



Interim Report to the Education Funding Task Force K-12 Public School Staff Compensation Analysis

Submitted: September 1, 2016

Presented: September 6, 2016

Outline


- Introduction and Project Status
- Review Data Collection Process
- Summary of Data Collection Effort to Date
- Supplemental Pay Analysis Plan
- Comparable Market Rate Salary Analysis Plan
- Local Labor Market Adjustment Analysis Plan
- Staff Salary Cost Model Architecture
- Next Steps

Interim Report Goal

Update the Education Funding Task Force on progress made to date and plans for further analysis

Project Requirements from E2SSB 6195

- (a) Collect K-12 public school staff total compensation data, and within that data, provide an analysis of compensation paid in addition to basic education salary allocations under the statutory prototypical school model, source of funding, and the duties, uses, or categories for which that compensation is paid;
- (b) Identify market rate salaries that are comparable to each of the staff types in the prototypical school funding model; and
- (c) Provide analysis regarding whether a local labor market adjustment formula should be implemented and if so which market adjustment factors and methods should be used.



Results will inform a model that will allow the Education Funding Task Force to evaluate salary cost scenarios


Project Context

Over 100,000 staff support over 1 million students in the state

Statewide over 100,000 staff are hired

	State Allocated*	School District Actual
Certificated Instructional Staff (CIS)	55,543	66,427
Certificated Administrative Staff (CAS)	4,119	4,513
Classified Staff (CLS)	17,682	39,874

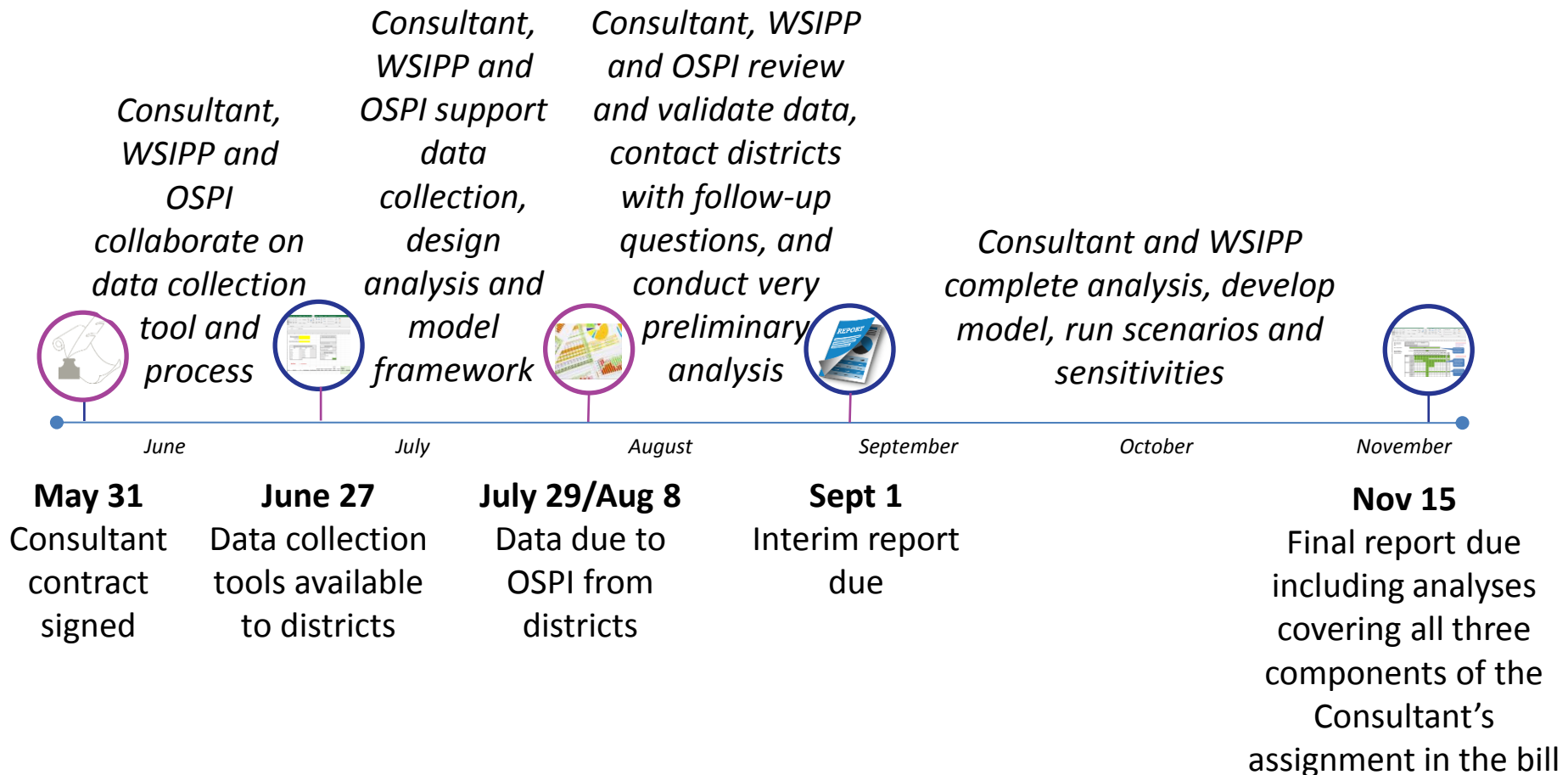
- State funding for basic education is distributed to districts “for allocation purposes only”
- “The use of prototypical schools for the distribution formula does not constitute legislative intent that schools should be operated or structured in a similar fashion as the prototypes”

- 
- Districts may hire more staff and pay additional salary
 - Current accounting and data does not provide the necessary detail on salaries, therefore this project includes data collection to understand additional salary

*State allocated staff does not include staff that are funded through state allocations for Special Education, Pupil Transportation, and Local Effort Assistance
Source: Overview of K-12 Public School Staff and Basic Education presented to the Education Funding Task Force on June 8, 2016

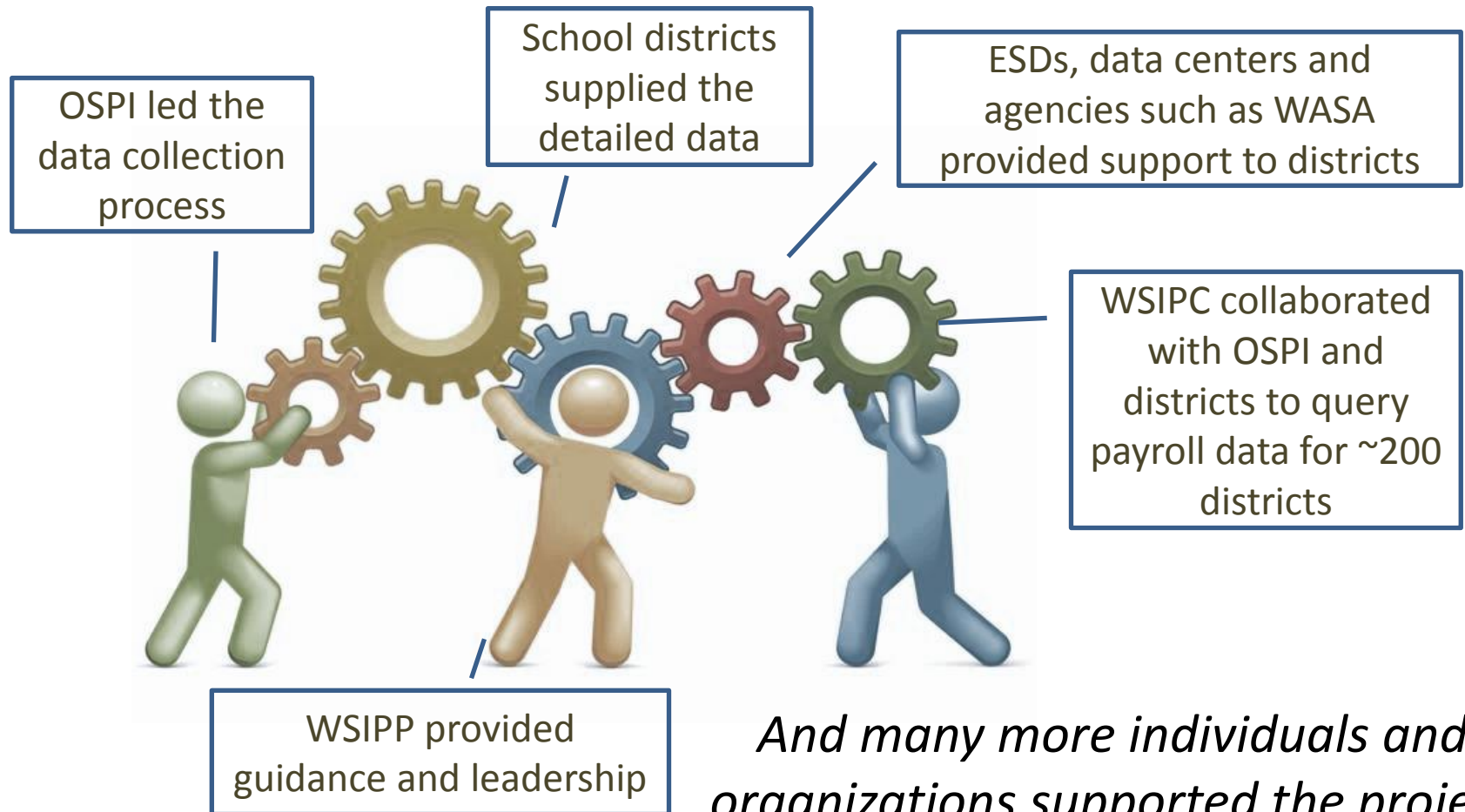
Project Timeline

The first half of the project has been focused on data collection while the second half will focus on analysis



Project Contributors

The progress described in this interim report was achieved through the significant contributions of others



Data Collection Current Status

Data collection had a high response rate; file review and district follow up is almost complete

- The data collection process, led by OSPI, provided detailed data on supplemental pay categories (SPCs) by staff type – Certificated Instructional Staff (CIS), Certificated Administrative Staff (CAS) and Classified Staff (CLS) – and by staff position (duty root*)
- File review, led by Consultant, is conducted for completeness and level of detail; high-level aggregate analysis is performed as part of the review process
- District submissions require cleaning and standardization prior to analysis

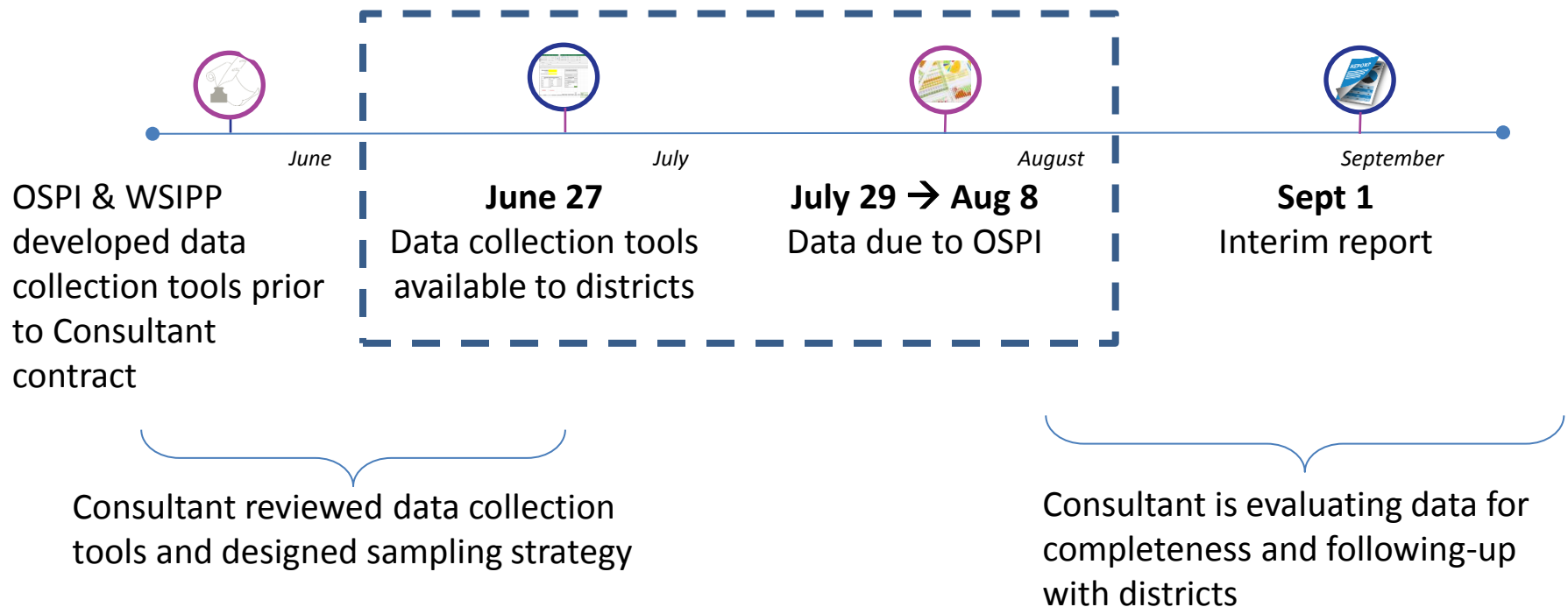
*Duty root describes a staff person's assignment (e.g., Superintendent, Teacher, Psychologist), CIS = Certificated Instructional Staff, CLS = Classified Staff, and CAS = Certificated Administrative Staff

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Data Collection Process

Districts' data provides a current and consistent data set for analysis of actual salaries relative to basic education salary allocations



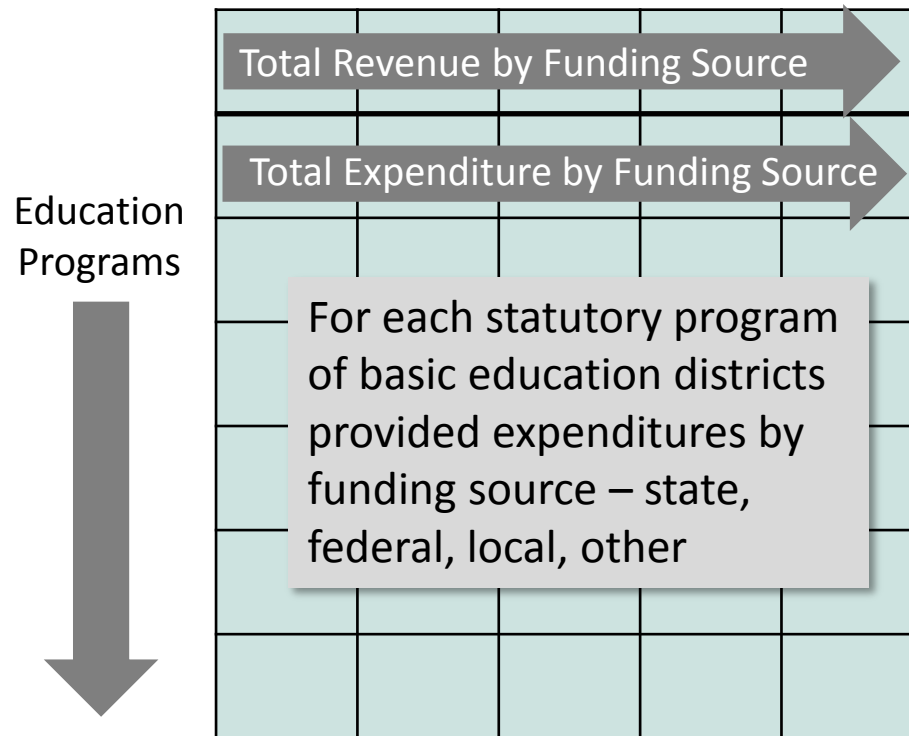
Data Collection: Salaries

Salary data collection tools captured the duties, uses or categories for which actual compensation is paid

Pay Type	Reason Categories	Reason Sub-Categories
<ul style="list-style-type: none">• Additional hourly• Supplemental contract• Stipend	<ul style="list-style-type: none">• Deemed done• Time outside of 180-day school year, not PD• Time outside of regular school day but during the 180-day school year, not PD• Professional development• Additional responsibilities/duties• Other	<ul style="list-style-type: none">• 41 sub-categories for certificated instructional staff• 20 sub-categories for classified staff• 12 sub-categories for certificated administrative staff
<ul style="list-style-type: none">• For each staff person districts provided three levels of detail per supplemental pay item in the compensation files• Where the pay item did not match the standard categories districts provided a detailed description		

Data Collection: Resource to Program Expenditure

Source of funds collected maps state, federal and local funds to the statutory programs of basic education

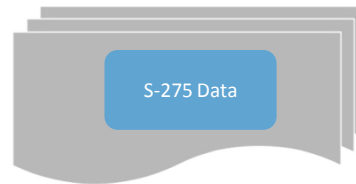
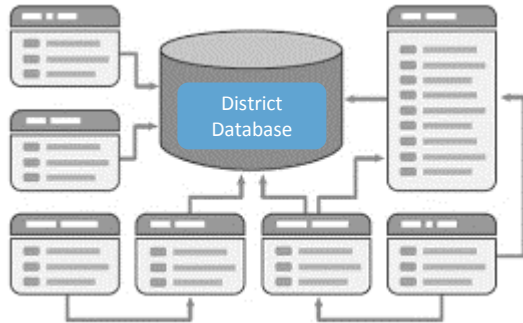


- Districts were provided with a pre-populated spreadsheet showing their total revenue and expenditure by funding source
- Funding sources could not be broken out for salaries, MSOC* and other costs because the state does not have a revenue to expenditures accounting system

*MSOC = Materials, Supplies, and Operating Costs

District Context and Data Collection

Districts pulled their data from a complex and diverse set of systems and departments including payroll and HR



- Human Resources, Payroll, Finance, and Personnel Management collaborated to complete detailed data requests
- Different payroll systems are used across the state's districts
 - The state's largest districts have custom built databases
 - ~20 districts use Business Plus
 - ~200 districts use the Washington School Information Processing Cooperative (WSIPC) (Payroll codes differ among WSIPC districts)

Cross-walking payroll data (unique to each district) to uniform categories in the data collection tool leaves room for interpretation by each district

Limitations of Data Collection

Data limitations have been mitigated where possible and the large volume of data provides multiple analytic options

Data Collection Challenges

- There are inconsistencies in how districts map payroll and HR data to the supplemental pay categories defined in the data collection tool
- Districts may not have the data necessary to explain all additional pay
- Given the level of detail required all district personnel records could not be reviewed and mapped to supplemental pay categories
- Manual error in transcribing data

Mitigations

- Data cleaning addresses errors and inconsistencies prior to analysis
- Depending on the level of detail provided by districts data can be included in analysis at supplemental pay category level rather than at sub-categories to aggregate inconsistent data
- Sampling within districts was required to produce data within the project's timeline

Sampling Goals

The goal of sampling was to reduce the data collection burden on districts while collecting detailed salary data for analysis

- Use district time efficiently
 - Increase likelihood of districts submitting data
 - Improve completeness of information submitted
- Collect detailed data on supplemental pay
 - Give districts more than a month to map payroll and HR data into detailed supplemental pay categories
- Ensure analysis will have data with the highest possible accuracy
 - Sample size supports analysis goals including rigorous supplemental pay analysis for each staff position type (i.e., supplemental pay will be analyzed separately for secondary teachers vs. elementary teachers vs. nurses)

Implementation of Sampling

Sampling was done at the position (duty root) level to ensure enough data is collected to support the intent of the analysis

All District Staff

- Total certificated instructional, administrative and classified staff

Statutory Programs of Basic Education

- Limited data collection to program account codes 01, 02, 03, 21, 22, 26, 31, 45, 55, 56, 59, 65, 74, 97, and 99

Statistical Sample

- Staff position specific sample to support analysis for each position (duty root)

Tier 1: Instructional Positions
(Elementary Teachers, Secondary Teachers, Other Teachers, Aides)

- Confidence interval of 80%
- Margin of error of 5%



Sample of 125 staff if district population is greater than 125

Tier 2: Other Staff Positions
(e.g., Psychologist, Principal, Office/Clerical, Superintendents, etc.)

- Confidence interval of 80%,
- Margin of error of 10%

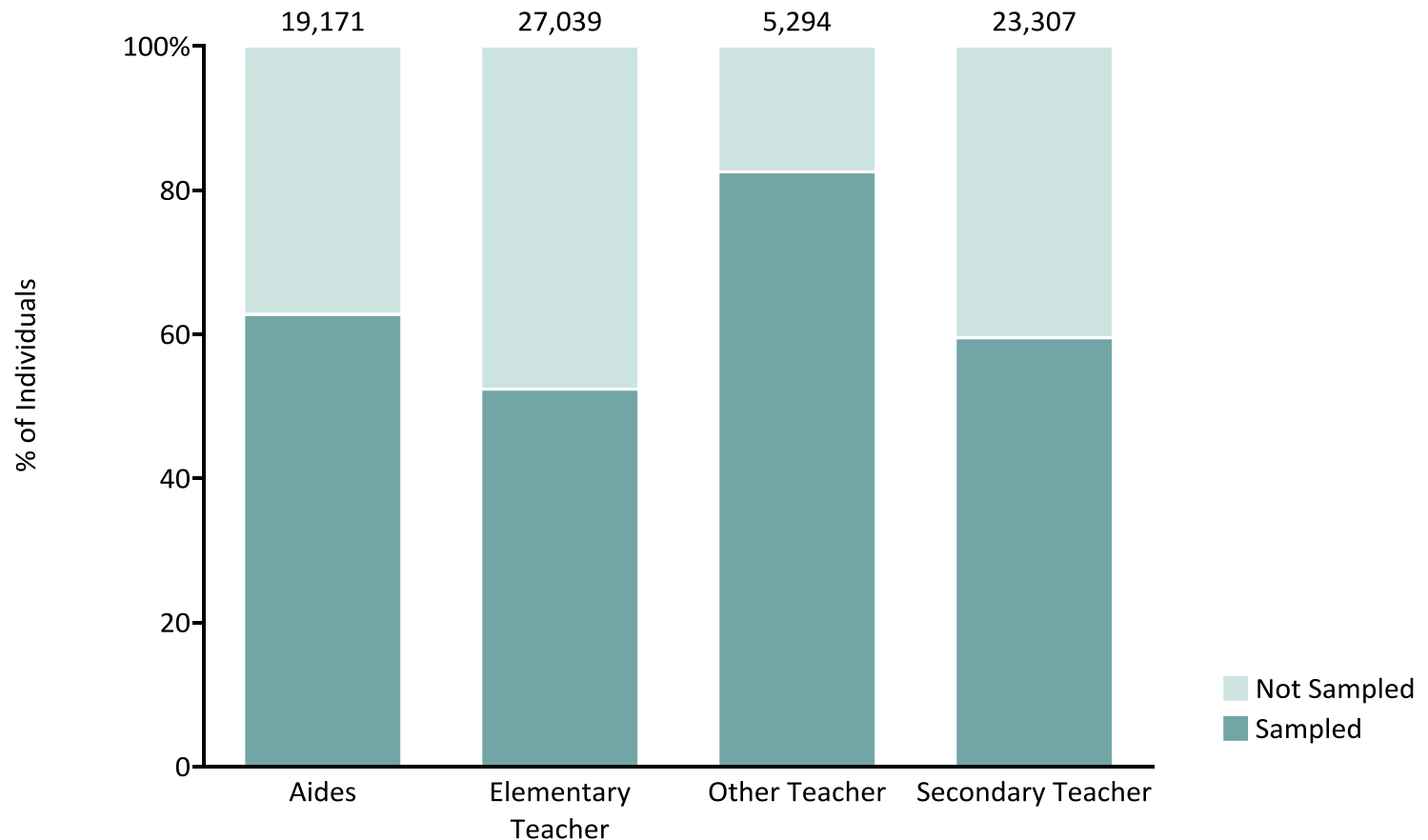


Sample of 35 staff if district population is greater than 35

- Split into tiers for sampling based on:
 - Number of supplemental pay sub-categories and anticipated variance
 - Level of specificity needed for analysis

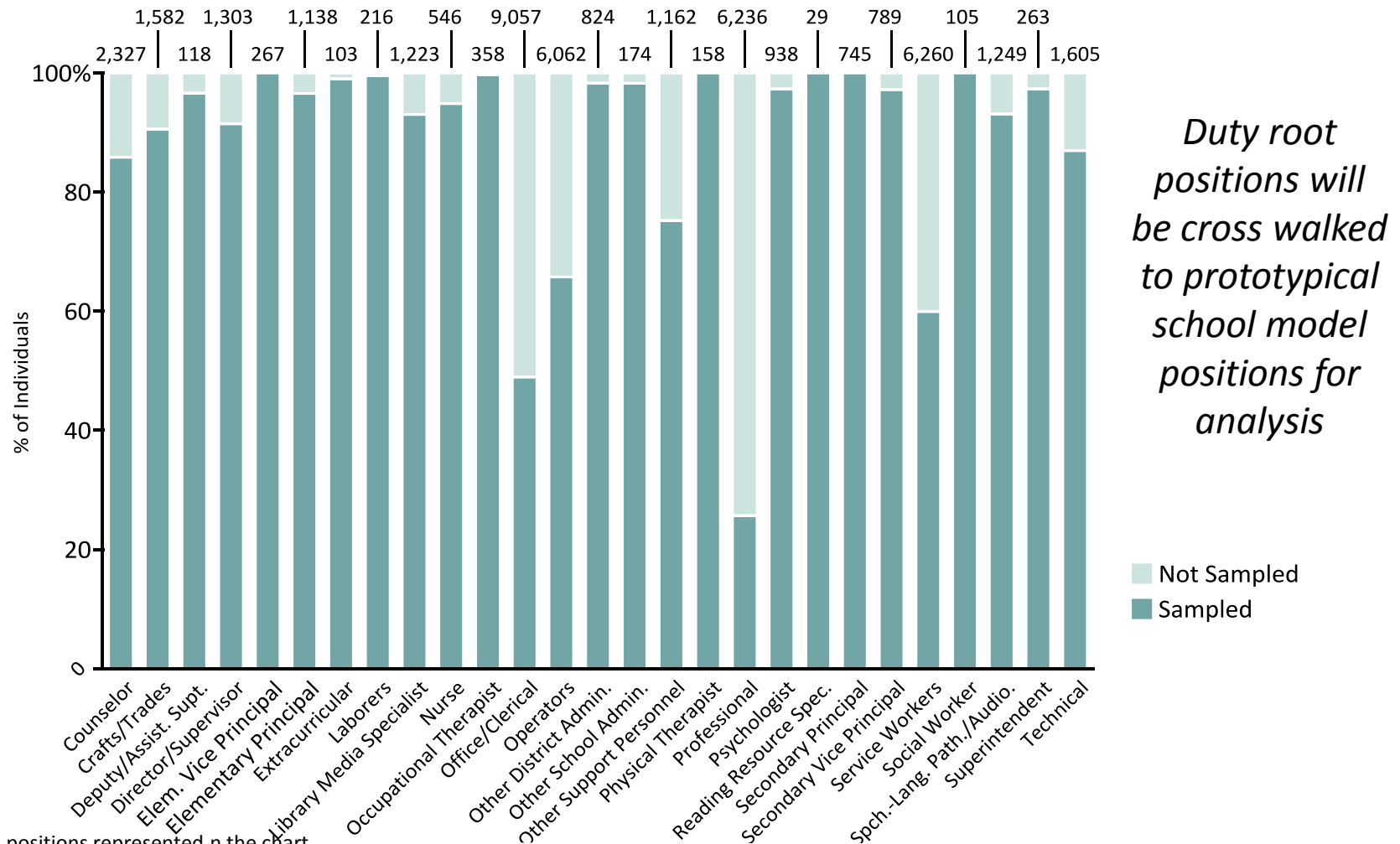
Tier 1 Sampling Implementation

~60% of individuals in Tier 1 positions are captured in the data collection sample



Tier 2 Sampling Implementation

~66% of individuals in Tier 2 positions* are captured in the data collection sample



*Not all positions represented in the chart

Source: S275 and data collection sample for E2SSB 6195

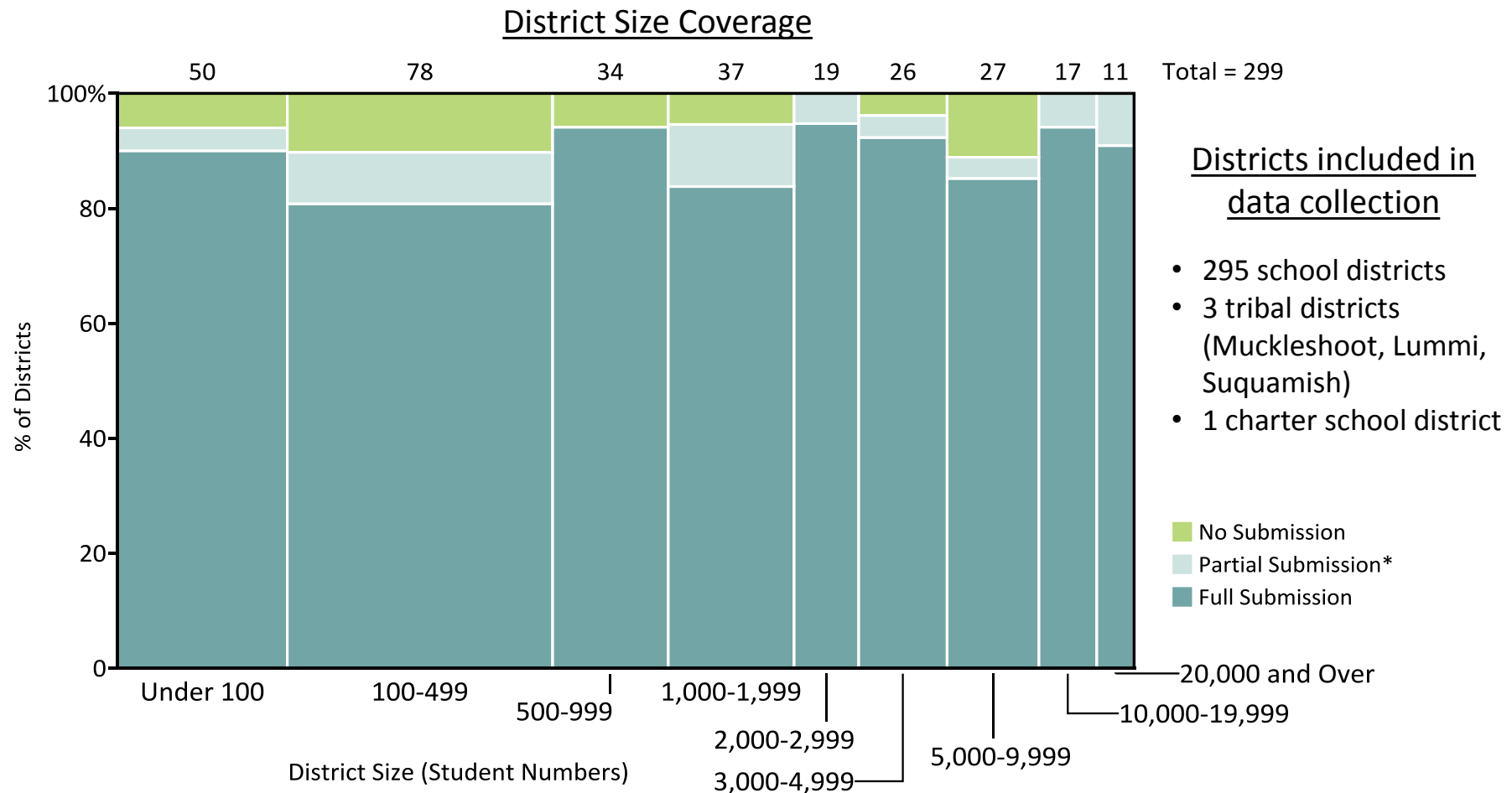
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Data Received Represents Districts

87% of districts submitted data ensuring representation of district sizes across the state



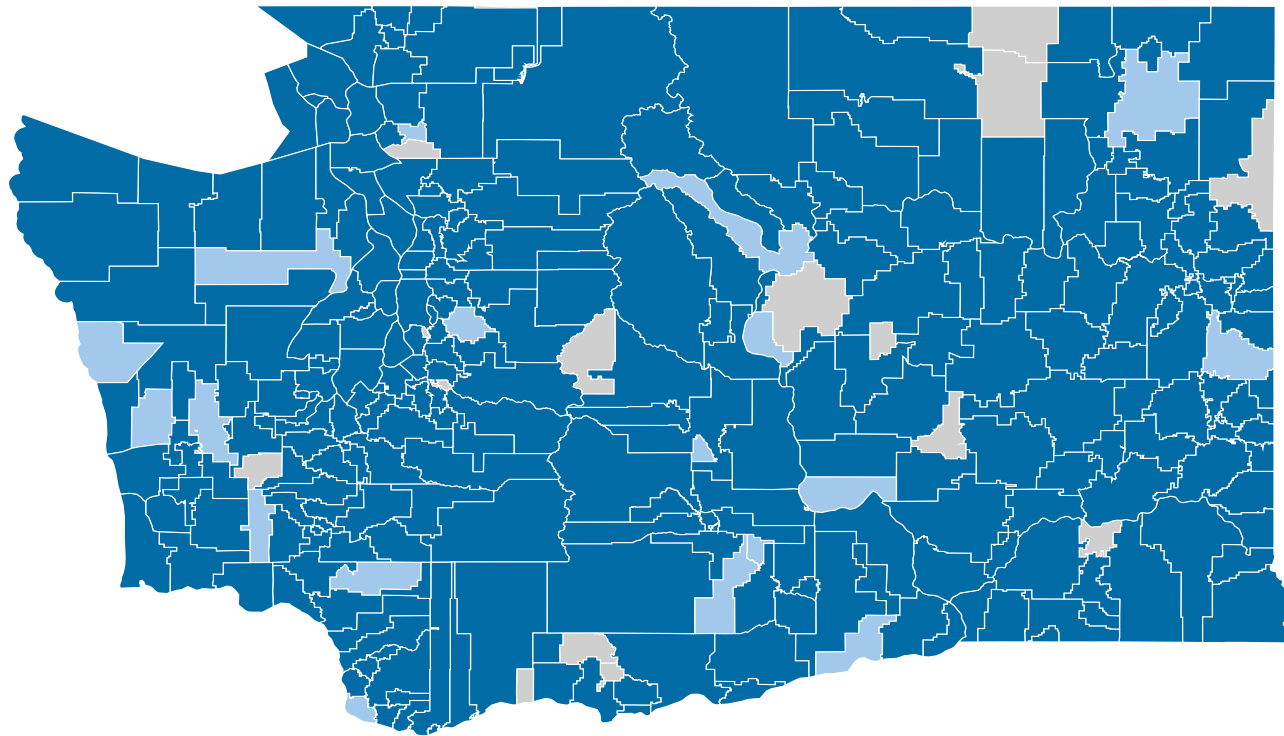
*Partial Submission = district submitted some but not all of the 4 requested data files to OSPI

Source: Data collected for E2SSB 6195 as of 9/1/2016

9/1/2016

Representation Across the State

Data was received from rural, suburban and urban districts in all regions of the state



Submission Status

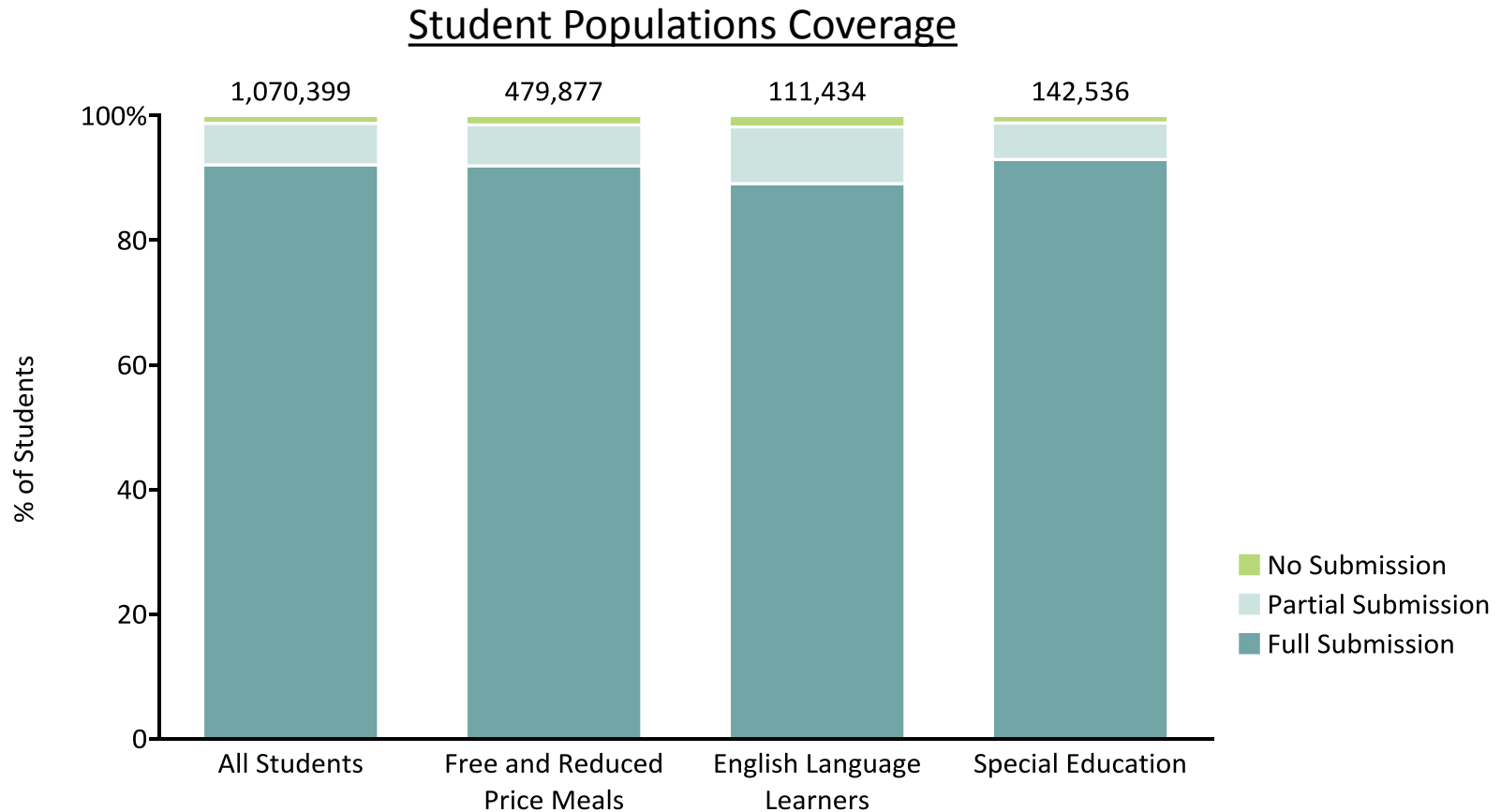
- Full Submission
- Partial Submission
- No Submission

Source: Data collected for E2SSB 6195 as of 9/1/2016, Note Tableau data only supports 293 districts in the map and shows 15 of the 19 districts with no submission, 260 of the 262 districts with full submissions and all partial submissions (18) are displayed

9/1/2016

Data Received Reflects Students

Data represents 92% of students ensuring representation of different student populations across the state



Note: categories are not mutually exclusive

Source: Data collected for E2SSB 6195 as of 9/1/2016; <http://reportcard.ospi.k12.wa.us/DataDownload.aspx>

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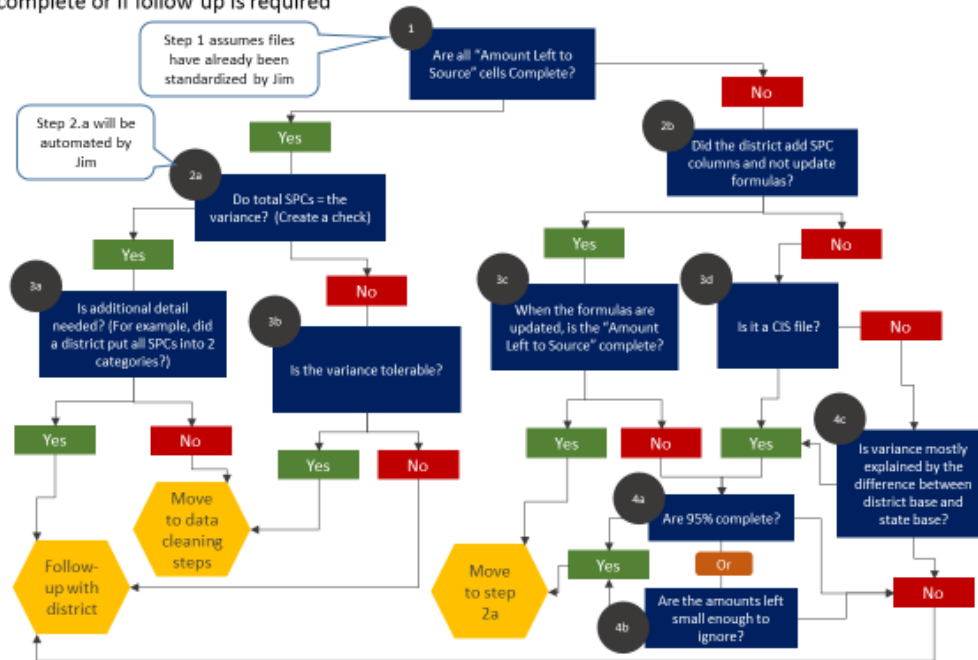
Data Review Process

All submissions are reviewed for completeness and detail

File Review Process

E2SSB 6195: Data Collection Files Review Process

The following decision tree can be followed for determining whether a CIS, CAS, and CLS file is complete or if follow up is required



- File review follows a consistent decision tree logic to determine the status of a district's submission
 - Complete
 - Lacks sufficient detail or needs other district follow-up
 - Requires data cleaning and standardization
- The Consultant has contacted districts to follow-up on issues that can be addressed
- Once review is final, files will be uploaded to a consolidated database for analysis

Examples of Findings in File Review

Data files must be cleaned and standardized prior to analysis

- District submissions contained various iterations of the standard supplemental pay categories

Example District Submitted Data

Hourly-Addition, Hourly Additional,
ADDITIONAL, HOURLY

Market salary, Base pay,
Negotiated pay

Extracurricular Activities,
EXTRACURRICULAR, Extra curricular



Cleaned and Standardized Data

Additional Hourly

Additional salary above state
allocation considered district base pay

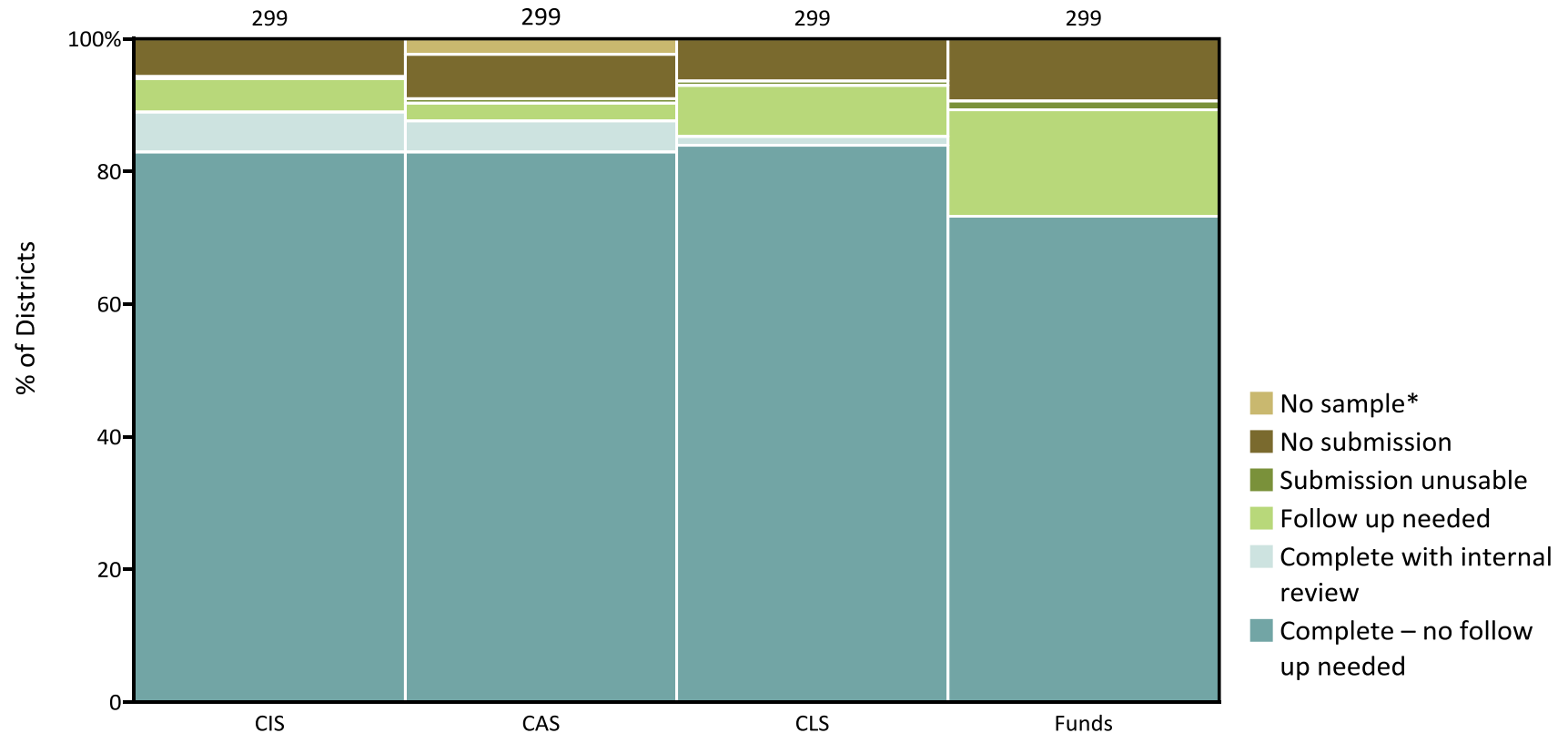
Extracurricular

- The S275 does not always capture staff transitions throughout the year or contract changes
For example: A teacher transitioned to principal in June of the 2014-15 school year and showed up in a district's CAS sample. All of the teacher's pay, however, was as a certificated instructional staff for the 2014-15 school year.

Cleaning and standardizing the data is still in process

Data Review Status

A relatively small number of district submissions require follow-up



*Some very small districts did not have a CAS sample because another position or the ESD may support CAS duties

Source: Data processing and follow up status as of 8/29/2016

Outline

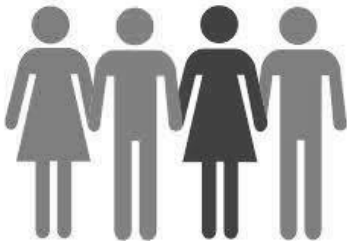
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Analysis Context

On average, districts hire additional staff and pay staff a higher salary than the state salary allocation

State Allocations

1. Number of staff (FTEs) through the prototypical school model ratios
2. Minimum salary allocation by staff type through the salary allocation model
 - Certificated Instructional Staff (CIS): \$34,155 per FTE
 - Classified Staff (CLS): \$32,334 per FTE
 - Certificated Administrative Staff (CAS): \$59,953 per FTE

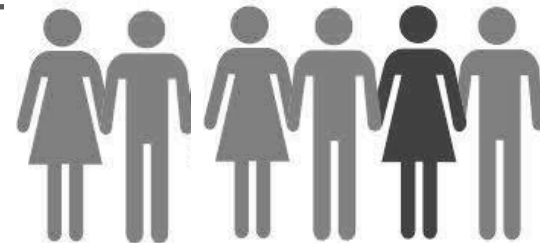


District Hiring

Additional or fewer staff and increased salary levels above the state allocations

Factors could include:

- Attracting and retaining staff
- Local priorities/need
- Student needs
- District initiatives (e.g., smaller class sizes)
- Availability of funds
- Negotiation



Supplemental Pay Analysis Goals

Provide an analysis of compensation paid in addition to basic education salary allocations

- Understand the amount and frequency of supplemental pay
- Analyze duties, uses and categories for which salaries are paid
- Review source(s) of funding for supplemental pay

Supplemental Pay Analysis Plan

Collected data will be used to analyze the duties, uses or categories and source of funding for actual compensation

Analysis Questions

Detailed Analysis Plan

Supplemental Pay Frequency

What supplemental pay categories apply to each staff type or position?

- Types of supplemental pay for each staff type (duty root code) and compare across districts
- Patterns in supplemental pay for each staff position and across staff positions

Supplemental Pay Magnitude

How much supplemental pay is contracted for staff positions?

- Size of supplemental pay for each staff type including aggregate levels for CIS, CLS, CAS and at the detailed position level
- Analysis of the variance in supplemental pay between staff positions and between districts

Relationships Between Pay and District Factors

How are districts similar and different in how they pay staff?

- Patterns between supplemental pay and district size, location (urban/rural), levy dollars, wealth/poverty in an area (levy valuation, FRPL, and ELL)

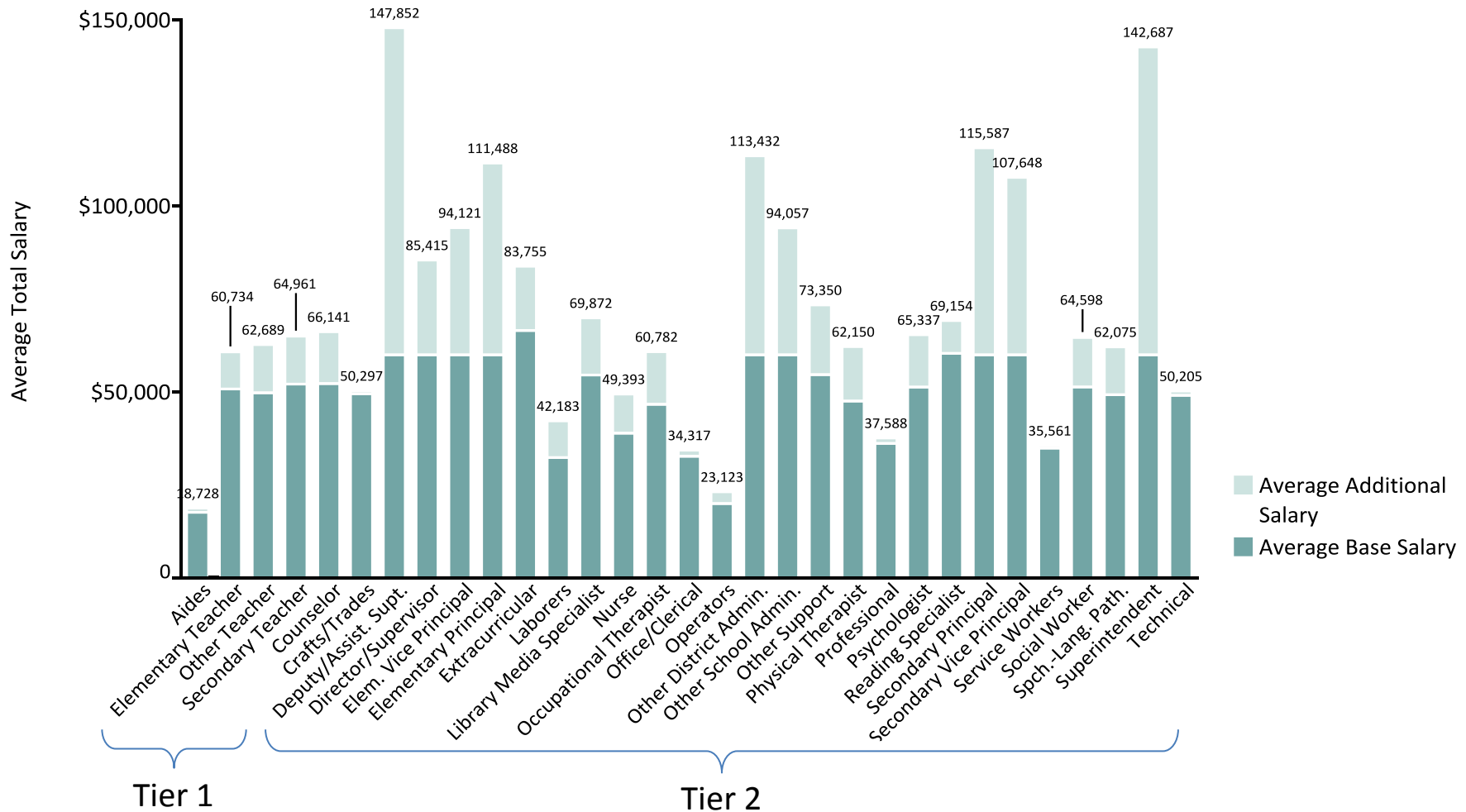
Sources and Uses of Funds

What sources of funds do districts use for statutory basic education?

- Link source of funds to the statutory basic education
- Inference on how levy dollars are used by districts and conclusions that can be drawn around funding for supplemental pay

Average Additional Salary by Duty Root

Data from the S275 shows the average additional salary above base pay by duty root



Source: 2014-15 school year S275 data, individuals are pulled by their primary assigned duty root for the statutory programs of basic education

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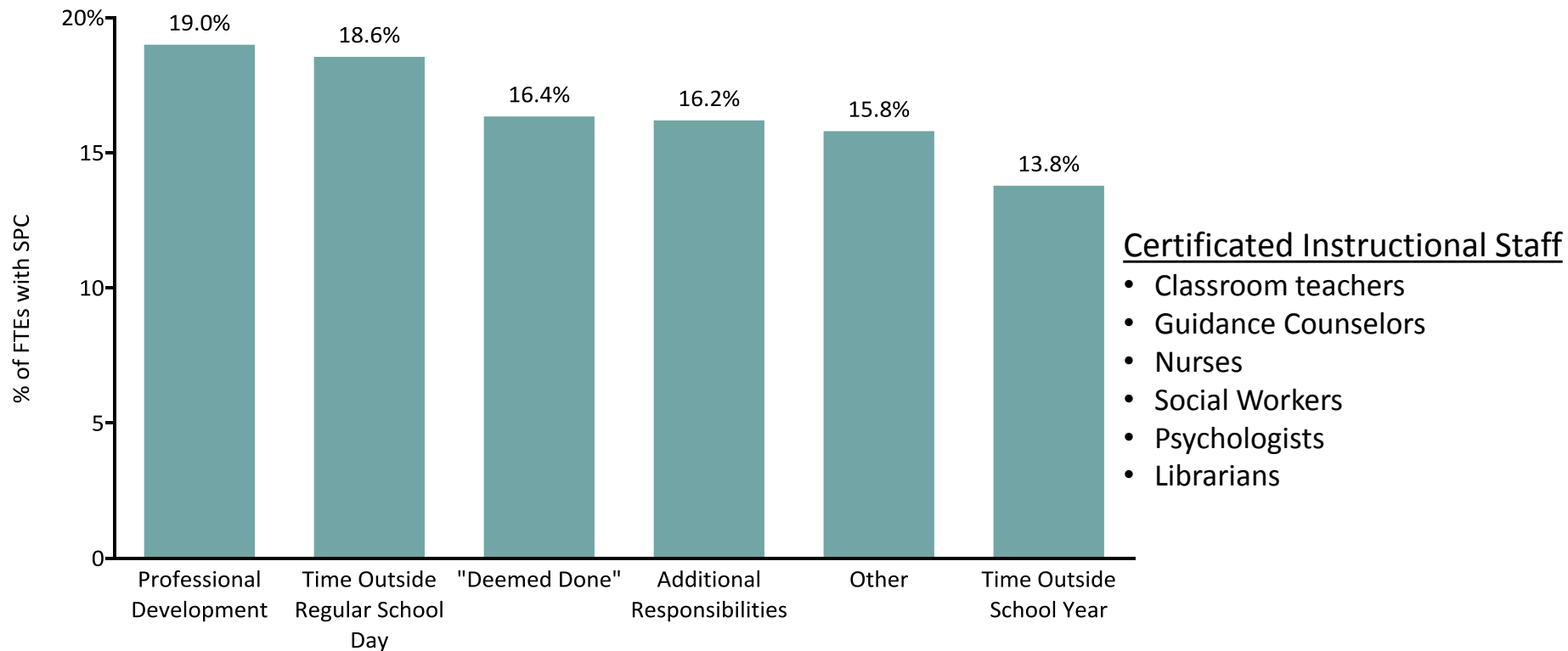
PRELIMINARY DATA

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Certificated Instructional Staff

All categories of supplemental pay are represented in district responses with Professional Development occurring most frequently

Frequency of Supplemental Pay Categories



Source: Data collected for E2SSB 6195 as of 9/1/2016

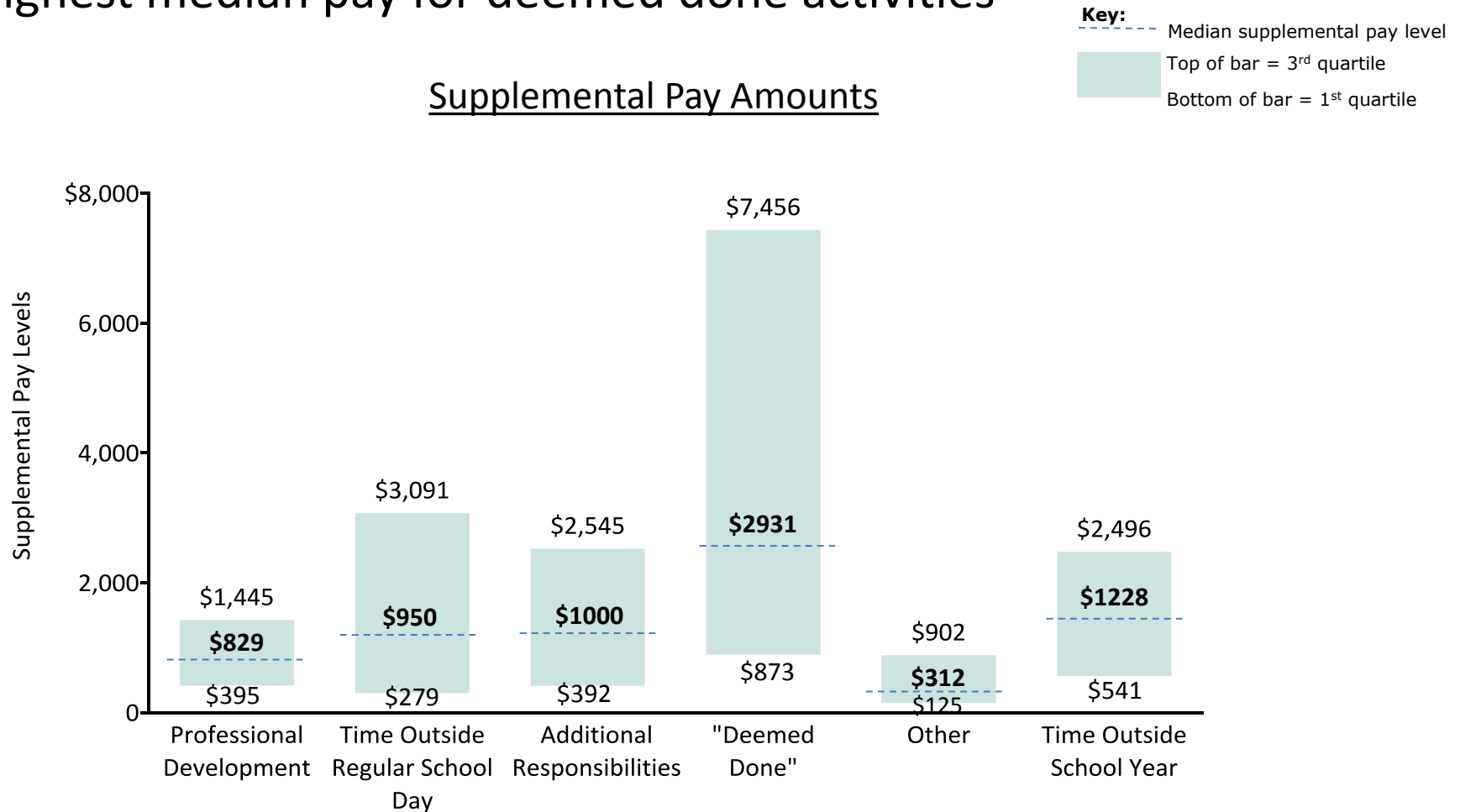
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PRELIMINARY DATA

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Certificated Instructional Staff

There is wide variation in supplemental pay levels with the highest median pay for deemed done activities



Source: Data collected for E2SSB 6195 as of 9/1/2016

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PRELIMINARY DATA

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Comparable Positions Salary Analysis Plan

Analyze and compare salaries for school districts with comparable professions outside education

Relationships
between Salaries of
Comparable
Professionals and
Education Staff

Analysis Questions

How are districts' salaries related to comparable salaries for other professions?

Detailed Analysis Plan

- Comparisons to BLS and ACS-CWI data on similar employment
- Salary ranges for education staff positions and how comparable salaries relate to ranges

Regional District
Salary Analysis

Can comparable salaries be compared to regional wages?
How much does district salary vary by region?

- Analysis of salary variance by region and other district characteristics
- Comparisons with regional purchasing power (cost of living) and other market factors

Adjustments to
Comparable Salaries
to Draw Conclusions

What adjustments are necessary to compare salaries between education and other professions?

- Index and review comparable salaries for 12 months vs. 10 month positions
- Normalize district salaries for different levels of tenure and experience

Note: Bureau of Labor Statistics (BLS); American Community Survey Comparable Wage Index (ACS-CWI)

Preliminary Comparable Positions

Analysis will focus on salaries for positions with similar education, training and job duties

Staff Category	Staff Positions (Duty Root)	Potential Comparable Professions*
Classroom Teachers	<ul style="list-style-type: none"> Elementary teachers Secondary teachers Other teachers 	<ul style="list-style-type: none"> Registered nurses Accountants and auditors Architects, except landscape and naval
Certificated Supervisory	<ul style="list-style-type: none"> Principals, assistant principals Other certificated building-level administrators 	<ul style="list-style-type: none"> Management occupations
Librarians	<ul style="list-style-type: none"> Teacher librarians 	<ul style="list-style-type: none"> Librarians
Health & Social Sciences	<ul style="list-style-type: none"> School nurses School social workers School psychologists Speech language/ pathologists 	<ul style="list-style-type: none"> Registered nurses Child, family, and school social workers Medical, white collar, professional and related occupations Clinical, counseling, and school psychologists
Guidance Counselors	<ul style="list-style-type: none"> Educational, guidance, school, and vocational counselors 	<ul style="list-style-type: none"> Mental health counselors Lawyers
Teaching Assistants	<ul style="list-style-type: none"> Aides 	<ul style="list-style-type: none"> Office and administrative support occupations Dental assistant
Office Support	<ul style="list-style-type: none"> Office and admin support 	<ul style="list-style-type: none"> Secretaries and administrative assistants
Custodians	<ul style="list-style-type: none"> Custodians 	<ul style="list-style-type: none"> Janitors and building cleaners Stock clerks and order fillers
Student and Staff Safety	<ul style="list-style-type: none"> Office clerical Service workers 	<ul style="list-style-type: none"> Police and sheriff's patrol officers Postal service mail carrier

Attracting and retaining staff is more complex than just salaries, however, this analysis is focused on observations around salary compensation only

*This is a preliminary list, it is not final nor is it intended to be comprehensive

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Local Labor Market Adjusters Analysis Plan

Better understand local labor market dynamics by analyzing the relationships between district salary levels and local market factors

Analysis Questions

Detailed Analysis Plan

Relationships of
Local Labor Market
Factors with Current
Salaries


Is there a correlation between local labor market factors or local market characteristics and observed salaries?

- Comparisons and correlations between salary and a range of local labor market factors
- Patterns and relationships between salary and local labor market adjusters based on district descriptive characteristics

Other Indicators of
Local Labor Market
Conditions

Are recruitment and retention indicators resulting in variation in district salaries?

- Analysis of turn-over rates, average age of staff and average experience levels in districts for key staff positions and correlation with local labor market factors



Relationships between local labor market adjusters and salary may be weak in part because collective bargaining can include a variety of factors

Local Labor Market Adjusters Analysis

Analysis will include correlations with salary levels and will be used in the model as inputs

Categories	Possible Local Labor Market Adjusters/Factors
Characteristics (Demographic)	<ul style="list-style-type: none">• % Free and Reduced Priced Meals• % English language• % Special education
Characteristics (Geographic)	<ul style="list-style-type: none">• District size (number of students)• Property value• Levy valuation• Levy passage amount• Urbanicity
Characteristics (Economic)	<ul style="list-style-type: none">• Turnover• Regional price parity• Location quotient• Average age of staff• Average experience levels for CIS staff

How Data will be Used

- Data transformations may be required to create an indexed factor
- Some variables should be normalized for experience levels, including staff salary
- Correlation and regression may be used to analyze relationships

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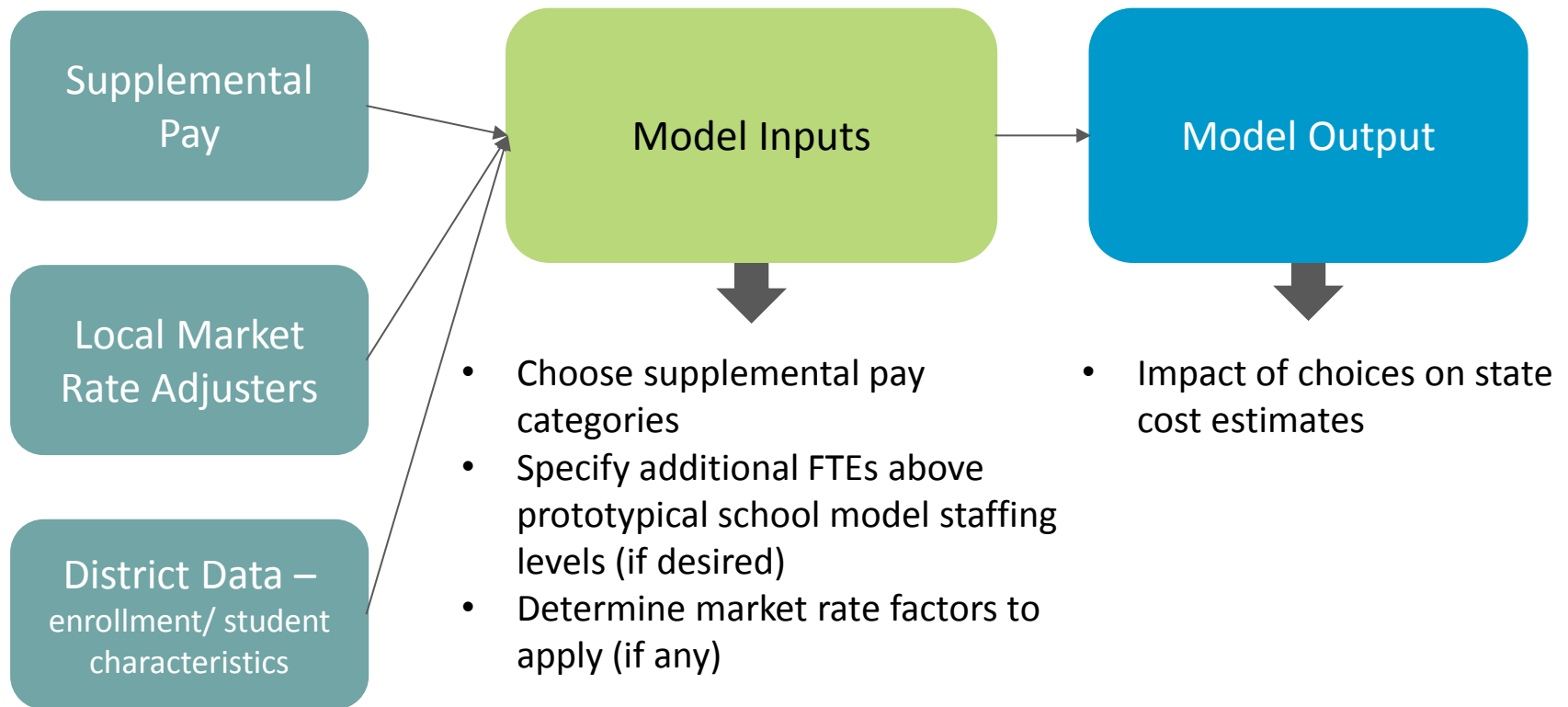
Staff Salary Cost Model Goals

The cost model will explore how different inputs from the supplemental pay and market factors analyses impact total cost

- Allow the user to toggle between different input factors and generate cost output to evaluate how staff positions in the prototypical school model and different districts would be affected
 - For example, if the supplemental pay category of deemed done activities are considered a component of basic education, the model will estimate the total cost to the state as well as the allocation to specific districts
- Calculator output will summarize the cost effects for the state given different choices around compensation factors
- Evaluate market rate adjusters effect on costs across the state dependent upon scenarios run by the task force

Staff Salary Cost Model Architecture

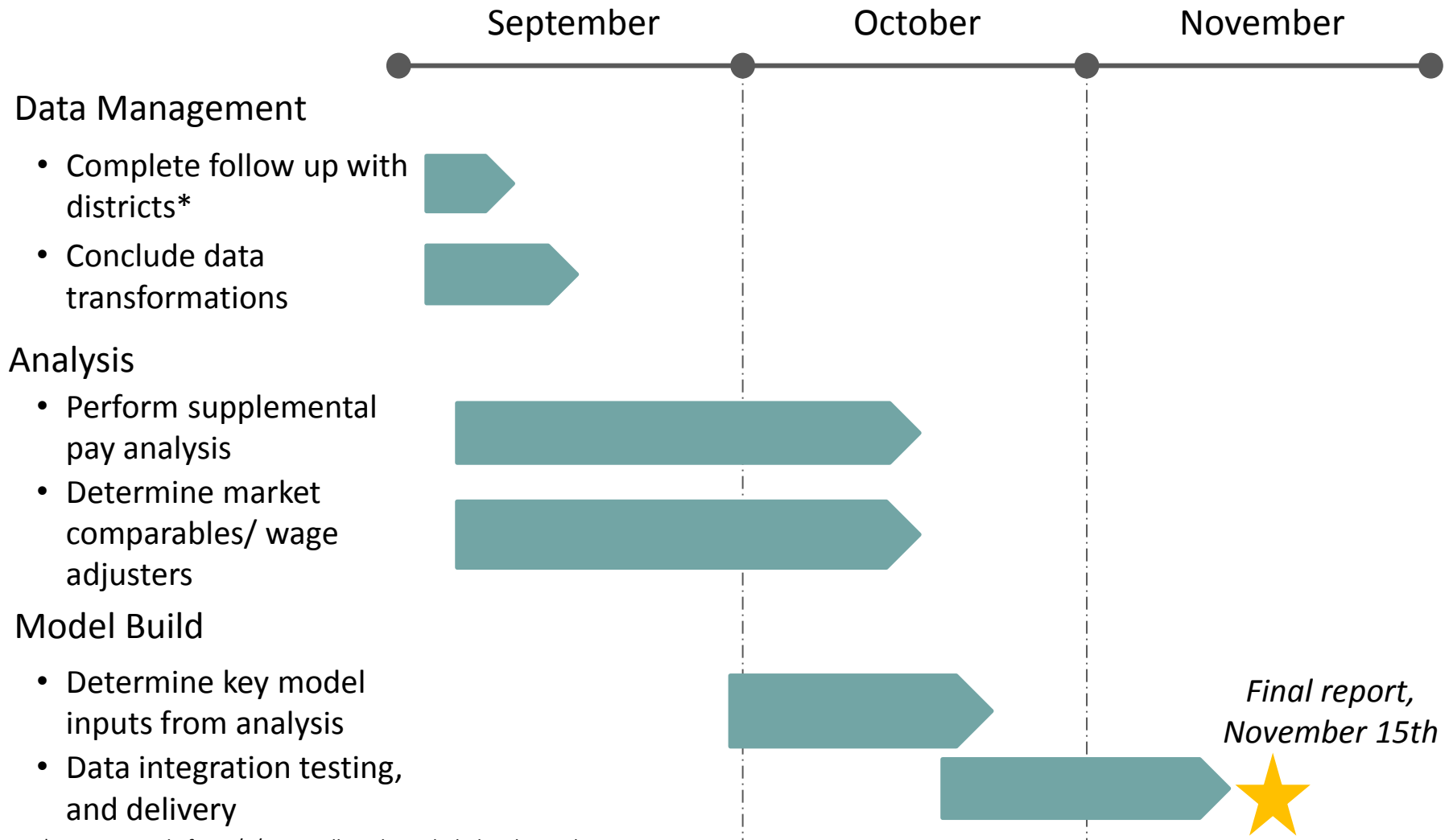
The Staff Salary Cost Model will support analyzing funding scenarios



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Project Timeline: Next Steps



*Data received after 9/1/2016 will not be included in the analysis

9/1/2016

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Questions?

Appendix

Supplemental Pay Categories

Certificated Instructional Staff

Deemed Done
Degrees / Credits
Experience (anywhere)
Combination of degrees / Credits & experience
Longevity (in district)
Hard-to-Staff positions
Professional responsibility stipend
Other (please describe)

Other
Planning period buyouts
Shift differential pay
Paid holidays/ vacation/ sick leave buyouts
Classroom supplies stipend
Fieldtrips
Data entry
Other (please describe)

Time Outside Regular School Day
Parent / Teacher conferences
Open House
Staff meetings
Home visits
Attending student dances/sporting events/concerts/other performances
Tutoring / one-on-one student assistance
Zero Period
Special Education IEP
Student assessment / grading / evaluation of student work
Combination of some or all of above
Other (Please describe)

Time Outside 180 Day School Year
Classroom Prep / Wrapup
Extra Days
Summer School
Other (please describe)

Additional Responsibilities
Class Size Overload
Self-contained Special Education Classroom
Department head
Technology leader
Emergency preparedness
Mentoring
Curriculum development
Developing school improvement days
Academic advising
Leadership stipend
Extracurricular
Other (please describe)

Professional Development
Support pursuing Prof Cert (incl NBPTS prep)
Professional Learning Community (PLC)
District directed PD days
Self directed PD days
Other (please describe)

Supplemental Pay Categories

Certificated Administrative Staff

Deemed Done
Degrees / Credits
Experience (anywhere)
Combination of degrees / credits & experience
Longevity (in district)
Hard-to-staff positions
Professional responsibility stipend
Other (please describe)

Additional Duties
Travel
Per Diem Days
Extracurricular Activities
Other (please describe)

Other
Phone and car stipends
Vacation/ Sick Leave Buyout
Other (please describe)

Supplemental Pay Categories

Classified Staff

Deemed Done
Degrees / Credits
Experience (anywhere)
Combination of degrees / Credits & experience
Longevity (in district)
Hard-to-Staff Positions
Professional responsibility stipend
Other (please describe)

Professional Development
District-directed PD days
Self-directed PD days
Other (please describe)

Time Outside 180 Day School Year
Extra Days before or after SY
Other (please describe)

Time Outside Regular School Day
Staff Meetings
Other (Please describe)

Additional Responsibilities
Self-contained special education classroom
Department head
Technology leader
Emergency preparedness
Mentoring
Extracurricular
Other (please describe)

Other
Tools / Uniform / Phone Stipend
Shift Differential Pay
Paid holidays / vacation / sick leave buyouts
Other (please describe)

Statutory Programs of Basic Education

Sample included only individuals from the programs below

Program Accounting Code	Program Accounting Name
01	Basic (General) Education
02	Basic Education – Alternative Learning Experience
03	Basic Education – Dropout Reengagement
21	Special Education – Supplemental, State
22	Special Education – Infants and Toddlers, State
26	Special Education, Institutions, State
31	Vocational – Basic, State
45	Skills Center - Basic, State
55	Learning Assistance, State
56	State Institutions, Centers & Homes, Delinquent
59	Institutions – Juveniles in Adult Jails
65	Transitional Bilingual, State
74	Highly Capable
97	Districtwide Support
99	Pupil Transportation

Detailed Sampling Methodology

The sampling methodology was designed to capture the diversity of supplemental pay across staff types

Supplemental pay categories (SPCs) refer to the list of categories and sub-categories developed by OSPI for this data collection effort

Situation

Total Supplemental Pay Wages = $\sum_i SPC_i * Wage_{SPC_i}$

Supplemental pay wages refer to the dollar amount paid for each supplemental pay category.

Unknown factors that we're estimating include:

- The proportion of the SPCs in each population (staff position)
- The mean wage for each SPC in each population

- ## Complication
- This is the first time data was collected using detailed supplemental pay categories therefore, the population was not well understood either in terms of prevalence of SPCs or the distribution of wages for the SPCs
 - Designing a sample to estimate mean SPC wages (vs. the prevalence of SPCs) required identifying which staff members perform each SPC first and then sampling from those staff

- ## Resolution
- Sample for the prevalence of supplemental pay categories in the population and derive the mean wage from the sample
 - Maintain a confidence interval of 80%
 - Maintain a margin of error of 5% for tier 1 and 10% for tier 2 staff positions

Specific Sample Size Calculations

The sample size is calculated using a formula that samples for the prevalence of supplemental pay categories in the population

The formula for estimating the required sample size at the 80% confidence level is:

$$n = (1.282)^2(p)(1 - p) \div d^2$$

Z-score corresponding to a 80% confidence interval

Examples: For $p = 25\%$ (each SPC occurs for 25% of the population) & $d = 5\%$ (5% margin of error), the required sample size at the 80% confidence level is 123. This means that for 80% of our samples, the estimated SPC sample prevalence will be between 20% and 30%. In 20% of our district samples, the estimated prevalence will be outside of the 20-30% prevalence range, in spite of the true prevalence being 25%. Although the required sample size is 123, we round up to 125 for the purposes of this analysis since some staff members in the sample will have records that are unavailable or incomplete.

For Tier 2 duty codes we allow for a larger margin of error. For $p = 25\%$ & $d = 10\%$, the required sample size at the 80% confidence level is 31 (rounded to 35 for the purposes of this analysis).