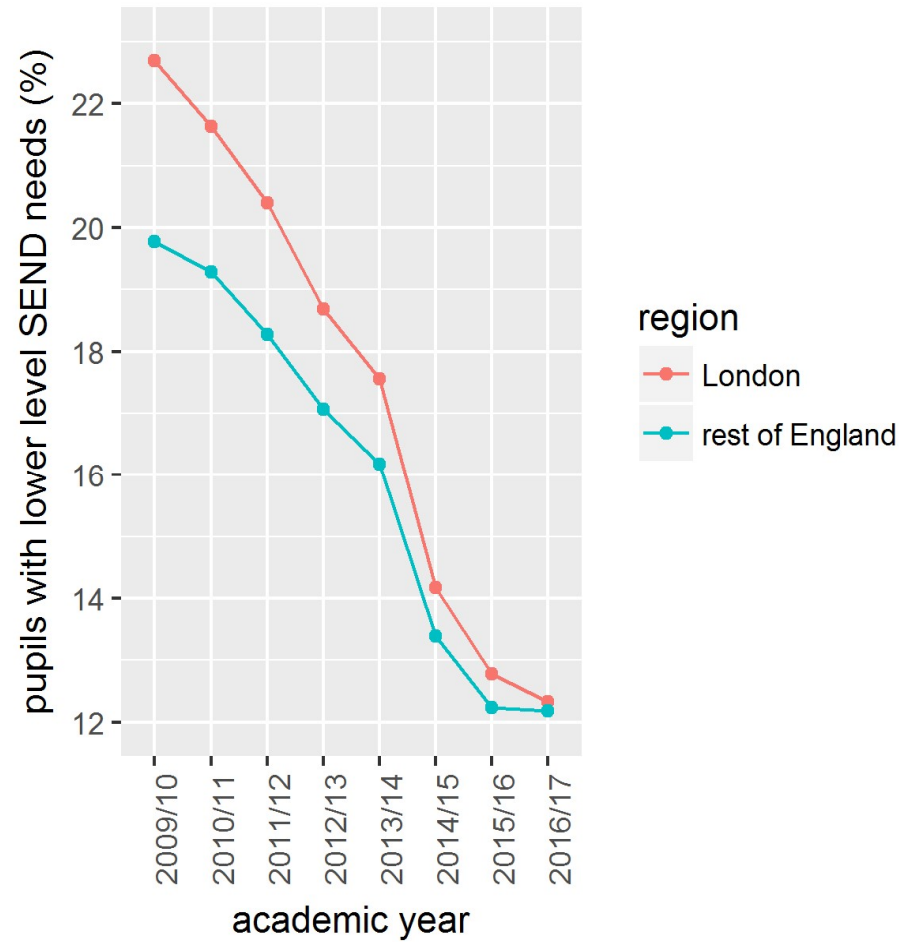
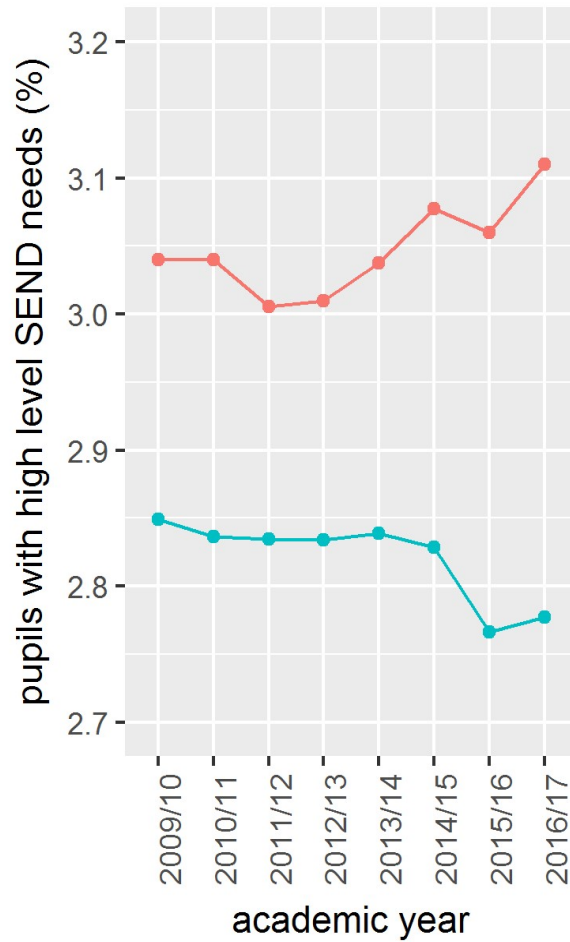
Projections of pupils with Special Educational Needs

- ~ 15 % of pupils have some form of SEND
- Statutory duty to ensure suitable school places
- Vulnerable pupils
- Cost
- Consistent pan-London picture to support planning

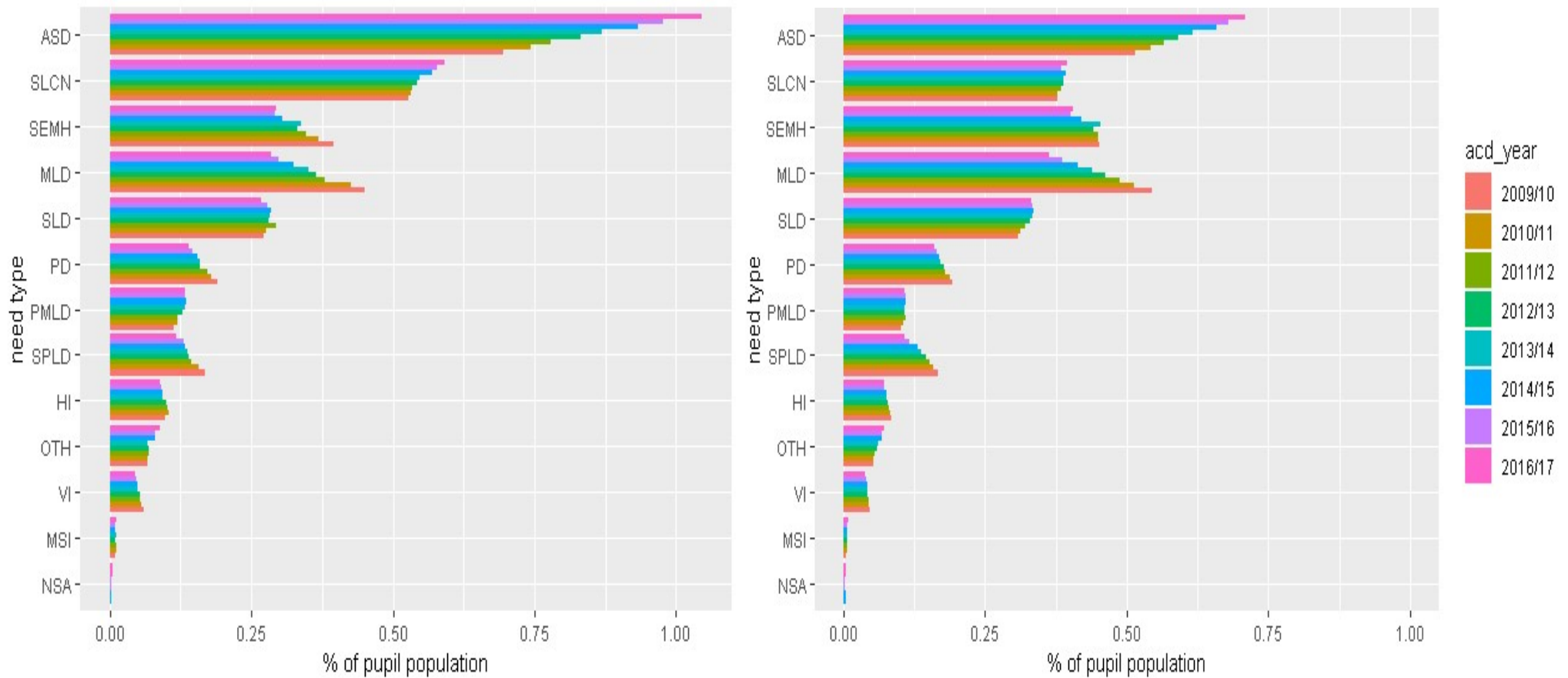
Data categories

- **Primary need type (+ Secondary need type)**
 - ASD = Autistic Spectrum Disorder
 - SEMH(/BESD) = Social, emotional and mental health
 - MLD = Moderate Learning Difficulty
 - SLCN = Speech, Language and Communication Needs
 - SPLD = Specific Learning Difficulty
 - SLD = Severe Learning Difficulty
 - PMLD = Profound & Multiple Learning Difficulty
 - HI = Hearing Impairment
 - VI = Visual Impairment
 - MSI = Multi-Sensory Impairment
 - PD = Physical Disability
 - OTH = Other Difficulty/Disability
 - NSA = SEN support but no specialist assessment of type of need (from 2014/15)
- **Need level**
 - EHC plan (statement)
 - SEN support (school action/plus)
- **Setting**
 - Mainstream
 - Resourced Provision
 - SEN unit
 - Special school

% of resident pupil population with SEND



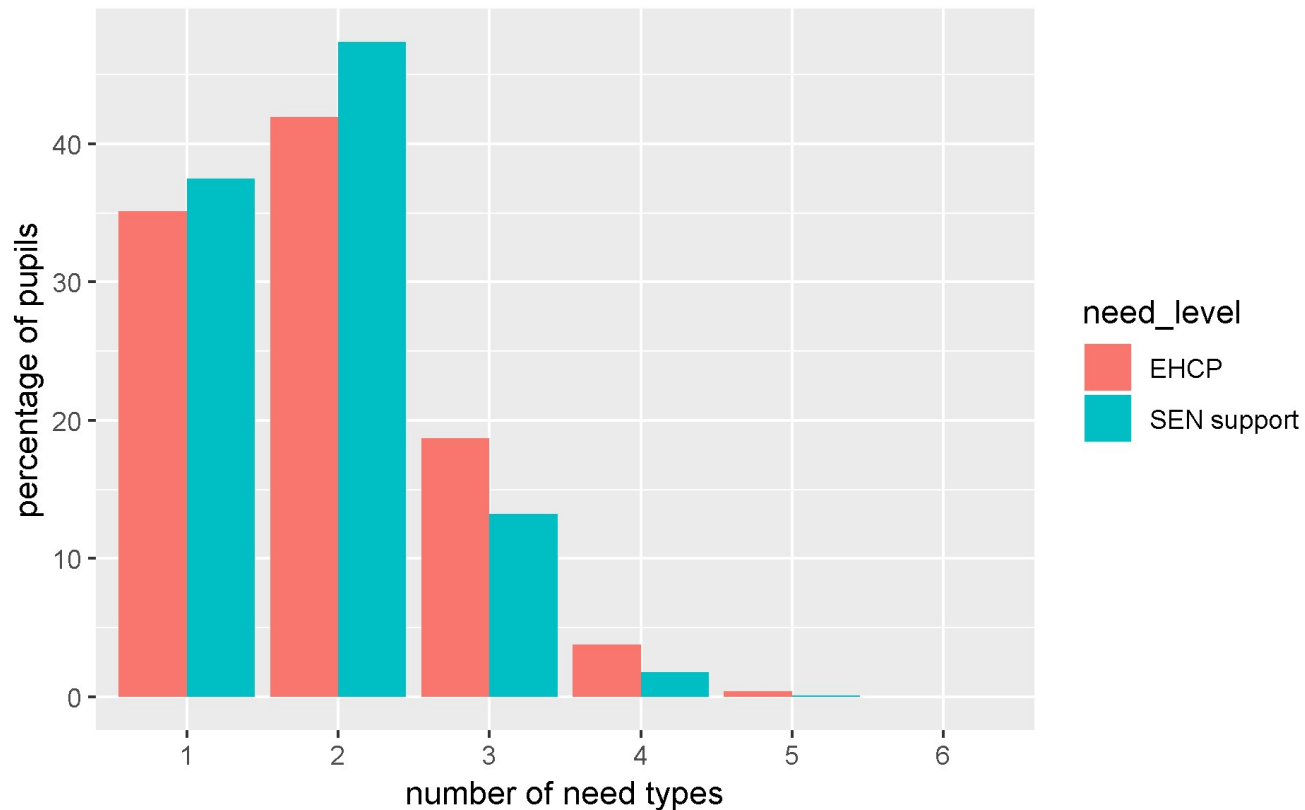
London vs rest of England resident pupils with EHC plans



Data issues and complexities

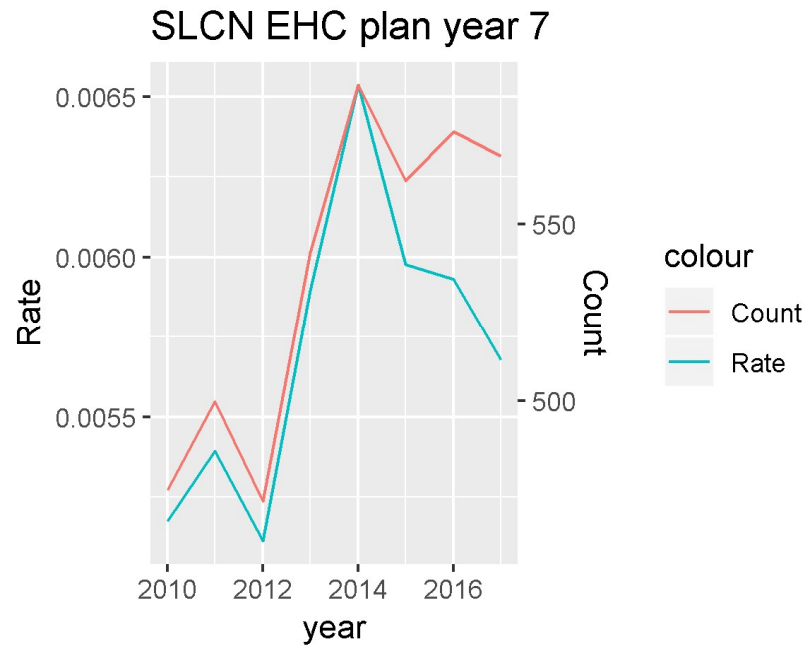
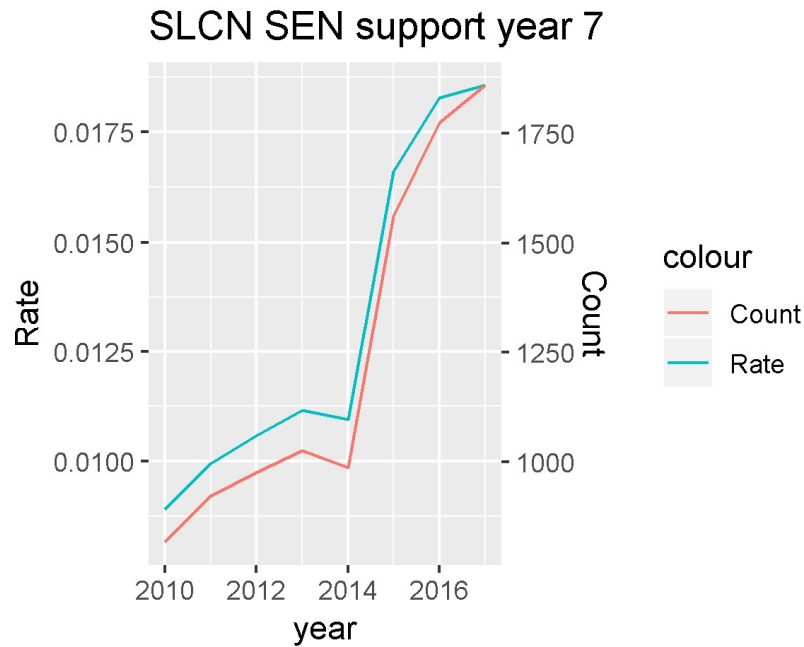
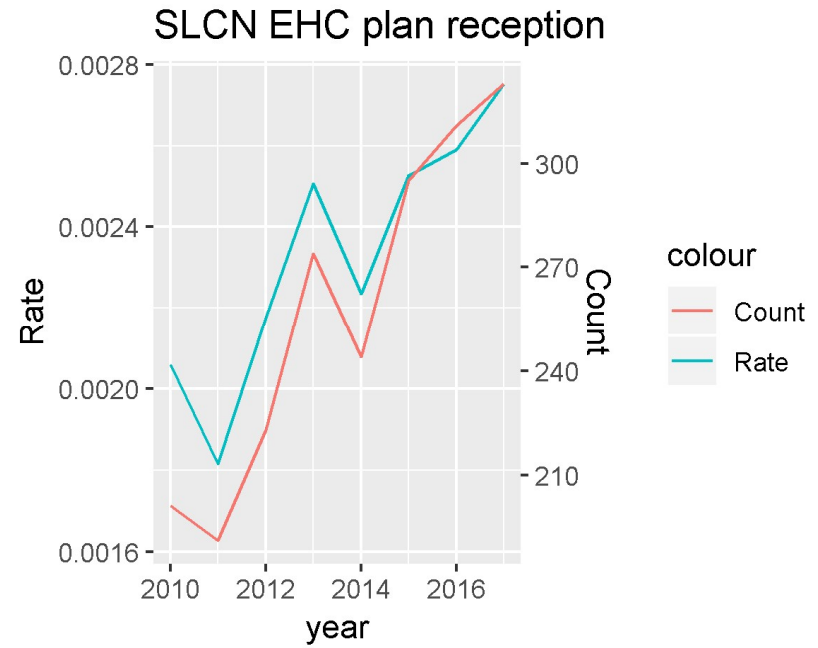
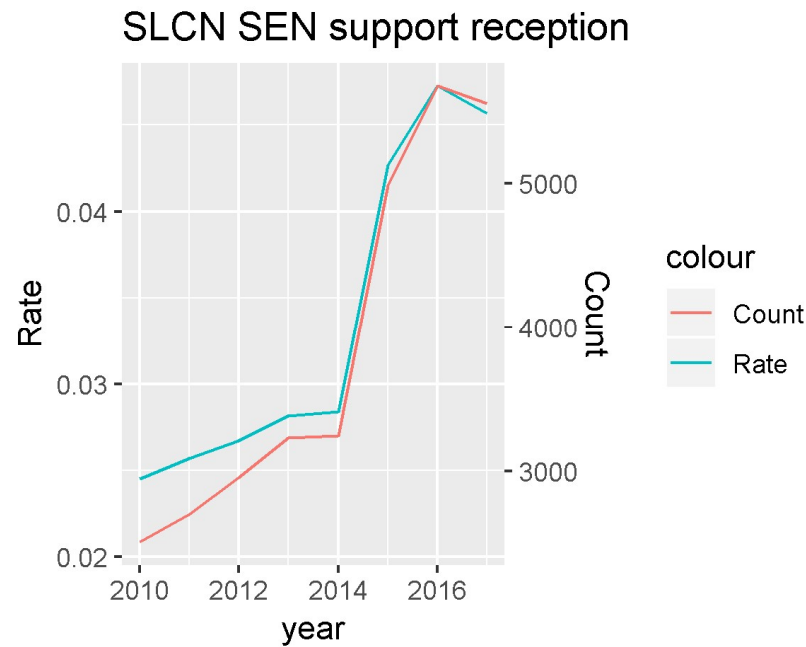
- Diagnosis/provision, not underlying need
 - Thresholds for EHC plans
 - Depends on setting
 - Recording of need types not always accurate
- EHC plans cover a broad range of need levels
- Multiple/changing needs
- 2014 reforms

Changing need types of individual pupils



For pupils present in all 8 years of our data who have a SEND need at any point in those 8 years and who have lived in London at any point.

Speech, Language and Communication Needs



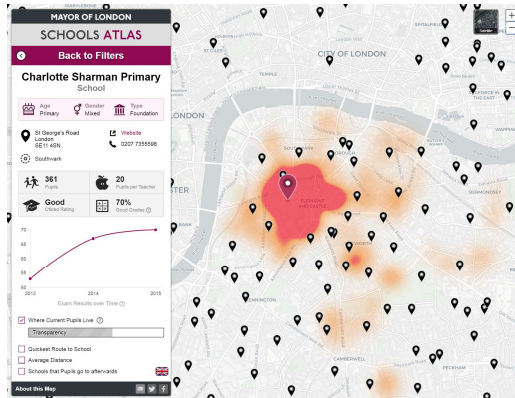
Initial projection approach

- Calculate new intake at R and year 7 as a percentage of the population
- Use transition rates in the interim years
- Where there are small numbers, use relationships derived from London level, applied to borough level numbers

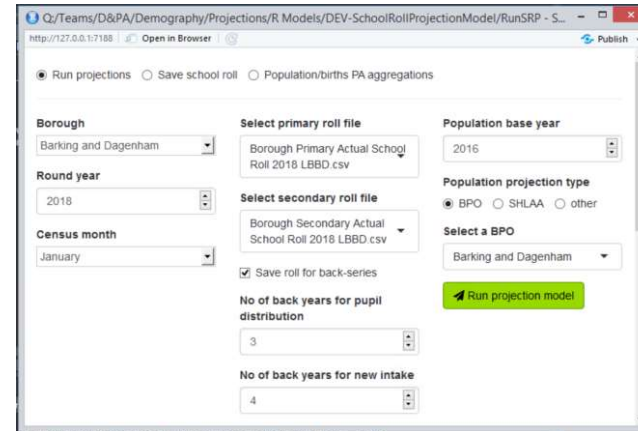
Results

- Not yet published
- Working with boroughs to finalise methodology
- Identified need for supporting analysis

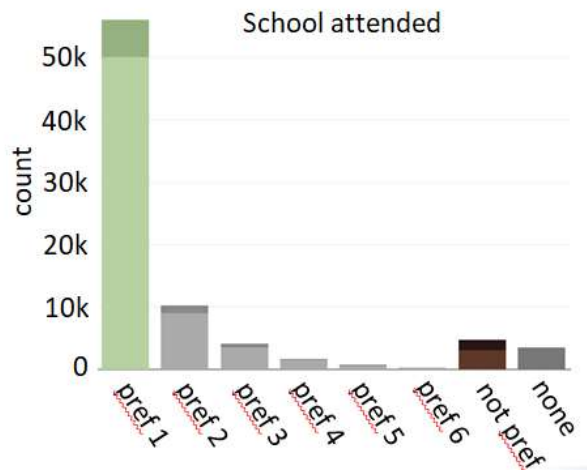
Questions?



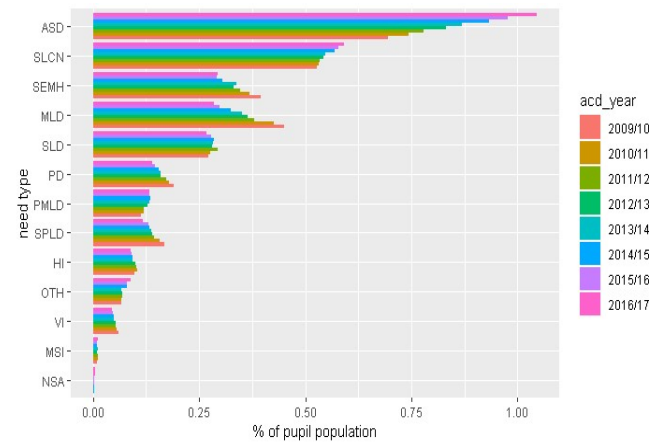
London Schools Atlas



School roll projections



Pupil preferences



SEND projections

