A Proposal

to Perform Demographic Services

for the

Franklin Lakes School District

Prepared: September 26, 2020

STATISTICAL FORECASTING LLC

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Company Overview

Founded in 1998, Statistical Forecasting has been providing school demographic services such as enrollment projections, GIS computer mapping, and re-districting for school districts in the New York/New Jersey metropolitan area for the past 22 years. Our demographic studies are very comprehensive and are highly accurate as evidenced by our low error rates and large number of returning clients. We have provided demographic services for more than 150 districts in New Jersey. In addition, since 2006, we have been the demographic consultant to the New York City Public Schools, which is the largest school district in the country.

Statistical Forecasting is led by Richard S. Grip Ed.D., Executive Director, who possesses a doctorate in educational statistics and measurement from Rutgers University (NJ). His dissertation, *Prediction of Public School Enrollments Using the Modified Regression Technique*, received the Outstanding Dissertation Award from the Rutgers University Graduate School of Education in 1998. Dr. Grip has testified as an expert witness in school demography, has written papers in numerous journals such as *Population Research and Policy Review*, and has presented nationally and internationally for the Population Association of America, American Educational Research Association, American Association of School Administrators, and Association of American Geographers. A curriculum vitae has been provided in the Appendix.

Consultant Qualifications and References

As stated previously, Statistical Forecasting has completed demographic studies for more than 150 school districts in the State of New Jersey. This is our specialty; this is the only type of work we do. To project enrollments, we use the cohort-survival ratio method, which is approved by the New Jersey Department of Education ("NJDOE"). The following table lists three similar projects that have been recently completed by our firm.

	Project #1	Project #2	Project #3
School District:	East Brunswick Public Schools (PK-12)	School District of the Chathams (PK-12)	West Windsor-Plainsboro Regional School District (PK-12)
Year Completed	2014, 2017, 2018, 2019	2018, 2019	2013, 2018
Scope of Services:	Performed demographic study consisting of ten-year enrollment projections. Analyzed township housing starts, historical birth trends, and socio-economic/ demographic trends from the Census. Student yields were computed by attendance area for apartments and townhouses, and detached single-family homes. Completed redistricting analysis by modifying attendance area boundaries using GIS.	Performed demographic study consisting of five-year enrollment projections. Disaggregated births by census tract and block to compute kindergarten students by elementary school attendance area. Geocoded students over time to slow relative concentrations of where students live. Completed extensive housing turnover analysis looking at historical home sales and student yields per housing unit.	Performed demographic study consisting of five-year enrollment projections. Disaggregated births by census tract and block to compute kindergarten students by elementary school attendance area. Completed extensive housing turnover analysis looking at historical home sales and student yields per housing unit. Student yields were computed by attendance area for apartments and townhouses, and detached single-family homes.

Contact Representative Name:	Mr. Bernardo Giuliana Business Administrator/ Board Secretary	Dr. Michael LaSusa Superintendent	Dr. David Aderhold Superintendent
District Enrollment	8,020	4,200	9,700
Contact Representative Phone Number:	732-613-6723	973-457-2501	609-716-5000 x5040

Scope of Services

Option 1: Demographic Study

A Demographic Study would be prepared consisting of the following information:

a) Community Overview

As part of our general overview on the Borough of Franklin Lakes ("Franklin Lakes"), we would collect historical population counts (1940-2010) from the United States Census Bureau and future population projections from the North Jersey Transportation Planning Authority. Selected demographic characteristics, such as racial breakdown, income levels, educational attainment, and number of owner- and renter- occupied units, would be compared at two time points: 2010 and 2014-18, using data from the Census and the American Community Survey.

b) Live Birth Data

Birth data for Franklin Lakes would be obtained from the New Jersey Department of Health. Accurate birth data is needed to project the number of kindergarten students five years later. Kindergarten enrollments would be calculated as follows. Birth data, lagged five years behind its respective kindergarten class, would be used to calculate the survival ratio for each birth-to-kindergarten cohort. Average birth-to-kindergarten survival ratios are computed using three, four, five, or six-year trends.

Birth data from 2005-2019 will be used to project the number of kindergarten students through 2024. To project the number of kindergarten students for 2025, birth counts for 2020 would need to be estimated by averaging the number of births in the last five or six years.

c) Historical Enrollment Trends

A review of the district's historical enrollment trends for the past ten years would be conducted using data from the Fall Report and NJ SMART databases. This would be conducted not only for the entire district, but also by grade configuration (PK-5 and 6-8).

d) Self-Contained Special Education

Since there are no survival rates for self-contained special education students as compared to regular education students, a different methodology is employed. Special education enrollments are projected by calculating the average proportion (based on a certain number of years of historical data) of self-contained special education students with respect to the historical regular education

subtotals and multiplying this proportion by the future regular education subtotals. This method has been found to be highly accurate, provided that a district has not changed its policy on educating special education students. For instance, if a district, has decided in the last year that it would like to mainstream more of its special education population, using an average special education proportion from the last three years would overly inflate the number of special education students.

e) Enrollment Projections

To complete the proposed work, PK-8 enrollments would be projected annually for a five-year period beginning with the 2021-22 school year and ending in 2025-26 using the Cohort-Survival Ratio ("CSR") method. In this method, a survival ratio is computed for each grade progression, which essentially compares the number of students in a particular grade to the number of students in the previous grade during the previous year. Simply stated, a survival ratio of 1.00 indicates stable enrollment, less than 1.00 indicates declining enrollment, while greater than 1.00 indicates increasing enrollment. If, for example, a school district had 100 fourth graders and the next year only had 95 fifth graders, the survival ratio would be 0.95. Due to the fluctuation in survival ratios from year to year, it is necessary to calculate an average survival ratio. This value is then used to calculate future grade enrollments five years into the future. Depending upon growth patterns in the district, average or weighted-average survival ratios would be based on a four-year, five-year, or six-year trend. The average survival ratios selected would be at the discretion of our firm.

The enrollment projections would be completed by grade <u>but not by individual school</u>. If the district would like projections for the individual schools, it should select **Option 2** below as well.

It is our understanding that there are four (4) schools in the district: three (3) elementary (PK-5) and one (1) middle (6-8).

The enrollment projections will be shown annually for the five-year period according to the following distributions:

1. District-wide PK-12 by individual grades
2. Grade Configuration (PK-5 and 6-8)

f) Housing Growth

The Franklin Lakes construction and/or planning departments would be contacted to receive information on new home construction to determine the impact, if any, on the school district. Approved residential developments and developments under construction will be analyzed. The number of potential children would be estimated using the Rutgers University Center for Policy Research ("CUPR") student yield multipliers.

g) Capacity Analysis

Using Long Range Facilities Plan ("LRFP") information, the existing educational capacities of the grade configurations in the district will be compared to the current enrollments in 2020-21 and projected enrollments in the 2025-26 school year. Based on the projections and capacities, we will be able to identify future surpluses or inadequate seating.

b) Homes Sales

The number of Franklin Lakes home sales will be collected to show historical trends.

Deliverables

Statistical Forecasting LLC will provide an electronic copy of the report in PDF format. We would be able to submit the report within 90 days upon receipt of all data. Our reports contain an array of tables and charts, which enable them to be read and understood by a wide range of audiences.

If desired, a PowerPoint presentation can be provided to the Board of Education summarizing the findings of the study.

Option 1 Cost of Service:

$6,200 (no presentation) ✓ check if desired
$6,500 (with remote Skype presentation) ___ check if desired
$7,200 (with in-person presentation) ___ check if desired

The following represents additional options that the district may consider.

Option 2: Projections by Individual Elementary School

In this option, the enrollment projections would be performed for each of the district's elementary schools. Birth data would be collected by census tract or census block for Franklin Lakes and would be obtained from the New Jersey Department of Health. Births by census block or tract would then be aggregated by the individual elementary area attendance boundaries. To complete this task, we will require each elementary school's attendance area be provided in a shapefile suitable for mapping software. If the district does not have shapefiles of the elementary boundaries, we have the ability to create them (Option #3).

Birth data from 2005-2019 by attendance area will be used to project the number of kindergarten students at each elementary school. Birth data will be mapped by census block, census tract, or attendance area for 2005 and 2019 to show the change in birth counts in Franklin Lakes over this time period.

Option 2 Cost of Service: **$2,900** ___ check if desired

Option 3: Shapefile Creation

We would create shapefiles of the elementary school boundaries for use in a mapping software program. The shapefiles would be necessary to show the relative number of births in each attendance zone as outlined in Option #2. The district would also receive the shapefiles as a deliverable at the end of the project.

Option 3 Cost of Service: **$1,600** ___ check if desired

Option 4: Detailed Housing Analysis

In this option, we would compute student yields explicitly based on Franklin Lakes housing data, which would be most useful if the community has a large number of new housing units planned. This would provide more specific yields for any proposed housing construction as compared to the yields available from CUPR, which are based on state data and are not specific to local communities.

Homes owned 10 or fewer years will only be considered, as homes with low lengths of ownership typically have the most children according to our research. This would only be computed for detached single-family homes and would not include rentals or apartments. We would join the district's 2020-21 student database with the property database of Franklin Lakes. Student yields by housing type will then be computed where the number of school children will be tabulated and divided by the total number of homes to determine the student yield per home.

Apartment and townhouse/condominium student yields will also be computed based on the number of units in a complex and the number of current students residing in the development.

The number of school children projected from any new housing developments would be computed by using the student yields extracted from this analysis, which provides a more valid way of estimating future school children since we would be using actual yields as derived from existing housing data.

Option 4 Cost of Service: **$4,800** ___ check if desired

Option 5: GIS Mapping

We will geocode (electronically pin-map) student addresses from the 2015-16 and 2020-21 school years. Data specifications for the student address database are provided in the Appendix. Using Geographic Information Systems computer mapping software, we would generate maps showing the following outputs over the two different time periods:

- Locations of where students live.
- Student population by census block or tract to show the locations where the fewest and greatest number of students resides.
- Student density by census block or tract. Since census blocks/tracts vary in size, these maps show the fewest and greatest number of students per square mile by census block/tract.
- Number of students per housing unit (student yield) by census block/tract.

Option 5 Cost of Service: **$1,800** ___ check if desired

Option 6: Race and Poverty Analysis

The racial distribution of students will be compared at two time points, 2015-16 and 2020-21, to determine if there has been a shift in racial composition in the district. Enrollments by race will be analyzed not only for the entire district, but by school as well.

As a proxy for measuring poverty in the school district, counts of students receiving free or reduced lunch will be compiled by school for 2015-16 through 2020-21. This will aid in determining whether there are any trends, either increasing or decreasing, in the percentage of students in poverty.

Option 6 Cost of Service: **$1,800** ___ check if desired

Option 7: Housing Turnover Analysis

Rising enrollment in a school district is often not due to new housing growth, but is instead caused by the selling of homes of older residents to families with children. To analyze the existing housing turnover rate, parcel-level data of approximately 3,300 owner-occupied housing units (not including apartments) from Franklin Lakes will be combined with student address data, the latter to be provided by the district. The housing units that will be analyzed are 1- to 4-family homes. From the parcel-level data, we will be able to identify homes that have sold recently (in the last 30-40 years). This will help to determine a) the housing turnover rates by length of ownership and b) the current distribution of homes by length of ownership. The student address data will be used to compute the student yields (average number of students per housing unit) by length of ownership.

In short, the housing turnover model uses length of home ownership as a proxy for the age of the homeowners since this variable is unknown and cannot be accurately determined through other data collection methods such as surveys. Research has shown that student yields are smallest in long-held homes and greatest in homes that were recently sold. While it has been shown that enrollment tends to increase when long-held homes are sold, it is not clear that the ***overall*** enrollment will increase in the district since some houses that currently contain children will have declining yields as children graduate or leave the district to attend private or parochial schools. Therefore, it is not correct to assume that having a high percentage of long-held homes will lead to an enrollment increase in the district.

As deliverables, we would project a distribution of 1- to 4-family homes based on length of ownership and historical turnover rates for five years into the future. Residences such as apartments are excluded since the length of time a tenant occupies a residence cannot be determined. Using the student yields computed separately for length of ownership, the total number of students would be projected for a period of five years into the future. Unfortunately, due to data constraints, it is not possible to compute enrollment at the grade configuration level. A comparison can then be made of the projected total number of students through this analysis and those from the Cohort-Survival Ratio method in Option 1. It should be noted that this is a completely independent analysis that can show housing turnover rate scenarios whereby enrollment in the district is likely to increase.

Option 7 Cost of Service: **$6,500** ___ check if desired

Option 8: Redistricting and Attendance Boundary Modification

In the event the Franklin Lakes School District intends to redraw its attendance boundaries, Statistical Forecasting would initially perform the following:

- Geocode the district's student address database annually from 2015-16 through 2020-21.
- Generate a series of maps showing where each student lives in the district with respect to the current attendance area boundaries.

After the addresses have been geocoded, the Franklin Lakes School District Board/Administration will make recommendations as to the new attendance boundaries. We would then redraw the attendance areas, creating additional mapping files, based on the Board's/Administration's recommendations in each alternative scenario. The cost shown below is for each scenario that the Board wants to explore.

Statistical Forecasting would then do the following:

- Create shapefiles of each new attendance area for each scenario.
- Tabulate, by grade, the number of students that would have been in these attendance zones from 2015-16 through 2020-21.
- Project enrollment for five years (2021-22 to 2025-26) by grade using the Cohort-Survival Ratio Method for the new attendance zones. The projections would be compared to the building capacities in each of the schools.
- Compute the "disruption factor", i.e., the percentage of students who are attending a different school as a result of the redistricting.

Our analysis does not include transportation costs incurred in the alternative scenarios, nor would it consider average time of students riding on a bus.

Option 8 Cost of Service: **$3,900 per scenario** ___ check if desired
Number of scenarios Desired ____

Notes:

- The quoted prices above do not include on-site meetings, which if requested, cost $1,000 plus travel-related reimbursable expenses. Skype and telephone conferences are free.

- If a presentation is desired, the cost above does **not** include all travel-related reimbursable expenses such as mileage, hotel accommodations, and meals.

- Any requests for services to be performed outside the scope of this proposal will need to be negotiated with Statistical Forecasting as a change order and to be verified in writing.

- This proposal has been prepared by Dr. Richard S. Grip, Executive Director of the firm. The proposal shall be valid for sixty (60) days from the day of submission.

- While Statistical Forecasting strives to provide accurate enrollment projections, future events occurring in Franklin Lakes that are beyond the control of Statistical Forecasting LLC may affect the accuracy of the demographic study. The enrollment projections produced by Statistical Forecasting use the most recent data available at the time of the study. By agreeing to the terms set forth in this document, the Franklin Lakes School District will not hold Statistical Forecasting liable for any change in enrollments for the stated projection period.

Agreed by Franklin Lakes School District

MICHAEL J. SOLOKAS
Name

BUSINESS ADMINISTRATOR
Title

10/2/2020
Date

Michael J. Solokas
Signature

Agreed by Statistical Forecasting

Richard S. Grip Ed.D.
Name

Executive Director
Title

September 26, 2020
Date

Richard S. Grip
Signature

APPENDIX

Student Address Data Specifications for Geocoding

Required Data: Each record (row) of the student enrollment database should contain data for one **ACTIVE** student. Each of the numbered items below should be a separate field (column) in the database. In the home address field (#4), the information should always be in the indicated order.

1. student's last name, first name (separate fields)
2. school attending
3. grade level (K or 0, 1, 2, 3, etc.) for all students, including special education students
4. student's home address (number, street name, street type, apartment # or letter, city, zip) This information needs to be separated into the following fields.
    a) Number and street name
    b) Apartment number, if applicable **(MUST BE IN SEPARATE FIELD)**
    c) City
    d) State
    e) Zip Code

Please include a *street address* (not a Post Office Box) for each student. It is very important to include the street type (Road, Street, Court, etc.). The only abbreviations that should be used are for street types. These abbreviations should be standardized as follows:

Avenue = Ave	Court = Ct	Place = Pl	Way = Wy
Boulevard = Blvd	Drive = Dr	Road = Rd	
Circle = Cir	Lane = Ln	Street = St	

Client List

Allamuchy School District (NJ)
Arlington Public Schools (VA)
Atlantic City School District (NJ)
Bedford Central School District (NY)
Berkeley Heights Public Schools (NJ)
Bernards Township School District (NJ)
Bismarck Public School District (ND)
Blairstown Township School District (NJ)
Boonton Township Public Schools (NJ)
Brewster Central School District (NY)
Brick Township School District (NJ)
Bridgewater-Raritan Regional School District (NJ)
Carteret School District (NJ)
Cedar Grove School District (NJ)
Cherry Hill Public Schools (NJ)
Clayton Public Schools (NJ)
Clinton Township School District (NJ)
Colts Neck Township Schools (NJ)
Commercial Township School District (NJ)
Cranbury School District (NJ)
Cresskill Public Schools (NJ)
Deptford Township School District (NJ)
Dobbs Ferry Union Free School District (NJ)
East Brunswick Public Schools (NJ)
East Hanover Township School District (NJ)
East Orange School District (NJ)
East Rutherford School District (NJ)
Elizabeth Public Schools (NJ)
Englewood Cliffs School District (NJ)
Evesham Public Schools (NJ)
Ewing Public Schools (NJ)
Fair Lawn Public Schools (NJ)
Fairfield Public Schools (NJ) – Essex Co. (NJ)
Fairfield Township School District - Cumberland Co.(NJ)
Fairport Central School District (NY)
Flemington-Raritan Regional School District (NJ)
Florence Township School District (NJ)
Fort Lee School District (NJ)
Franklin Township Public Schools - Somerset Co. (NJ)
Frelinghuysen Township School District (NJ)
Galloway Township School District (NJ)
Glassboro School District (NJ)
Glen Rock Public Schools (NJ)
Greenwich Public Schools (CT)
Hackensack Public Schools (NJ)
Hackettstown School District (NJ)
Haddonfield Public Schools (NJ)

Hamilton Township School District - Mercer Co. (NJ)
Hanover Township Public Schools (NJ)
High Point Regional High School District (NJ)
Hopewell Township School District – Cumberland Co. (NJ)
Hopewell Valley Regional School District (NJ)
Jackson School District (NJ)
Jamesburg School District (NJ)
Katonah-Lewisboro Union Free School District (NY)
Knowlton Township School District (NJ)
Lawrence Township School District- Mercer Co. (NJ)
Linden Public Schools (NJ)
Little Egg Harbor Township School District (NJ)
Long Beach Island Consolidated School District (NJ)
Long Hill Township School District (NJ)
Loudoun County Public Schools (VA)
Manchester Township School District (NJ)
Matawan-Aberdeen Regional School District (NJ)
Medford Township School District (NJ)
Mendham Borough Public Schools (NJ)
Metuchen School District (NJ)
Middletown School District (NY)
Millburn School District (NJ)
Millville School District (NJ)
Monroe Township School District- Middlesex Co. (NJ)
Montgomery Township School District (NJ)
Montville Township Public Schools (NJ)
Moonachie School District (NJ)
Moorestown Township School District (NJ)
Morris Hills Regional School District (NJ)
Morris School District (NJ)
Mount Laurel Township Public Schools (NJ)
Mount Olive Township School District (NJ)
Neptune Township School District (NJ)
New Providence School District (NJ)
New York City Public Schools (NY)
Newton School District (MA)
North Caldwell Public Schools (NJ)
North Hanover Township School District (NJ)
North Warren Regional School District (NJ)
Northern Burlington County Regional School District (NJ)
Ocean Township School District- Monmouth Co. (NJ)
Oradell Public Schools (NJ)
Palmyra Public Schools (NJ)
Parsippany-Troy Hills Township Schools (NJ)
Pascack Valley Regional High School District (NJ)
Pemberton Township School District (NJ)
Penns Grove-Carneys Point Regional School District (NJ)
Pequannock Township School District (NJ)
Pitman Public Schools (NJ)

Pittsgrove Township School District (NJ)
Pleasantville School District (NJ)
Prince William County Public Schools (VA)
Princeton Regional Schools (NJ)
Putnam Valley Central School District (NY)
Red Bank Regional High School District (NJ)
River Edge School District (NJ)
River Dell Regional School District (NJ)
Robbinsville Public School District (NJ)
Rockaway Township School District (NJ)
Roosevelt School District (NJ)
Rutherford School District (NJ), for Lincoln Equities Group, LLC
Scarsdale Public Schools (NY)
School District of the Chathams (NJ)
Scotch Plains-Fanwood School District (NJ)
Secaucus Public School District (NJ)
Somers Central School District (NY)
Somerville Public Schools (NJ)
South Orange-Maplewood School District (NJ)
Southwest Vermont Supervisory Union (VT)
Spring Lake School District (NJ)
Stafford Township School District (NJ)
Swedesboro-Woolwich School District (NJ)
Tabernacle Township School District (NJ)
Tenafly Public Schools (NJ)
Union Beach School District (NJ)
Upper Freehold Regional School District (NJ)
Vernon Township School District (NJ)
Vineland School District (NJ)
Warren Township Schools (NJ)
Washington Township School District- Morris Co. (NJ)
West Essex Regional School District (NJ)
West Orange Public Schools (NJ)
West Windsor-Plainsboro Regional School District (NJ)
Westfield Public Schools (NJ)
Westwood Regional School District (NJ)
Wildwood School District (NJ)
Woodbridge Township School District (NJ)
Woodcliff Lake Public Schools (NJ)
Woodstown-Pilesgrove Regional School District (NJ)
Wyckoff School District (NJ)
Yonkers Public Schools (NY)

RICHARD S. GRIP, Ed.D.

Work Address:
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Academic and Professional Career History

Executive Director: Statistical Forecasting LLC, Dorset, Vermont, March 1998 – present.

- Performed demographic studies projecting enrollment using the Modified Regression Technique and Cohort Survival Ratio method for public school districts.
- Testified at a deposition and trial as an expert witness in school demography regarding the termination of the sending-receiving relationship of Newfield Borough with the Buena Regional School District.
- Testified at a trial as an expert witness in school demography regarding the termination of the sending-receiving relationship of the Merchantville School District with the Pennsauken Public Schools.
- Testified at a trial as an expert witness in school demography regarding a proposed change in the funding formula for River Dell Regional School District.
- Completed feasibility studies for school districts considering regionalization, de-regionalization, or alternative send-receive relationships. The studies look at demographic, educational, and financial implications of the new structure as compared to the status quo.
- Performed external evaluations of educational programs in both secondary and post-secondary settings using both qualitative and quantitative techniques. Constructed surveys and conducted interviews to measure program effects.

Representative Projects

New York City School Construction Authority - Demographic Study (2006-2020) – Performed enrollment projections for the New York City Public Schools as part of the Five-Year Capital Plan. Projections are being computed by the four major races for each of the 32 community school districts and aggregated by borough and citywide. Another analyses performed include projecting future birth counts by race, developing a special education model to project self-contained special education students, and studying the impact of immigration on enrollment. Finally, a comprehensive study of the impact of new housing development in New York City on enrollment at the community school district level was undertaken.

Arlington Public Schools (VA) – Demographic Consultant (2015-20) – Reviewed and evaluated the projection methodologies used by the Arlington Public Schools. Recommendations for improvements to the enrollment projection process were made. Student yields were computed both for 2010 and 2015 by housing type and affordability. A model was developed to project district-wide enrollments for the long-term, six to ten years into the future.

Clinton Township (NJ) – Expert Review (2019) – Reviewed a feasibility study prepared for the Lebanon Borough Board of Education, which considered the termination of an existing sending-receiving relationship with the Clinton Township School District and the creation of a new sending-receiving relationship with the Clinton-Glen Gardner School District. Reviewed the methodology used to compute the enrollment projections, as well as the data sources and the methodology used to determine the racial impact.

Loudoun County Public Schools (VA) – Demographic Consultant (2019) – Reviewed and evaluated the projection methodologies used by the Loudoun County Public Schools. Recommendations for improvements to the enrollment projection process were made.

Prince William County Public Schools (VA) – Demographic Consultant (2019) – Reviewed and evaluated the projection methodologies used by the Prince William County Public Schools. Recommendations for improvements to the enrollment projection process were made.

Montvale Borough (NJ) and Woodcliff Lake Borough (NJ) - Feasibility Study (2019) – Analyzed the demographic effects of the withdrawal of Montvale and Woodcliff Lake students for grades 9-12 from the Pascack Valley Regional School District, whereby Montvale would create a K-12 school district and Woodcliff Lake would send its students to Montvale for grades 9-12 on a sending-receiving basis.

Maywood (NJ) – Feasibility Study (2019) – Analyzed demographic and racial effects of the withdrawal of Maywood students for grades 9-12 from the Hackensack Public Schools upon termination of its existing sending-receiving relationship, as well as the demographic and racial effects upon the creation of a new sending-receiving relationship with the Carlstadt-East Rutherford Regional School District.

Montague (NJ) – Feasibility Study (2019) – Analyzed demographic and racial effects of the withdrawal of Montague students for grades 9-12 from the High Point Regional School District upon termination of its existing sending-receiving relationship, as well as the demographic and racial effects upon the creation of a new sending-receiving relationship with the Port Jervis School District (NY).

Waterford (NJ) – Feasibility Study (2019) – Analyzed demographic and racial effects of the withdrawal of Waterford students for grades 7-8 from the Hammonton Public Schools, whereby Waterford students would educate its own students. In addition, the demographic and racial effects of Chesilhurst removing its students in grades K-8 from Winslow Township were analyzed, as well as the demographic and racial effects upon Chesilhurst students attending the Waterford School District.

Sea Bright (NJ) Feasibility Study (2019) – Conducted a study analyzing the demographic and racial effects of the dissolution of the Henry Hudson Regional School District (grades 7-12) and forming a K-12 regional school district with Sea Bright, Highlands, and Atlantic Highlands as constituents.

Wenonah (NJ) – Feasibility Study (2018) – Analyzed demographic effects of the withdrawal of Wenonah students for grades 7-12 from the Gateway Regional School District.

Somers Point (NJ) – Feasibility Study (2017) – Analyzed demographic effects of the reconfiguration of the Somers Point School District.

Englewood Cliffs (NJ) – Feasibility Study (2017) – Analyzed demographic and racial effects of the withdrawal of Englewood Cliffs students for grades 9-12 from the Englewood Public School District upon termination of its existing sending-receiving relationship, as well as the demographic and racial effects upon the creation of a new sending-receiving relationship with either the Fort Lee, Leonia, or Northern Valley Regional Boards School Districts.

Bedford Central School District (NY) – Demographic Study (2016) – Performed ten-year enrollment projections at the individual school level. Student addresses were geocoded to show the five-year changes in the relative concentrations of where students live and the sections of each community that have the most children per housing unit. Computed student yields by development and housing type (coops, townhouse/condos, and apartments). Projected enrollments for three separate subgroups: English Language Learners, special education students, and economically disadvantaged students.

Matawan-Aberdeen Regional School District (NJ) – Demographic Study (2016) – Performed five-year enrollment projections at the individual school level. Births by census block group were used to project kindergarten students at the school level. Student yields were computed by housing type (single-family, townhouse, apartment) in each community and used to adjust baseline enrollment projections.

Edgewater Park (NJ) – Feasibility Study (2016) – Analyzed demographic effects of the withdrawal of Edgewater Park students for grades 9-12 from the Burlington City School District upon termination of its existing sending-receiving relationship, as well as the demographic effects upon the creation of a new sending-receiving relationship with the Delran Board of Education.

North Haledon (NJ) – Feasibility Study (2016) – Analyzed demographic effects of the withdrawal of North Haledon students from Manchester Regional School District where students would instead attend Manchester Regional School District through a sending-receiving relationship.

Oaklyn Public Schools – Feasibility Study (2016) – Analyzed demographic and racial effects of expanding the Oaklyn Public Schools' existing relationship with the Collingswood Public Schools from a grade 10-12 sending-receiving relationship to a grade 6-12 sending-receiving relationship.

Seaside Park (NJ) – Feasibility Study (2015) – Analyzed the demographic and racial effects of Seaside Park students upon creating a second sending-receiving relationship with the Lavallette School District in addition to its existing sending-receiving relationship with the Toms River Regional School District.

East Newark (NJ) – Feasibility Study (2014) – Analyzed demographic and racial effects of the withdrawal of East Newark students from the Harrison Public Schools upon termination of its existing sending-receiving relationship, as well as the demographic and racial effects upon the creation of a new sending-receiving relationship with the Kearny Board of Education.

Cape May (NJ) – Feasibility Study (2013) – Analyzed demographic and racial effects of the withdrawal of Cape May students from Lower Cape May Regional for grades 7-12 and the establishing of a sending-receiving relationship with either Lower Cape May Regional or Middle Township for grades 7-12.

West Windsor-Plainsboro Regional School District (NJ) - Demographic Study (2013, 2017) – Performed ten-year enrollment projections for large school district (9,800+ students) at the individual school level. Births by census tract and block group were used to project enrollment at the school level. Student addresses were geocoded to show the five-year changes in the relative concentrations of where students live and the sections of each township that have the most children per housing unit. Computed student yields by development and housing type (single-family, townhouse, apartment) in both communities. Analyzed change in racial and poverty distributions in the district and at school level over six historical years.

Merchantville Borough (NJ) - Feasibility Study (2012) – Conducted a study considering the demographic and racial effects of the withdrawal of Merchantville students from the Pennsauken Public Schools upon termination of the existing sending-receiving relationship, as well as the demographic and racial effects upon the creation of a new sending-receiving relationship with the Haddon Heights Board of Education.

Woodbridge School District (NJ) - Demographic Study (2012) – Performed five-year enrollment projections for large school district (13,000+ students) at the individual school level. Births by census tract and block group were used to project enrollment at the school level. Student addresses were geocoded to show the five-year changes in the relative concentrations of where students live and the sections of the township that have the most children per housing unit.

South Hunterdon Regional School District (NJ) Feasibility Study (2012) – Conducted a study considering the dissolution of the South Hunterdon Regional School District (grades 7-12) and analyzed six different scenarios for the education of students in Lambertville Borough, Stockton Borough, and West Amwell Township. Analyzed demographic and racial impacts in each of the scenarios.

Yonkers Public Schools (NY) - Demographic Study (2011, 2013, 2016) – Performed ten-year enrollment projections by the four major races in the school district. Other analyses performed include projecting future birth counts by race, studying the impact of immigration on enrollment, and the effects of charter, private, and parochial schools on enrollment. The impact of new housing developments on the school district was also considered.

Hackensack Public Schools (NJ) - Demographic Study (2010) – Conducted a study projecting enrollment five years into the future. Analyzed local population trends, demographic characteristics of the community using Census and ACS data, student mobility rates, and the impact of new housing starts on enrollment. Completed a capacity analysis of building capacities compared to projected enrollment. Performed a separate analysis of housing turnover in the community by using home sale data for the past 30 years to project the number of homes by length of ownership based on the current length of ownership and historical turnover rates. Using the student yields computed separately by length of ownership, the total number of students was projected five years into the future.

North Franklin Lakes Township School District (NJ) - Demographic Study (2010) – Conducted a study projecting enrollment five years into the future. Analyzed local population trends, demographic characteristics of the community using Census and ACS data, and student mobility rates. Completed a capacity analysis of building capacities compared to projected enrollment. Performed an in-depth analysis of the demolition and renovation of housing units at McGuire Air Force Base and its impact on enrollment.

Black Horse Pike Regional School District (NJ) Feasibility Study (2009) – Conducted a study considering the dissolution of the Black Horse Pike Regional School District (grades 9-12) whereby a full PK-12 regional district would be created between Bellmawr Borough, Gloucester Township, and Runnemede Borough. Analyzed demographic and racial impacts in each of the scenarios.

Robbinsville Township School District (NJ) - Demographic Study (2009, 2016) – Conducted a study projecting enrollment five years into the future. Analyzed local population trends, demographic characteristics of the community using Census and ACS data, student mobility rates, and the impact of new housing starts on enrollment. Completed a capacity analysis of building capacities compared to projected enrollment. Performed a separate analysis of housing turnover in the community by using home sale data for the past 30 years to project the number of homes by length of ownership based on the current length of ownership and historical turnover rates. Using the student yields computed separately by length of ownership, the total number of students was projected five years into the future.

Montvale Borough (NJ) and Woodcliff Lake Borough (NJ) - Feasibility Study (2008) – Conducted a study considering the dissolution of the Pascack Valley Regional High School District whereby a full K-12 regional district would be created between Montvale and Woodcliff Lake Boroughs.

Carlstadt Borough (NJ) - Feasibility Study (2008) – Conducted a study considering the dissolution of the Carlstadt-East Rutherford Regional High School District whereby a full K-12 regional district would be created between East Rutherford and Carlstadt Boroughs or whereby a K-12 district would be created in East Rutherford Borough and high school students from Carlstadt Borough would attend East Rutherford on a sending-receiving basis.

Watchung Borough (NJ) - Feasibility Study (2008) – Conducted a study considering the withdrawal of Watchung Borough from the Watchung Hills Regional High School District whereby Watchung would send its students to the existing regional district on a sending-receiving basis. The study also considered the dissolution of the Watchung Hills Regional High School District whereby a full K-12 regional district would be created or whereby a K-12 district would be created in Warren Township and high school students from Watchung Borough would attend Warren Township on a sending-receiving basis.

Park Ridge Borough (NJ) - Feasibility Study (2007) – Conducted a study considering many different organizational structures to the existing PK-12 school district including forming an all-purpose regional school district with adjoining communities and joining an existing limited-purpose regional high school district.

Merchantville Board of Education (NJ) – Racial Impact Study (2007) – Conducted a study to determine the racial impact of Merchantville terminating its sending-receiving relationship with Pennsauken Township.

Vineland Board of Education (NJ) - Demographic Study (2006, 2013) – The average student yield per home was computed by analyzing recent developments constructed in Vineland. This value was then used to project the number of children from comparable future developments. A representative sample of 26 new streets located in 15 different developments was analyzed. District transportation records were accessed from 2002-2006 to obtain the number of children per household on these streets and their grade levels for each of these years. The number of children per housing unit was computed and used to project the expected number of children from approximately 1,600 new single-family homes in Vineland. Baseline enrollment projections were then modified.

Oradell Borough (NJ) - Feasibility Study (2006) – Conducted a study of dissolving the River Dell Regional School District, a limited-purpose grade 7-12 regional district, with the resulting formation of two independent K-12 districts in Oradell Borough and River Edge Borough. The study explored having Oradell enter into a send-receive relationship with River Edge for its grade 7 and 8 students while River Edge enter into a send-receive relationship with Oradell for its grade 9-12 students.

Liberty Township (NJ) - Feasibility Study (2006, 2008) – Conducted two studies, one which would dissolve the Great Meadows Regional School District, a grade PK-8 regional district, and create two independent PK-8 districts in Liberty Township and Independence Township. The second study analyzed dissolving the Great Meadows Regional School District, creating a PK-8 district in Independence Township and a PK-5 district in Liberty Township where Liberty Township students in grades 6-8 would be sent to Independence Township on a sending-receiving basis.

Newfield Board of Education (NJ) - Feasibility Study (2006) – Conducted a study of terminating the existing send-receive relationship between the Newfield Board of Education and the Buena Regional School Board of Education and initiating a new sending-receiving relationship between the Newfield Board of Education and the Delsea Regional Board of Education and the Franklin Lakes Township Board of Education. Testified at a deposition and trial as an expert witness in school demography regarding the termination of the sending-receiving relationship of Newfield Borough with the Buena Regional School District.

Elmer Borough Board of Education (NJ) - Feasibility Study (2004) – Conducted a study of making the Elmer Borough School District a non-operating district by creating a new sending-receiving relationship between the Elmer Board of Education and the Pittsgrove Board of Education. Analyzed the demographic impacts on each school district for the proposed organizational change.

Elk Township, Franklin Lakes Township, and Delsea Regional High School District (NJ) – Feasibility Study (2003-2004) – Conducted a feasibility study exploring the expansion of the Delsea Regional High School District from a limited purpose (grades 7-12) regional concept to an all-purpose (grades PK-12) regional alignment. Other options explored were the dissolution of the Delsea Regional High School District and formation of two independent PK-12 school districts in Franklin Lakes Township and Elk Township.

The College of New Jersey - External Evaluator and Psychometrician (2003-2006) – Served as an external evaluator and psychometrician measuring the effects of the Teachers as Leaders and Learners program, which was designed to provide professional development opportunities, mentoring, and graduate coursework in mathematics and science for elementary and middle school teachers of an urban school district in New Jersey. Entry and exit surveys were constructed to measure changes in attitudes and beliefs of teachers after program participation. Terra Nova, NJASK4, and GEPA test score data of students whose teachers participated in the program were analyzed to measure gains. A summative year-end report, which consisted of survey and test score results, was written to demonstrate how the program's goals and objectives were being met.

New Jersey Department of Education - External Evaluator and Psychometrician (2003-2006) – Served as an external evaluator and psychometrician for the Alternate Route Strand of the Teacher Quality Enhancement Grant for the New Jersey Department of Education. Responsibilities included writing quarterly and year-end reports documenting completion of program initiatives by the New Jersey Department of Education Provisional Teacher Program (Alternate Route). Provisional teachers rated the program's formal instruction component through a written survey. Data collected was subsequently analyzed to aid the New Jersey Department of Education in understanding the strengths and weaknesses of the program.

Adjunct Professor: Marlboro College, Marlboro, Vermont, January 2006 - May 2006.

- Taught *Statistics*, an undergraduate-level course offered by the Department of Mathematics.

Adjunct Professor: Graduate School of Education, Rutgers University, New Brunswick, New Jersey, June 1999 – December 2000.

- Taught *Assessment and Measurement for Teachers*, a graduate-level course offered by the Department of Educational Psychology.

- Taught *Psychometric Theory I*, a graduate-level course offered by the Department of Educational Psychology.

Physics and Statistics Instructor (with tenure): Bridgewater-Raritan High School, Bridgewater, New Jersey, September 1993 – June 2001.

- Chair of Technology Committee for Middle States Evaluation – Directed faculty in the creation of a report on uses of technology in the school. Presented the summative report to the faculty and administration for final approval.

Adjunct Statistics Instructor: Raritan Valley Community College, Somerville, New Jersey, January 1996 - May 1999.

Physics Instructor (tenure-track): Montville High School, Montville, New Jersey, September 1992 - June 1993.

Adjunct Mathematics Instructor: County College of Morris, Randolph, New Jersey, June 1992 - December 1992.

Physics and Astronomy Instructor: Delbarton School, Morristown, New Jersey, January 1992 - June 1992.

Education

Rutgers University, New Brunswick, NJ
Doctor of Education in Educational Statistics and Measurement, May 1998
Dissertation: Prediction of Student Enrollments using the Modified Regression Technique
Doctoral Committee Chair: John W. Young

Rutgers University, New Brunswick, NJ
Master of Education in Science Education, January 1992

Rutgers University, New Brunswick, NJ
Bachelor of Science in Civil Engineering, May 1989

Presentations

Lead Presenter. Association of American Geographers, Chicago, IL, April 2015: Computing Student Yields: A Case Study in Comparing Methodology.

Panel Presenter. New Jersey Association of School Administrators, Branchburg NJ, June 2009: Forum on New Jersey School District Consolidation.

Lead Presenter. Population Association of America, New Orleans, LA, April 2008: Does Projecting School District Enrollments by Race Produce More Accurate Results?

Lead Presenter. Population Association of America, New York City, NY, March 2007: Highlights of a Demographic Study Prepared for an Abbott District.

Lead Presenter. American Association of School Administrators Rural and Small School Leaders, Baltimore, MD, July 2002: Performing Enrollment Projections in Vermont: A Case Study.

Lead Presenter. New Jersey Association of School Administrators, Morris, NJ, May 2002: The Demographic Study: One size does not fit all.

Lead Presenter. New Jersey Association of School Administrators, Morris, NJ, May 2001: Projecting Enrollments in Rapidly Growing School Districts.

Lead Presenter. New Jersey School Boards Convention, Morris, NJ, October 2000: Enrollment projections: Making them accurate

Lead Presenter. New Jersey Association of School Administrators, Morris, NJ, May 2000: Enrollment projections: A new direction.

Lead Presenter. New Jersey Association of School Administrators, Morris, NJ, May 1999: Enrollment projections: A solution for high growth and low growth school districts.

Lead Presenter. American Educational Research Association, Montreal, Canada, April 1999: Predicting public school enrollments using the Modified Regression Technique.

Co-Presenter. Research Corporation Conference, Tucson, Arizona, January, 1996: Presented the experimental results of ^{152}Gd g-factors at the 2^+ and 4^+ states using a particle accelerator at Yale University.

Papers

Grip, R.S. & Grip M.L. (2019). Using Multiple Methods to Provide Prediction Bands of K-12 Enrollment Projections. Population Research and Policy Review, 39(1) 1-22.

Grip, R. S. (2010). Reading trends, not tea leaves. School Leader, 40(4), 32-38.

Grip, R.S. (2009). Does projecting enrollments by race produce more accurate results in New Jersey school districts? Population Research and Policy Review, 28(6), 747-771.

Grip, R. S. (2005). Enrollment trends in New Jersey. School Leader, 34(5), 20-27.

Grip, R. S. (2004). Projecting enrollment in rural schools: A study of three Vermont school districts. Journal of Research in Rural Education [On-line] 19(3). Available: http://www.umaine.edu/jrre/19-3.htm

Grip, R. S. (2002). Using demographic studies to project school enrollments. School Business Affairs, 68(7), 15-17.

Grip, R. S. & Young, J.W. (1999). The modified regression technique: A new method for public school enrollment projections. Planning and Changing, 30(3 & 4), 232-248.

Awards

Outstanding Dissertation Award (1999): Presented by the Rutgers University Alumni Association to the best dissertation from the Graduate School of Education

Professional Affiliations

American Educational Research Association
Population Association of America