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A Capstone Report

Submitted in partial fulfillment of the requirements for the degree of

Master of Public Health in Public Health Nutrition Practice

University of Washington

2020

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Program Authorized to Offer Degree:  
Nutritional Sciences Program  
School of Public Health

# Acknowledgments

Many thanks to Wendy Weyer and Shoko Kumagai from the Bellevue School District Nutrition Services for their support and expertise throughout this project. A huge thank you also to Lina Pinero Walkinshaw whose guidance and encouragement made this project and report possible. Special thanks to Brienne Kappel from the Dairy Council for her knowledge on school meal program support endeavors, and thanks to the students who contributed their time and thought through participating in the surveys.

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## Chapter I: Introduction

The purpose of the School Breakfast Participation Project is to support Bellevue School District (BSD) Nutrition Services to increase participation in the school breakfast program in order to provide all students the opportunity to receive a nutritious breakfast before starting the school day. Middle and high school students are the focus of the project. Special attention is paid to developing strategies to increase participation of students who qualify for free and reduced-price meals.

Project objectives include:

- 1) Review school meal program published and grey literature and school meal programs best practices nationwide.
- 2) Analyze data from both a district-wide and a school-specific student survey with questions pertaining to the school breakfast program likes, dislikes, and perceptions.
- 3) Develop, conduct, and analyze a survey specifically about the school breakfast program for middle school and high school students attending summer school at Sammamish High School during summer 2019.
- 4) Propose a set of recommended actions for the Nutrition Services staff to implement during the 2019-2020 school year and beyond with the goal of increasing school breakfast participation.

### Population

The target population for this project is the BSD student body with focus on middle and high school students. School meals present a public health opportunity for enhancing daily nutrient intake and reducing the burden of food insecurity. School meal programs additionally have the potential to reach thousands of students in public school districts. BSD has a total of 29 schools, serving about 20,000 students.<sup>1</sup> The district includes 16 elementary schools, one Spanish immersion elementary school, one Mandarin dual language elementary school, five middle schools, four high schools, and two choice schools with grades 6-12.<sup>1</sup> Forty-one percent of students are Asian, 34% are white, 13% are Hispanic, 9% are multi-ethnic, and 3% are African

American.<sup>1</sup> Thirty-eight percent of students have a first language other than English, 15% of students receive English language learner services, and 18% of students qualify for free and reduced-price meals.<sup>1</sup>

### **Nutrition Topic of Interest**

This project focuses on school breakfast consumption as the main nutrition topic of interest. Specifically, this project explores strategies to increase participation in BSD's breakfast program.

Breakfast presents an opportunity for students to obtain part of their daily energy, and macro- and micronutrient requirements. Breakfast can also alleviate hunger for children before starting school. Adequate nutritional intake is important for children and adolescents, to fuel growth and reduce chronic disease risk. Childhood and adolescence are critical times for cementing healthy lifestyle habits that carry on into adulthood.

There is significant evidence that breakfast consumption among students is associated with positive health and academic outcomes. In 2005, Rampersaud et al. conducted a systematic review of 47 articles, exploring the relationship between breakfast consumption, nutritional status, body weight, and academic performance. They found that students who consistently ate breakfast consumed more daily calories and had higher nutritional statuses (greater intake of fiber and micro- and macronutrients, and better overall diet intake and quality) than students who skipped breakfast.<sup>2</sup> Numerous other studies have corroborated this finding: students who consume breakfast have higher nutrient profiles than students who skip morning breakfast.<sup>3,4,5,6</sup> Regarding body weight and academic performance, breakfast eaters were overall less likely to be overweight, and more likely to have better memory, test grades, and school attendance than their breakfast-skipping counterparts.<sup>2</sup> While lower BMI has been associated with breakfast consumption in several studies,<sup>7,8</sup> variations between study methodologies limit the establishment of a causal relationship between breakfast eating habits and adiposity. Also, the finding that breakfast eaters consume more calories than breakfast skippers seems counter to the finding regarding weight status. This contradiction further indicates that more mediating factors exist between breakfast consumption and weight/BMI.

Some studies have shown specific benefits imparted by participation in the national School Breakfast Program. In a 2017 article by Fletcher and Frisvold, an analysis of differences in child food insecurity rates between School Breakfast Program-participating and School Breakfast Program-non-participating schools showed that elementary school children with access to the School Breakfast Program were significantly less likely to experience food insecurity than those without access to the School Breakfast Program.<sup>9</sup> In a 2006 study by Bhattacharya et al., children at School Breakfast Program-participating schools had significantly improved diet quality (reduced calories from fat, and increased micronutrient intake) during the school year when they had access to the School Breakfast Program compared to during summer when they did not.<sup>10</sup>

By identifying and addressing barriers to participating in the BSD school breakfast program, potential implications of this project may include increasing student and parent awareness of the school breakfast program, and increasing student interest and participation. This project may also enhance communication and support between Nutrition Services and BSD administrators by highlighting the potential unmet need of students who qualify for free and reduced-price meals and yet are not currently participating in the breakfast program.

## Chapter II: Bellevue School District Nutrition Services Organization Overview

### Structure, Mission, and Goals

Nutrition Services oversees and manages all school meals in BSD. Nutrition Services falls under the BSD Department of Finance and Operations. The Assistant Manager of Nutrition Services reports to the Director of Nutrition Services, who reports to the Deputy Superintendent of Finance and Operations.<sup>11</sup> Nutrition Services has over 100 employees, most of whom hold part-time positions. The department is a self-supporting operation expected to run on a nonprofit, break-even basis, meaning general district funds are not directed to day-to-day operating costs. Funding comes from federal and state sources and cash receipts from

sales. Key internal partners and collaborators of Nutrition Services include Facilities (custodial and maintenance), Family Connections Centers, Nursing, and Warehouse.

The mission of BSD Nutrition Services is to meet the nutritional needs of students with quality food, and to provide food to students in a timely manner during the allotted meal periods.<sup>12</sup> Breakfast and lunch menu items follow the standards set forth by the Healthy, Hunger-Free Kids Act and the 2015 Dietary Guidelines for Americans.<sup>12</sup> In addition, meal affordability is prioritized.<sup>12</sup> Items served through Nutrition Services include whole grain products, fruits and vegetables, and non- and low-fat milk.<sup>12</sup> Menu items are also trans-fat free and low in sodium and calories.<sup>12</sup> In alignment with Nutrition Services' mission and goals, this project aims to increase student awareness and utilization of the opportunity to obtain nutrition at the start of the school day in order to reach fullest potential for top academic performance and overall well-being during school and into adulthood.

## School Meals

Nutrition Services participates in the National School Lunch Program and the School Breakfast Program. These federally assisted school meal programs operate in public and nonprofit private schools, as well as residential child care centers.<sup>13</sup> The National School Lunch Program was signed into law in 1946, while the School Breakfast Program was piloted in 1966 and made permanent in 1975.<sup>13,14</sup> Overseen by the USDA's Food and Nutrition Service federally, the National School Lunch Program and the School Breakfast Program are administered on the state-level by education agencies. In Washington State, the Office of the Superintendent of Public Instruction in Olympia administers the programs. Funds from the Office of the Superintendent of Public Instruction go to local districts who manage and implement the programs. Food and Nutrition Service reimburses participating schools for all meals served to students, given that meals meet federal nutrition standards.<sup>15</sup> Higher reimbursements are given for free and reduced-price meals. Households with incomes at or below 130% of the federal poverty level are eligible for free meals, while households with incomes between 130-185% of the federal poverty level are eligible for reduced-price meals.<sup>16</sup> In 2018, nearly 5 billion National School Lunch Program lunches were served nationally, with about 75% of those lunches served

at a free or reduced price.<sup>15</sup> In the same year, around 2.4 billion School Breakfast Program breakfasts were served nationally, 85% of which were served at free or reduced price.<sup>17</sup>

In the Bellevue School District, lunch is served daily in all schools, and breakfast is served in eight elementary schools, two middle schools, and four high schools (14 out of the district’s 29 schools). Around 7,300 lunches and 870 breakfasts are served every day. At schools that serve breakfast, breakfast is free for all students who qualify for either free or reduced-price meals. Breakfast is served 15-30 minutes before the start of the school day in the cafeterias. At Sammamish High School, breakfast is served in a condensed service line next to the lunch lines. All 13 other schools serving breakfast serve breakfast in the same lines where lunch is served. In all breakfast-serving schools, hot and cold breakfast items are available for selection. Breakfast menus offered in elementary, middle, and high schools during October 2019 are shown in Figure 1.

**Figure 1.** Elementary, middle, and high school breakfast menus for October 2019.<sup>18</sup>

Elementary School Breakfast Menu – October, 2019					Breakfast Offered at Ardmore, Enatai, Lake Hills, Newport Heights, Phantom Lake, Sherwood Forest, Stevenson, and Woodridge
Meal Prices: Breakfast: \$2.25, Reduced Price: FREE, Milk ONLY: \$0.50, Adults: \$3.25					
Monday	Tuesday	Wednesday	Thursday	Friday	
Pancake-wrapped Turkey Sausage	Yogurt Parfait w/ Nut-FREE Cinn. Granola	French Toast Sticks	Yogurt Parfait w/ Nut-FREE Cinn. Granola	Breakfast Slider: Egg & Cheese on a WG Biscuit	
<b>Served Daily:</b> Whole Wheat Bagel w/ Cream Cheese & Jam, and <i>Kid’s Choice</i> – Select 1-2 items from Low-fat Yogurt, Whole Grain Blueberry Muffin, Assorted Whole Grain Cereals (Multigrain Cherrios, Rice Chex, Cinnamon Rice Chex, and Rice Krispies), and Nut-FREE Granola <i>**Breakfast includes fresh, dried, and/or canned fruit, and your choice of milk (1% White, Lactose Free and Soy milk).**</i>					

Middle School Breakfast Menu – October, 2019					Breakfast Offered at Highland & Odle
Meal Prices: Breakfast: \$2.50, Reduced Price: FREE, Milk ONLY: \$0.50, Adults: \$3.25					
Monday	Tuesday	Wednesday	Thursday	Friday	
<b>NEW!</b> Freshly Baked Cinnamon Roll	English Muffin Sandwich: Egg, Ham & Cheese or Egg & Cheese	Buttermilk Pancake w/ Turkey Sausage & Syrup	English Muffin Sandwich: Egg, Ham & Cheese or Egg & Cheese	Buttermilk Pancake w/ Turkey Sausage & Syrup	
<b>DAILY Choices:</b> Assorted Cereals, Bagel & Cream Cheese, Breakfast Bread Slices, Breakfast Cinnamon Crumble Cake, Chewy Oats Round, Maple Pancake-wrapped Turkey Sausage, and Yogurt Parfait. <i>Breakfast includes fresh, dried and/or canned fruits or fruit juice and your choice of milk.</i>					

High School Breakfast Menu – October, 2019					Breakfast Offered at Bellevue, Interlake, Newport & Sammamish
Meal Prices: Breakfast: \$2.50, Reduced Price: FREE, Milk ONLY: \$0.50, Adults: \$3.25					
Monday	Tuesday	Wednesday	Thursday	Friday	
<b>NEW!</b> Freshly Baked Cinnamon Roll	Croissant Sandwich: Egg, Turkey Bacon & Cheese or Egg & Cheese	English Muffin Sandwich: Egg, Ham & Cheese or Egg & Cheese	Croissant Sandwich: Egg, Turkey Bacon & Cheese or Egg & Cheese	English Muffin Sandwich: Egg, Ham & Cheese or Egg & Cheese	
<b>DAILY Choices:</b> Assorted Cereals, Bagel & Cream Cheese, Breakfast Bread Slices, Breakfast Cinnamon Crumble Cake, Chewy Oats Round, Maple Pancake-wrapped Turkey Sausage, and Yogurt Parfait. <i>Breakfast includes fresh, dried and/or canned fruits or fruit juice and your choice of milk.</i>					

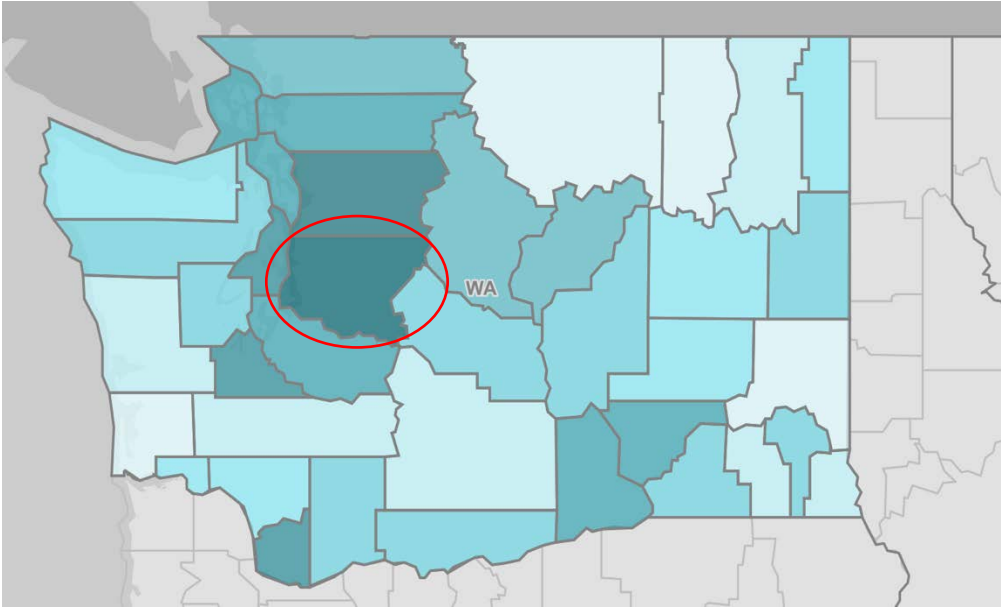


# Chapter III: Importance of School Breakfast for Bellevue School District Students

## Economic Disparities within Washington State, King County, and the City of Bellevue

BSD is within the City of Bellevue, in King County, Washington. According to the 2018 American Community Survey (ACS) conducted by the U.S. Census Bureau, the median household income in Washington State is \$74,073 (compared to a national median household income of \$61,937), ranking as the 10<sup>th</sup> highest median income state.<sup>19,20</sup> Within the state, however, notable income differences exist between counties. This is demonstrated in the map in Figure 2, which shows King County as the wealthiest county in the state with a median household income of \$83,571, according to the 2013-2017 ACS 5-Year Data Profile.<sup>21</sup> Lightest to darkest colors represent lowest to highest median household income estimates (ranging from \$39,895 in Pacific County to \$83,571 in King County).

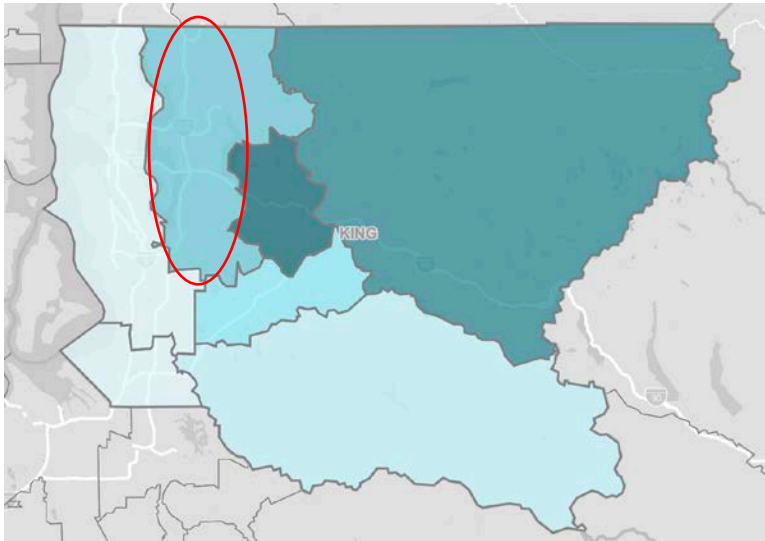
**Figure 2.** Median household incomes in Washington State counties as reported by the 2013-2017 ACS 5-Year Data Profile.<sup>22</sup> King County is circled in red.



Although King County has the highest median household income in the state, significant differences in income are evident within King County subdivisions. A county subdivision is a

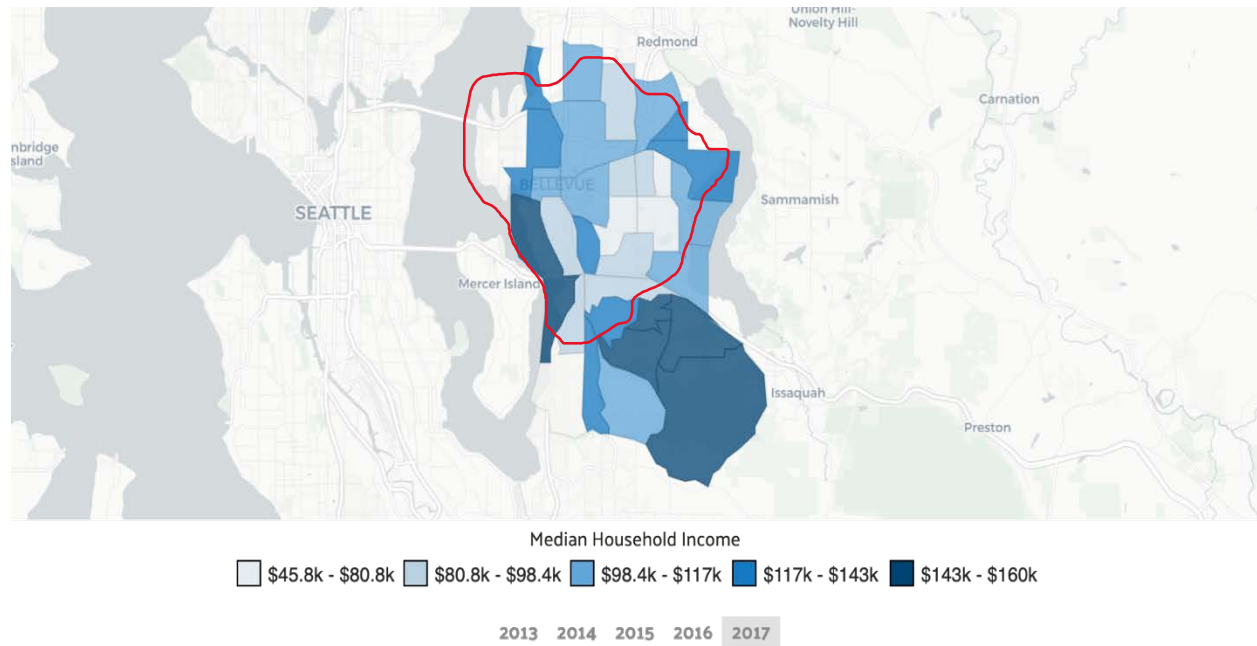
geographic area within a county recognized by the Census Bureau.<sup>22</sup> Median household income levels are higher in the eastern subdivisions, as shown in Figure 3. Lightest to darkest colors represent lowest to highest median household income estimates (ranging from \$61,283 in the Federal Way-Auburn Division to \$125,230 in the Issaquah Plateau Division). Bellevue falls within the Seattle East Division, circled in red, which has a median household income of \$103,124.

**Figure 3.** Median household incomes in King County subdivisions as reported by the 2013-2017 ACS 5-Year Data Profile.<sup>22</sup>



According to the 2017 ACS 5-Year Estimate, the median household income in the City of Bellevue is \$105,402.<sup>23</sup> Within the city, however, large differences in income are observed by census tract level, as shown in Figure 4. The area served by BSD is outlined in red, and as evidenced by the map in Figure 4, the district serves students living in areas with median household incomes ranging from \$45,000 to \$160,000.

**Figure 4.** Median household income in Bellevue census tracts as reported by the 2013-2017 ACS 5-Year Estimate.<sup>24</sup>



The maps in Figures 2, 3, and 4 demonstrate how significant income inequality exists within Washington State, King County, and Bellevue. While median household income in Bellevue is on average much greater than the national median household income, several Bellevue neighborhoods served by BSD have median household incomes far lower than the national median. This presents BSD with an opportunity to serve students coming from households that may be especially financially burdened, and help alleviate some of the negative health and diet outcomes among lower-income children through their breakfast and lunch programming.

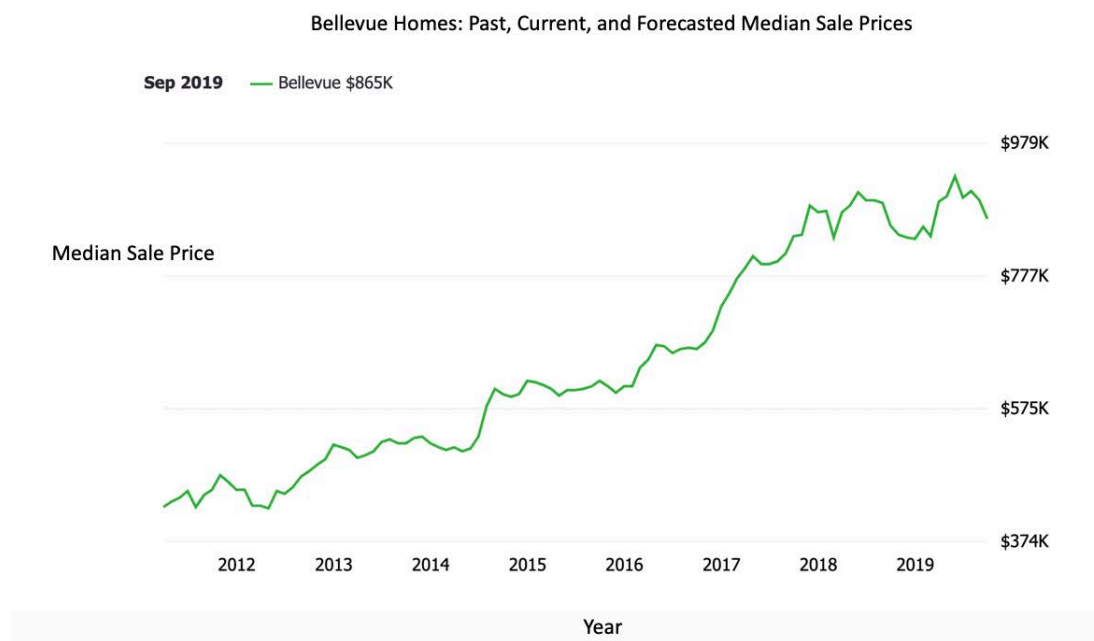
### Impact of Economic Disparities on Health and Nutrition Outcomes

According to the King County City Health Profile for Bellevue published by Public Health Seattle & King County in 2019, 7.4% of the population lives under 100% of the federal poverty line, and 16.4% lives under 200% of the poverty line.<sup>25</sup> The percentage of low-income individuals living in Bellevue is reflected in BSD's district-wide free and reduced-price eligibility of 18%.<sup>1</sup> In the 2018-2019 King County Community Health Needs Assessment, a collaborative

effort between 11 hospitals, health systems, and Public Health Seattle & King County, people of color and low-income residents are recognized as being at higher risk for poor health and social outcomes.<sup>26</sup>

Furthermore, since 2012 Bellevue has experienced a dramatic rise in housing costs (Figure 5). These rising costs have left many families as housing cost-burdened, meaning that they spend more than 30% of income on housing costs, whether rent or mortgage.<sup>27</sup> According to the Housing Affordability report by Communities Count, on average from 2013-2017, 35.4% of Central Bellevue, 30.2% of Northeast Bellevue, 25% of South Bellevue, and 32.7% of West Bellevue were housing cost-burdened.<sup>27</sup> High housing costs decrease the amount of income available for other necessities, such as food and healthcare. As a result, as Bellevue has become an increasingly expensive place to live, families are spending more on housing, leaving fewer funds for food.

**Figure 5.** Past, current, and forecasted Bellevue home median listing prices.<sup>28</sup>



Food security and access to healthy food have direct impact on children’s nutritional intake and status. The Washington State Department of Health’s Healthy Youth Survey reports

that 74% of 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders in the East Region of King County (including Bellevue) public schools consume less than the recommended five fruits and vegetables daily, and 10.1% drink soda or sugar-sweetened beverages daily.<sup>29</sup> Ten percent of this population is considered overweight, and 6% percent of this population is considered obese.<sup>29</sup> Additionally, 21% of 6<sup>th</sup>, 8<sup>th</sup>, 10<sup>th</sup>, and 12<sup>th</sup> graders in this region had not eaten breakfast on the day the survey was administered.<sup>29</sup>

These data on income, housing cost-burden, and nutritional intake and status in Bellevue highlight the importance of school meals in ensuring access to affordable and healthy food for all students.

## Chapter IV: School Breakfast Program Participation

### Participation Nationally

The number of schools and students participating in the School Breakfast Program has increased steadily since the program was first piloted in 1966. In 1989, 3.8 million students nationally participated daily, and in 2017, 14.66 million students nationally participated in the program on a given day.<sup>17</sup> However, participation rates have slowed in recent years, with 14.69 million U.S. students participating in 2018 (a slight increase since the previous year).<sup>17</sup> According to the USDA Economic Research Service, most School Breakfast Program participants nationally come from households with lower socioeconomic status. In 2018, around 2.4 billion School Breakfast Program breakfasts were served nationally, 85% of which were served at free or reduced price.<sup>17</sup>

### Bellevue School District Participation

In BSD schools that have breakfast available, a total of about 870 breakfasts are served per day, and 155,000 breakfasts are served per year.<sup>30</sup> In comparison, about 7,300 lunches are served in the district daily, and 1.3 million lunches are served yearly.<sup>30</sup> One measurement used

to gauge school breakfast program participation is the lunch-breakfast or breakfast-lunch ratio, which compares the number of breakfasts and lunches served.<sup>31</sup> According to the Food Research and Action Center’s 2017-2018 School Breakfast Scorecard, Washington State ranks in the bottom 10 states in free and reduced-price school breakfast to lunch ratio (Washington has a ratio of 46.9 breakfasts to 100 lunches, whereas West Virginia has the highest ratio at 83.7 breakfasts to 100 lunches).<sup>32</sup> BSD has even lower school breakfast program participation than the Washington State average participation rate. Using data from the Office of Superintendent of Public Instruction’s 2017-2018 school meal participation reports to compare breakfast-lunch ratios, BSD’s school breakfast program participation ranks in the bottom three of all other King County districts that serve breakfast (Table 1). While there appears to be a general trend of a higher percentage of students eligible for free and reduced-price meals being correlated with a higher breakfast to lunch ratio, BSD has a lower breakfast to lunch ratio than three King County districts all with lower free and reduced-price meal eligibility than BSD. This suggests that there are factors other than household income influencing student participation in the school breakfast program.

**Table 1.** School breakfast program participation compared to school lunch program participation in King County school districts in order of highest to lowest breakfast to lunch ratio.<sup>33</sup>

<b>District</b>	<b># Breakfasts Served in FY 2018</b>	<b># Lunches Served in FY 2018</b>	<b>Breakfast to Lunch Ratio</b>	<b>% Students Eligible for Free and Reduced-Price Meals</b>
Washington State			0.47 <sup>32</sup>	
Tukwila	309,409	329,674	0.94	74.7%
Auburn	802,664	1,545,888	0.52	52%
Shoreline	213,895	487,674	0.44	26.5%
Vashon Island	46,193	104,945	0.44	22.8%
Seattle	1,122,580	2,700,602	0.42	31%
Highline	54,497	144,283	0.38	68%

Federal Way	748,910	2,022,031	0.37	59.2%
Renton	490,724	1,321,362	0.37	51.5%
Enumclaw	87,467	270,870	0.32	32%
Kent	748,157	2,449,941	0.32	48.8%
Riverview	40,396	168,663	0.24	15%
Tahoma	75,228	321,997	0.23	13%
Northshore	195,605	1,204,562	0.16	14.8%
Bellevue	154,784	1,289,596	0.12	18%
Lake Washington	169,144	1,513,051	0.11	12.1%
Snoqualmie Valley	28,712	262,882	0.11	11.6%

## Chapter V: Existing Programs and Resources

Several programs and resources that have the potential to help increase BSD school breakfast program participation exist through Nutrition Services and external organizations. External organizations with potential partner opportunities include the Dairy Council and United Way. Nutrition Services has worked with the Dairy Council in the past on their hot chocolate milk program, and the Dairy Council helped work at BSD’s breakfast vending machine kick-off events.

### Current Bellevue School District Programs and Resources

Offering “breakfast after the bell,” or “second chance breakfast,” breakfast vending machine programs have recently started in four of the district’s high schools. The first breakfast vending machine was placed in Sammamish High School at the end of the 2017-2018 school year, followed by Interlake High School in April 2019, and Bellevue and Newport High Schools in September 2019. Breakfast items are available for purchase in vending machines from 7:00-10:15am every day. Students pay by entering their birth date and student ID numbers, which

accesses their pre-paid or free and reduced-price accounts. Breakfast items are free for both free and reduced-price meal account holders, and all others are charged \$2.50. Breakfast vending machines contain easy-to-eat items also served in the school cafeterias, such as bagels, yogurt parfaits, and banana bread. At Sammamish High School, the breakfast vending machines are so popular that new staff have been hired to restock the machines during mid-morning.

Other existing services provided by Nutrition Services include online menus containing nutrition and allergen information that can be translated into 75 different languages, as well as options for students with special dietary needs. The organization additionally offers a catering service, and has in place several environmental and food conservation efforts such as moving from plastic to reusable silverware, and transitioning from Styrofoam to durable plastic or compostable trays.<sup>12</sup> Nutrition Services partners with the community organization, HopeLink, in a School Food Share program to donate unopened or packaged foods to local food banks.

### **Dairy Council Opportunities**

The National Dairy Council provides grants, programming, and educational materials to schools and school districts across the country. The Washington State Dairy Council has several programs that could help BSD increase school breakfast program participation.

Fuel Up to Play 60 (FUTP60) is a program launched by the National Dairy Council, the USDA, and the National Football League that encourages healthy eating and increased physical activity (60 minutes per day) in schools. In Washington, the Dairy Farmers of Washington and the Seattle Seahawks lead the program. FUTP60 encourages schools to make a Healthy Eating Play which can include increasing breakfast program participation as a goal. Throughout the program, schools and students have the opportunity to win prizes ranging from tee shirts and flags to Seahawks game tickets and a visit from the Seahawks mascot, Blitz. In addition, qualifying schools can apply for funding up to \$4,000 per year to help implement one Healthy Eating Play and one Physical Activity Play. As schools can participate as much or as little as they desire in FUTP60, BSD Nutrition Services could work with school administrators to set up the program and support Healthy Eating Plays with an emphasis on increasing SBP participation.



Another program available through the Washington Dairy Council is the Start Strong with Breakfast program.<sup>34</sup> This program provides marketing and promotional material to increase student awareness and interest in school breakfast, and to encourage participation by adding a hot chocolate milk or smoothie item to the menu. The program provides recipes and marketing fliers for these menu items, as well as equipment rebate opportunities for purchase of required supplies to make hot chocolate milk or smoothies. In response to increasing interest across the state to reduce milk carton waste, the Dairy Council is also working on an addition to the program that will supply milk dispensers to participating districts.

### United Way Opportunity

Another program that could be useful to Nutrition Services is the Washington State Breakfast Challenge hosted by United Way of King County and supported by other organizations including the Dairy Council.<sup>35</sup> United Way of King County is a non-profit organization fighting for reducing homelessness, increasing student graduation rates, and ensuring family financial stability. Any school with the SBP is eligible to participate in the challenge, and participating schools receive a Breakfast Challenge Toolkit with outreach materials and prizes to incentivize student participation. Schools can also win prizes throughout the challenge. At the end of the month-long competition, schools with the highest breakfast participation receive \$1,500, schools with the most improved participation win \$1,000, and the school with the most improved breakfast after the bell participation is awarded \$1,000. All schools in BSD participate in the SBP and thus are eligible for the challenge and to win prizes.

## Chapter VI: Strategies from the Literature to Increase School Breakfast Program Participation

The following questions informed the literature review on strategies to increase school breakfast program participation:

- What elements make a breakfast program successful?
  - How does program success vary among schools with high and low free and reduced-price meal eligibility?
- What are the greatest contributors to lack of school breakfast program participation?
- How do school districts across the country increase breakfast program participation (especially in districts with low free and reduced-price meal eligibility)?
- What strategies can be used to support lower income students in higher income schools?

The University of Washington Health Sciences Library librarian was consulted to develop a PubMed search strategy for this literature review. Ninety-six total results were obtained using the following search strategy:

```
((breakfast program* OR school breakfast* OR (breakfast[mh] AND schools[mh]) OR ((serving breakfast*) AND (school OR schools OR classroom*))) AND (participat* OR utiliz* OR utilis*) AND 2005:3000[pdat] AND English[la]))
```

The thirteen articles included in the literature review are from 2005 to present, based in the U.S., and only pertain to school breakfast.

This review is divided into (1) perceptions of school breakfast, (2) school breakfast interventions, (3) the impact of expanded breakfast programs, and (4) other resources for expanding school breakfast programs. Several studies explore the perceptions of students, parents, and school administrators on school breakfast programs. While published studies about school breakfast program interventions are few, increased breakfast program participation rates and improved perceptions of school breakfast associated with these interventions suggest that alternative breakfast-serving models may improve breakfast program participation. The impact of these expanded school breakfast programs on program participation, food service economics, and food waste is also explored in several studies. In addition, other resources outside of the scientific literature are included in this review. The organizations, No Kid Hungry and Food Research and Action Center, provide extensive tools for schools interested in expanding their school breakfast programs. A Facebook group, called

School Meals that Rock, is also highlighted, and school breakfast menus from different districts are compared.

## School Breakfast Program Perceptions

### Breakfast Eating Behaviors Reflect Student Perceptions of School Breakfast

Hearst et al. (2016) found that among 9<sup>th</sup> and 10<sup>th</sup> graders from 16 rural high schools in Minnesota<sup>36</sup> breakfast skippers reported more perceived barriers and fewer benefits to eating school breakfast compared to regular breakfast eaters. Breakfast consumption barriers included the desire to lose weight (especially among girls), lack of hunger in the morning, lack of time in the morning, cost, food quality, and stigma. Breakfast eaters reported perceived benefits of breakfasts included helping them to pay attention in class and have more energy throughout the day. Those who ate breakfast regularly compared to those who skipped breakfast regularly reported more frequently that they thought eating school breakfast would likely improve academic skills, social interaction, and overall health. In this analysis, 36% of students received free and reduced-price meals, and 30% were non-white.

### Parents and Caregivers Who Perceive More Benefits of School Breakfast Participate More

Spruance et al. (2018) found that among parents in predominantly white, suburban Utah K-12 schools with 25-50% free and reduced-price eligibility,<sup>37</sup> over 25% reported a lack of knowledge regarding breakfast availability at their child's school, and while 76% reported that their child did not participate in school breakfast, 80% said that they would support their child if they wanted to participate. Stress relief on busy mornings was a commonly cited perceived benefit of school breakfast. Elementary school students were more likely to participate in school breakfast than middle or high school students, and children participating in free and reduced-price lunch were five times as likely to participate in school breakfast as those not participating in the free and reduced-price lunch program. Children whose parents perceived benefits to school breakfast were ten times as likely to participate in the program as those whose parents did not believe there were benefits. The most commonly cited reasons for non-

participation included breakfast availability elsewhere; parent preparation of breakfast; low school meal quality; cost; and difficulty arriving to school early enough for school breakfast.

In 2017 Askelson et al. found that among 152 K-12 schools in Iowa, where the average student participation in the free and reduced-price meal programs was 38.8%,<sup>38</sup> 45.5% of parents/caregivers (n=7,209) cited convenience as the greatest benefit to school breakfast, and 25.4% said school breakfast would make mornings less stressful. Forty-nine percent thought the school breakfast program was intended to help parents who lacked money, 48.5% thought it was intended for parents who lacked time, and 47.7% believed it was for all children enrolled in the district. Respondents most frequently cited child preference for eating at home, parent responsibility to provide, and child dislike of school breakfast as reasons for not participating in the program. Cost, timing, and cultural values regarding eating meals together as a family were also noted as reasons for not participating. Many survey respondents suggested that changing bus or academic schedules to accommodate time for students to eat breakfast at school might make participating in school breakfast more attractive. Factors positively associated with school breakfast program participation included: perceived benefits of school breakfast, belief that breakfast is an important meal, perceived health value of school breakfast, free and reduced-price participation, and belief that school breakfast helps student athletes. Belief that the school breakfast program is intended for economically disadvantaged students was negatively associated with participation.

#### Administrators Site Several Barriers to Increasing Breakfast Program Participation

In the same 2017 study, Askelson et al. surveyed 152 school administrators about their perceptions of the school breakfast program.<sup>39</sup> The primary barriers to program participation identified by administrators were busing schedules, time constraints, and lack of flexibility within school day schedules to move the breakfast period. Some administrators pointed to a lack of menu options, limited time and resources, and a restricted budget as challenges to improving the program. While the majority of respondents said they would be willing to make changes to the breakfast program as long as it was offered before school, less than half of respondents said they had communicated with the food service director about making

improvements. About half of respondents expressed willingness to explore grab-and-go breakfast options, and less than half were willing to allow breakfast in classrooms or other breakfast-after-the-bell options. Many respondents reported a lack of knowledge regarding alternative breakfast serving models. Although administrators acknowledged the hypothetical benefits of school breakfast, the school breakfast program was not prioritized, largely because of the perception that students eat breakfast at home.

## **Interventions to Increase Program Participation**

### **Grab-n-Go Breakfast**

Nanney et al. conducted a pilot study in 2011 in a suburban middle school in Minneapolis with 239 6<sup>th</sup> grade students over six weeks.<sup>40</sup> The study involved implementation of grab-n-go breakfast items served through a hallway delivery cart. Students were allowed to eat the breakfast items from the delivery cart in their classrooms. A wellness committee consisting of the assistant principal, various food service and building staff, a school nurse, and teachers identified areas to evaluate, and process and impact measurements were collected from students, teachers, and food service personnel. Two-hundred and nineteen students completed student surveys; 68% were white and 36% were eligible for free and reduced-price meals. The majority of students were very satisfied with eating in the classroom, and the majority liked the taste of the healthy grab-n-go items. All teachers surveyed reported that the breakfast in the classroom was not messy or disruptive. All teachers also reported student behavior with breakfast in the classroom as good or excellent. Minimal food waste was observed throughout the intervention, and only one spill and food wrapper related to the breakfast program intervention was found in the hallway. Sixth grade school breakfast program participation increased significantly from 0.74 days per week to 1.21 days per week. Participation increased more for students qualifying for free and reduced-price meals than full paid students.

### **Grab-n-Go Breakfast and Marketing Campaign**

In 2019, Nanney et al. conducted a group randomized trial, called Project BreakFAST.<sup>41</sup> Participants were 7,792 9<sup>th</sup> and 10<sup>th</sup> graders from 16 rural Minnesota high schools. Among participants, the median free and reduced-price eligibility was 32.2%, and the median percent of non-Hispanic white students was 87.8%. Schools were randomized into intervention and control groups. The intervention group had to implement 3 components over the course of the 2012-2013 school year: 1) change breakfast service practices; 2) implement school-wide marketing to improve attitudes and beliefs towards the SBP; and 3) foster a supportive social environment around eating school breakfast. The control group did not receive the intervention until after the study follow-up period. Breakfast service practice changes included implementation of a grab-n-go cart outside of the school cafeteria and allowing students to eat in hallways. Student-led marketing campaigns involved advertising on the school website, school newsletter, and Twitter; making announcements at assemblies and student orientations; holding a breakfast kick-off week and taste testing events; and creating a student-developed video advertisement. A 3.0% median increase in school breakfast program participation between baseline and follow-up was observed in the intervention group, while a 0.5% median increase was observed in the control group (the difference between these two increases was statistically significant, Wilcoxon test,  $P=0.03$ ). Increases in school breakfast program participation among intervention schools ranged widely from -0.8 to 24.8%, whereas increases among control schools ranged from -0.5% to 4.7%.

### Second-Chance Breakfast

In a 2013 article by Olsta, an intervention in a public high school in a Midwestern suburb was implemented to increase school breakfast program participation.<sup>42</sup> The high school had 2,560 students, 43% of students had minority backgrounds, and 27.5% of students came from low-income families. Before the intervention, a needs assessment revealed that the most common reasons why students in the school skipped breakfast were lack of time and lack of hunger in the mornings. Rules against eating in classrooms, lack of food available for purchase after the start of school, and perceived stigma around school breakfast participation were also cited as barriers to breakfast consumption and breakfast program participation. Based on the

needs assessment, the intervention was designed to increase the window of opportunity to obtain and eat breakfast after the start of the school day. The breakfast program intervention included keeping the breakfast line in the cafeteria open until the start of lunch prep, allowing students with morning study hall in the cafeteria to purchase food while studying, and stocking a mobile cart with complete meals and a la carte options to move through the halls to serve students with study hall in classrooms. To maintain cleanliness and classroom decorum, rules were developed with and approved by the school principal and teachers. A Dairy Council grant helped fund part-time staff to operate the mobile cart. Advertisements for the extended breakfast program included an opening day ceremony, coupons, samples, articles in the school newspaper and website, and a display at back-to-school night. The number of breakfasts served tripled during the first two weeks of the breakfast program intervention. By the end of the school year, on average, 324 breakfasts were served daily, an increase of 400% since baseline. Fresh fruit, cereal bars, and milk were the most popular a la carte breakfast items. In the following school year, the dramatic increase in breakfast participation encouraged the school to apply for another grant to obtain a second mobile cart, and the program was duplicated at other schools in the district.

## **Impacts of Modified School Breakfast Programs**

### **Universal School Breakfast Increases Participation**

Leos-Urbel et al. (2013) found that among New York City public elementary and middle schools from 2001-2008,<sup>43</sup> school breakfast program participation experienced a sharp increase after three years of stagnation immediately following a city-wide policy change in 2003 to make breakfast free for all student groups regardless of free and reduced-price eligibility (2002-2004: free-eligible students 38 to 45%; reduced-price eligible 18 to 22%; full paid 10 to 19%). In 2019, Soldavini and Ammerman found that among 2,285 North Carolina public elementary, middle, and high schools,<sup>44</sup> with the exception of high school students eligible for free and reduced-price meals, all students in all school levels were more likely to participate in school breakfast in

schools that offered breakfast free to all students. In addition, for most students, serving breakfast free to all students combined with an innovative serving model was associated with even higher odds of participation compared to using either strategy alone. In the combined free breakfast to all plus breakfast in the classroom option, compared to schools with a traditional serving model elementary school students were 2.66 times more likely to eat breakfast (95% CI: 2.06, 3.44), middle school students were 2.47 more likely to eat breakfast (95% CI: 1.32, 4.61), and high school students were 7.42 times more likely to eat breakfast (95% CI: 4.94, 11.16). This was the most successful of the combined models tested.

### Grab-n-Go Breakfast Increases Participation and Reduces Student-Perceived Barriers

Hearst et al. (2018) found that among a Project BreakFAST sub-sample of 904 students identified as breakfast skippers (eating breakfast fewer than 4 times per week at baseline), there was a significant difference in identified barriers to school breakfast program participation between students in intervention and control schools.<sup>45</sup> From baseline to follow-up, more (5.49% vs. 3.95% increase) students in the intervention schools agreed or strongly agreed with the statement: “It is easy for me to get school breakfast.” Fewer students in the intervention schools compared to control schools agreed or strongly agreed with the statements: “I skip breakfast because I am not hungry in the morning;” “The breakfast food sold at my school tastes bad;” “I am too busy to eat school breakfast;” and “School breakfast takes too much time.”

### Breakfast in the Classroom is Associated with Increased Participation and Reduced Food Waste

When Farris et al. (2019) compared differences in school breakfast program participation and food waste before and after implementation of breakfast in the classroom in one school district with seven elementary schools and 15-49% free and reduced-eligibility, they found that school breakfast program participation increased from 861 students at the beginning of the school year before breakfast in the classroom implementation to 952 students



after breakfast in the classroom implementation at the end of the school year.<sup>46</sup> At the end of the school year, overall food waste declined from 43% to 38.5%.

### Key Personnel Positively View Expanded Breakfast Programs

Haesly et al. (2014) found that among faculty and staff in two suburban Minneapolis high schools involved in a pilot program, called Project BREAK!, which involved implementation of an alternative serving location with grab-n-go items and a policy allowing students to eat in the hallways, overall impressions of the expanded breakfast programs were positive.<sup>47</sup> Principals, assistant principals, head maintenance staff, local foodservice managers, district foodservice directors, and school nurses reported greater positive awareness of the school breakfast program among students and staff; greater visibility of the breakfast program; greater access to nutritious breakfast options for students; increased sense of community among students, faculty, and staff; and reduced stigma associated with the alternative breakfast serving location compared to serving breakfast in the cafeteria. Some food service staff noted that the program changes required minimal time to implement, students ate respectfully in the hallways, and no significant additional food waste was observed. Uneaten and unopened food was given to the school nurse who passed the food onto students with hunger-related issues. Staff and faculty suggested increasing early communication about the breakfast program changes at the beginning of the school year and ensuring that correct equipment is available at the alternative breakfast location. Food service and maintenance personnel reported that the benefits from the program changes outweighed any perceived limitations.

### Expanding School Breakfast Programs is Economically Feasible

In 2019, Shanafelt et al. found that in 10 schools from Project BreakFAST with breakfast program participation under 20% at baseline,<sup>48</sup> expanded breakfast programs were economically feasible considering quantitative cost and revenue data on food costs, nonfood costs, labor costs, technology and construction costs, price per meal, and number of meals sold. For small, medium, and large schools, expanded breakfast program start-up costs totaled an

average of \$6,600, \$4,200, and \$6,600 respectively. This came to about \$15, \$6.52, and \$4.93 per student respectively. On average, start-up costs were recovered within 30 days, and fewer days were required to recover start-up costs in schools with greater enrollment. Every school served enough breakfasts to break even on daily operating costs.

## **Resources and Strategies to Increase Breakfast Program Participation**

### **No Kid Hungry Center for Best Practices**

The No Kid Hungry Center for Best Practices provides resources for schools looking to increase breakfast program participation. One of these resources is a comprehensive guide to implementing effective breakfast after the bell programs.<sup>49</sup> The guide includes how-to's for engaging school stakeholders and gaining buy-in, selecting an appropriate serving model, and developing an implementation plan. Another resource is a collection of success stories from schools across the country that implemented grab and go breakfast, breakfast in the classroom, breakfast after the bell, and universal breakfast. Schools in Michigan and Illinois attributed success with grab and go breakfast to regular debriefing sessions between teachers, administrators, and food service, and early and consistent communication with parents. In Michigan, Illinois, and California, schools pointed to assigning students jobs, such as breakfast sheriffs and sanitation captains, to help maintain cleanliness and decorum when implementing breakfast in the classroom. In a San Francisco high school, faculty and staff reported that the success of a universally free breakfast after the bell program was due to placing breakfast on every student's desk so students dealing with food insecurity were not singled out by being forced to pick up breakfast from the front of the classroom.

### **The Food Research and Action Center**

The Food Research and Action Center also provides school breakfast program expansion resources.<sup>50</sup> The resources include a thorough guide on how to start a breakfast after the bell program, a breakfast after the bell toolkit for principals that includes template documents and

slide decks for communication with stakeholders, suggestions for how to offer breakfast free to all students, and ways to advocate for school breakfast program legislation. Ideas for easy to prepare, serve, and eat menu items for alternative breakfast programs are offered, and include: low-sugar cereals, granola bars, yogurt, fresh fruit, dried fruit, applesauce, trail mix, low fat cheese sticks, and whole wheat bagels with cream cheese.

### School Meals That Rock

Another useful resource is a Facebook group, called School Meals That Rock. The group highlights creative recipes and school meal program initiatives from across the country. A link to the group is found here: <https://www.facebook.com/SchoolMealsThatRock/>.

### School Breakfast Menus from Districts Similar to Bellevue School District

Middle and high school breakfast menus from November 2019 from school districts in the San Francisco Bay Area, California were explored to compare offerings available through BSD Nutrition Services (Table 2). These districts were picked because their student demographics were reflective of student demographics at BSD (high diversity and low free and reduced-price eligibility). Findings suggest that school breakfast menus are similar between districts, often consisting of cereal, bagels, baked goods, breakfast sandwiches, breakfast burrito, pancakes/waffles/French toast and sausage, and yogurt parfait. Other common items include breakfast pizza, string cheese, graham crackers, tater tots, hash browns, and breakfast bars. All districts serve fresh fruit as a part of school breakfast. Even in districts serving highly diverse student bodies, a lack of culturally diverse breakfast options is evident.

**Table 2.** November 2019 school breakfast menu items from Bellevue School District and school districts in the San Francisco Bay Area, California. Districts are ordered from highest to lowest percent non-White.

District	Demographics	Menu Items							
		cereal	bagel	baked good	breakfast sandwich	breakfast burrito	pancakes/waffles/ French toast + sausage	parfait	other
Cupertino Union School District (18,950 students)	6.5% F/R eligible 84% non-White	✓	✓	✓			✓	✓	pizza strip, bfast bar
Santa Clara Unified High School District (16,240 students)	41.3% F/R 80% non-White	✓	✓	✓	✓	✓	✓	✓	bfast bar, tater tots, hash browns, toast, cheese stick
San Jose Unified School District (33,014 students)	45.7% F/R eligible 76% non-White	✓	✓	✓	✓		✓		pretzel roll, hash brown, bfast bar, graham crackers, breakfast pizza
Berkeley Unified School District (9,700 students)	34.9% F/R eligible 68% non-White	✓	✓	✓					string cheese, granola bar
Fremont Union High School District (11,347 students)	15.2% F/R 67% non-White	✓	✓	✓	✓	✓	✓	✓	Bfast pizza
BSD (20,000 students)	18% F/R eligible 66% non-White	✓	✓	✓	✓	✓	✓	✓	bread slices, chewy oat round
Sequoia Union High School District (10,359 students)	39.6% F/R eligible 64% non-White		✓	✓		✓			PB&J Jamwich, toasted cheese sandwich, yogurt and grahams
Mountain View Los Altos Union High School District (4,420 students)	19.7% F/R eligible 61% non-White	✓	✓				✓		Benefit bar, pop tart
Palo Alto Unified School District (12,161 students)	11.1% F/R eligible 60% non-White	✓	✓		✓	✓	✓		string cheese, Benefit bar, oatmeal & sun-flower seeds, bfast pizza, graham crackers, yogurt
Acalanes Union High School District (5,683 students)	6.7% F/R eligible 35% non-White		✓	✓	✓	✓		✓	pizza bread, chicken/ cheese quesadilla, tator tots, smoothie
Tamalpais Union High School District (5,164 students)	11.4% F/R 18% non-White	✓	✓	✓	✓	✓		✓	

## Summary of Key Findings from the Literature Review

Both students and parents identify quality and cost of school breakfast as barriers to participation.<sup>36,37</sup> Students and parents also note that the time allotted for school breakfast and the time when breakfast is offered are prohibitive to participation.<sup>36,37</sup> School administrators identify numerous barriers to changing school breakfast programs, and cite a lack of communication with school food service directors.<sup>39</sup> Results from previous research support adoption of breakfast after the bell programs, such as breakfast in the classroom and grab-n-go breakfast, as methods to improve school breakfast program participation.<sup>40,41,42,43,44</sup> These alternative serving models address many of the identified barriers to student participation and appear to be economically viable.<sup>45,47,48</sup> The No Kid Hungry Center for Best Practices and The Food Research and Action Center provide step-by-step guides on how to choose the most appropriate breakfast after the bell program and how to implement that program. Homogenous items on school breakfast menus from several districts similar to BSD show that there is room for more creativity and cultural diversity in breakfast offerings. School Meals that Rock is a Facebook group that posts unique school menu items and school meal program initiatives from across the nation and can be drawn on for inspiration. Research emphasizes the importance of early and consistent communication between food service staff, school administrators, teachers, parents, and students to the success of changes made to breakfast programs.<sup>40,41,42</sup>

## Chapter VII: Insight from Bellevue School District Student Surveys

### Methods

This project includes two secondary, and one primary survey data source. All three surveys were conducted during the 2018-2019 school year and the 2019 summer school session by a mix of school partners.

### ***Secondary survey data***

**Panorama Student Survey.** The Panorama Student Survey is a district-wide survey with questions pertaining to student perceptions of various aspects of teaching and learning, created and implemented by Panorama Education. In 2018, Nutrition Services had the opportunity to add three multiple-choice questions to the Panorama Student Survey about school breakfast. The survey was administered online, and open to all BSD students during a dedicated part of class time. Out of all 14 BSD schools that serve breakfast, only one middle school did not participate in the survey.

**Nutrition Services Survey.** Nutrition Services created the Nutrition Services Survey, and administered it in one BSD high school to the classes of 2020, 2021, and 2022 (who were rising 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> graders at the time of the survey). This survey was conducted online through Google Forms, and given during class time. It included multiple-choice and free-response questions about the school breakfast and school lunch program. Question development was informed by a focus group session with a leadership class from the same high school.

### ***Primary survey data***

**School Breakfast Survey.** The School Breakfast Survey was developed by the project team, including myself, the MPH capstone student, and two Nutrition Services project advisors. The project team conducted the School Breakfast Survey during two summer school lunch periods. At BSD, students are enrolled in summer school for either credit recovery or math acceleration. Summer credit recovery is available for high school students, and summer math acceleration is available for students in grades 4-6. The survey was developed using best practices for surveying adolescents.<sup>51,52</sup> The survey (Appendix A) was one-sided and printed on colored paper. Free-response questions were used to assess student perceptions of school breakfast, and one yes/no question was asked to determine student knowledge regarding free and reduced-price breakfast. The project team was stationed at a table in the cafeteria on two days: once during the elementary/middle school lunch period, and once during the high school lunch period. An announcement was made by a staff member during each lunch period

encouraging students to take the survey. Smoothie samples, pens, and pencils were given as incentives.

### **Data analysis**

Each set of survey data were analyzed independently. All quantitative survey data were analyzed using simple descriptive statistics. When possible, data were compared and analyzed across schools within BSD, at the individual school level, by elementary, middle, and high school level, and by grade level. The open-ended data from both the Nutrition Services Survey and the School Breakfast Survey were analyzed using a general inductive approach to open coding of qualitative data.<sup>53</sup> Codes were developed as main topics were identified from each read-through of individual student survey responses. Every time a new topic was discovered, a new code was added, and each student response could have multiple codes. After reading through all of the responses and establishing a comprehensive code list, all responses were grouped into code categories. In groups, the responses were read again to identify key themes in each code category. The full coded data are available in Appendix B and C.

## **Results**

### **Panorama Student Survey**

Several thousand students responded to each of the three school breakfast questions in the Panorama Student Survey (Table 3).

**Table 3.** Number and percentage\* of Bellevue School District students who answered Panorama Student Survey questions about school breakfast.

<b>Survey question</b>	<b>N (%)</b>
How often do you usually eat breakfast at school?	5,450 (27%)
If you do not eat breakfast at school, why not?	10,440 (52%)
I would have breakfast at school more often, if...	9,959 (50%)

\*Percentages calculated using an estimated total BSD enrollment of 20,000 students.

Among surveyed BSD students, a large majority (85%) usually do not eat school breakfast (Table 4). The most commonly cited reason for not eating school breakfast is eating breakfast at home (38%). Other commonly cited reasons include dislike of cafeteria menu choices (15%), lack of hunger (14%), and inability to arrive at school in time for breakfast (13%). Preferences for potential changes to school breakfast that may increase participation were about evenly split, and included: more quick breakfast options (20%), eating school breakfast with friends (16%), increased ethnic breakfast options (15%), more hot options (15%), breakfast available after the bell (14%), and grab-n-go breakfast options (14%).

**Table 4.** Panorama Student Survey – All Students

Question	# (% total respondents)
How often do you usually eat breakfast at school?	n = 5450
I don't usually eat breakfast at school	4612 (85%)
1 day a week	249 (5%)
2-3 days a week	248 (5%)
4-5 days a week	341 (6%)
If you do not eat breakfast at school, why not? (please check all that are true for you)	n = 10440
eat breakfast at home	3941 (38%)
do not like menu choices in the cafeteria	1515 (15%)
not hungry	1474 (14%)
late to school, not enough time before the bell rings	1323 (13%)
do not like the school cafeteria	1205 (12%)
do not have money	426 (4%)
did not know that breakfast is available in my school	369 (4%)
cafeteria is too far	187 (2%)
I would have breakfast at school more often, if... (please select all that are true for you)	n = 9959
more quick breakfast options were offered (cereal/granola bars, smoothies, yogurt parfait, etc.)	1999 (20%)
my friends/classmates were also eating breakfast at school	1602 (16%)
more ethnic breakfast options were offered (porridge/rice/noodle,soup, piroshky, sopes/gorditas/chilaquiles, naan/paratha, bun/bao)	1459 (15%)



more hot breakfast options were offered	1420 (14%)
breakfast was available after the bell rings	1404 (14%)
I did not have to eat in the cafeteria (grab and go breakfast)	1365 (14%)
breakfast was offered closer to my classroom	710 (7%)

In the five BSD schools with more students with higher financial need (>35% free and reduced-price meal eligibility), more students eat school breakfast compared to the eight schools with less financial need (<35% FRPL eligibility) (Table 5). Furthermore, students in the four highest-need schools report eating lunch at school more frequently than students in the lower-financial need schools. The distribution of reasons for not eating school breakfast was similar across all schools regardless of free and reduced-price eligibility, with eating breakfast at home being the most commonly cited reason among all schools. Preferences for potential changes to school breakfast that may increase participation reflected district-wide trends overall. Schools with more racial/ethnic diversity and higher free and reduced-price eligibility generally had higher percentages of students indicating a desire for more ethnic breakfast options. Across all 13 schools surveyed, 11-18% of students identified wanting more ethnic breakfast options.



	Lake Hills ES	Sherwood Forest ES	Stevenson ES	Ardmore ES	Sammamish HS	Interlake HS	Phantom Lake ES	Newport Heights ES	Odle MS	Enatai ES	Woodridge ES	Newport HS	Bellevue HS
I would have breakfast at school more often, if... (please select all that are true for you)	n = 303	n = 255	n = 277	n = 159	n = 1439	n = 1908	n = 140	n = 544	n = 2012	n = 370	n = 367	n = 25	n = 2160
breakfast was available after the bell rings	41 (14%)	51 (20%)	42 (15%)	26 (16%)	211 (15%)	270 (14%)	16 (11%)	78 (14%)	253 (13%)	55 (15%)	53 (14%)	2 (8%)	306 (14%)
breakfast was offered closer to my classroom	14 (5%)	11 (4%)	23 (8%)	6 (4%)	112 (8%)	149 (8%)	9 (6%)	38 (7%)	151 (8%)	24 (6%)	23 (6%)	2 (8%)	148 (7%)
I did not have to eat in the cafeteria (grab and go breakfast)	43 (14%)	30 (12%)	41 (15%)	24 (15%)	162 (11%)	242 (13%)	21 (15%)	77 (14%)	293 (15%)	52 (14%)	73 (20%)	3 (12%)	304 (14%)
my friends/classmates were also eating breakfast at school	43 (14%)	32 (13%)	49 (18%)	24 (15%)	203 (14%)	257 (13%)	27 (19%)	91 (17%)	329 (16%)	50 (14%)	66 (18%)	4 (16%)	427 (20%)
more hot breakfast options were offered	50 (17%)	37 (15%)	34 (12%)	22 (14%)	237 (16%)	290 (15%)	16 (11%)	75 (14%)	276 (14%)	52 (14%)	37 (10%)	5 (20%)	289 (13%)
more quick breakfast options were offered (cereal/granola bars, smoothies, yogurt parfait, etc.)	57 (19%)	47 (18%)	57 (21%)	31 (19%)	309 (21%)	386 (20%)	30 (21%)	104 (19%)	386 (19%)	80 (22%)	66 (18%)	6 (24%)	440 (20%)
more ethnic breakfast options were offered (porridge/rice/noodle, soup, piroshky, sopes/gorditas/chila quiles, naan/paratha, bun/bao)	55 (18%)	47 (18%)	31 (11%)	26 (16%)	205 (14%)	314 (16%)	21 (15%)	81 (15%)	324 (16%)	57 (15%)	49 (13%)	3 (12%)	246 (11%)

In Table 6, schools are arranged in descending free and reduced-price meal eligibility, and racial/ethnic distributions in each school are also displayed. In Table 7, an estimation of potential unmet need in BSD schools is measured by the difference between free and reduced-price meal eligibility and students who eat school breakfast. The results suggest that there may be room for improvement in reaching students who are eligible for free and reduced-price meals and yet are not currently taking advantage of the breakfast program. This is especially apparent in the two schools with the highest free and reduced-price eligibility (Lake Hills Elementary and Sherwood Forest Elementary).

**Table 6.** Free and reduced-price meal eligibility and racial/ethnic distribution by school.

<b>Lake Hills ES</b> 54% F/R 42% Hispanic 25% White 22% Asian 8% Two or more races 4% Black	<b>Sherwood Forest ES</b> 47% F/R 35% Hispanic 28% White 21% Asian 9% Black 7% Two or more races	<b>Stevenson ES</b> 42% F/R 55% Asian 33% Hispanic 6% White 3% Black 3% Two or more races 1% Pacific Islander	<b>Ardmore ES</b> 40% F/R 35% Asian 28% White 25% Hispanic 6% Two or more races 5% Black	<b>Sammamish HS</b> 35% F/R 47% White 21% Asian 18% Hispanic 7% Two or more races 6% Black	<b>Interlake HS</b> 25% F/R 38% Asian 35% White 15% Hispanic 9% Two or more races 4% Black	<b>Phantom Lake ES</b> 24% F/R 47% White 22% Asian 15% Hispanic 14% Two or more races 3% Black	<b>Newport Heights ES</b> 21% F/R 39% Asian 39% White 11% Two or more races 8% Hispanic 4% Black	<b>Odle MS</b> 20% F/R 55% Asian 23% White 12% Hispanic 8% Two or more races 2% Black	<b>Enatai ES</b> 16% F/R 42% White 31% Asian 13% Two or more races 10% Hispanic 4% Black	<b>Woodridge ES</b> 15% F/R 43% Asian 37% White 8% Two or more races 7% Hispanic 3% Black 1% Native American	<b>Newport HS</b> 13% F/R 48% Asian 36% White 8% Two or more races 6% Hispanic 1% Black	<b>Bellevue HS</b> 10% F/R 50% White 32% Asian 10% Two or more races 6% Hispanic 2% Black
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**Table 7.** Potential Unmet Need in Bellevue School District Schools

	Lake Hills ES	Sherwood Forest ES	Stevenson ES	Ardmore ES	Sammamish HS	Interlake HS	Phantom Lake ES	Newport Heights ES	Odle MS	Enatai ES	Woodridge ES	Newport HS	Bellevue HS
Students with F/R Eligibility	54%	47%	42%	40%	35%	25%	24%	13%	20%	16%	15%	13%	10%
Students who Eat School Breakfast ≥ 1 day a week	28%	29%	31%	34%	25%	14%	18%	10%	9%	11%	14%	10%	9%
Potential Need Unmet* (F/R eligible - students who eat school breakfast)	26%	18%	11%	6%	10%	11%	6%	3%	11%	5%	1%	3%	1%

\*This calculation was made with the assumption that the majority of students who eat school breakfast are eligible for free and reduced-price meals. It represents an estimation of students who are eligible for free breakfast, but are not currently taking advantage of the school breakfast program.

Looking at the Panorama Student Survey responses by elementary, middle, and high school categories, student responses are similar across grade levels with a few notable differences (Table 8).

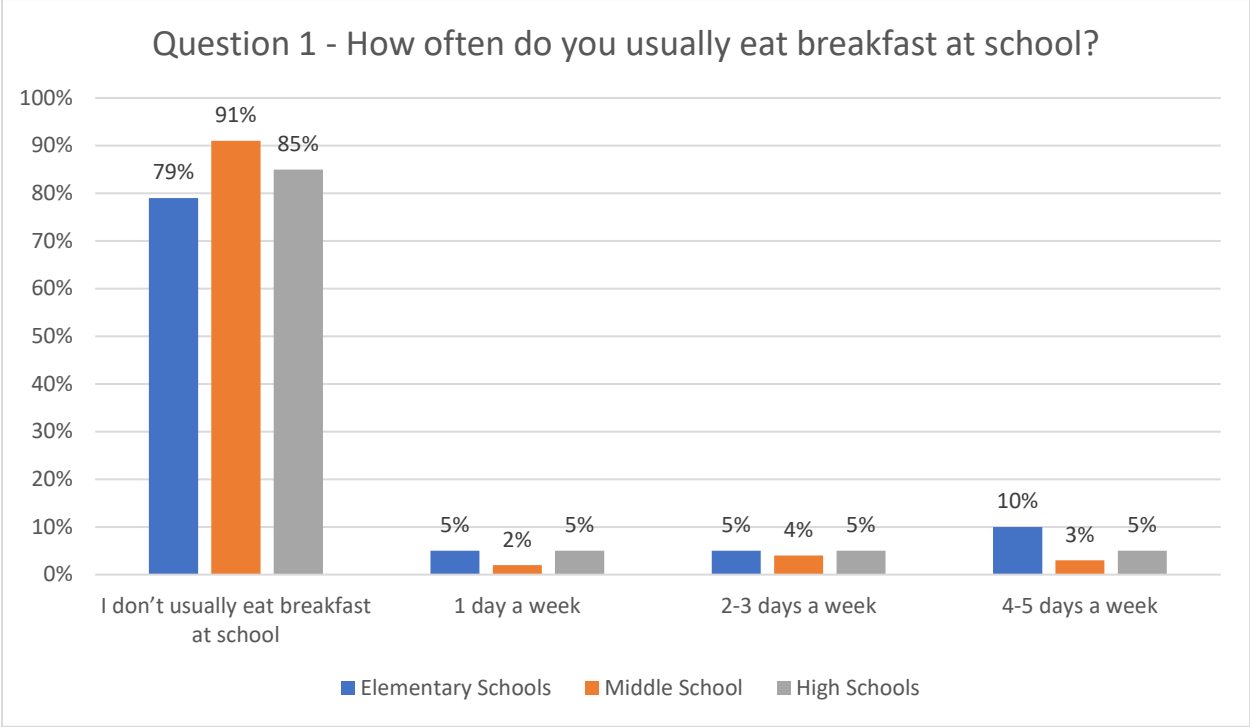
**Table 8.** Panorama Student Survey – All Elementary, Middle, and High Schools Compared

	Elementary Schools (8 schools)	Middle School (1 school)	High Schools (4 schools)
Question	# (% total respondents)	# (% total respondents)	# (% total respondents)
How often do you usually eat breakfast at school?	n = 1457	n = 914	n = 3079
I don't usually eat breakfast at school	1158 (79%)	833 (91%)	2621 (85%)
1 day a week	79 (5%)	22 (2%)	148 (5%)
2-3 days a week	71 (5%)	34 (4%)	143 (5%)
4-5 days a week	149 (10%)	25 (3%)	167 (5%)
If you do not eat breakfast at school, why not? (please check all that are true for you)	n = 2320	n = 1910	n = 6210
eat breakfast at home	1067 (46%)	758 (40%)	2116 (34%)
not hungry	325 (14%)	227 (12%)	922 (15%)
late to school, not enough time before the bell rings	269 (12%)	191 (10%)	863 (14%)
do not like menu choices in the cafeteria	328 (14%)	287 (15%)	900 (15%)
do not like the school cafeteria	171 (7%)	253 (13%)	781 (13%)
cafeteria is too far	34 (1%)	30 (2%)	123 (2%)
do not have money	66 (3%)	64 (3%)	296 (5%)
did not know that breakfast is available in my school	60 (3%)	100 (5%)	266 (4%)
I would have breakfast at school more often, if... (please select all that are true for you)	n = 2415	n = 2012	n = 5532

breakfast was available after the bell rings	362 (15%)	253 (13%)	789 (14%)
breakfast was offered closer to my classroom	148 (6%)	151 (8%)	411 (7%)
I did not have to eat in the cafeteria (grab and go breakfast)	361 (15%)	293 (15%)	711 (13%)
my friends/classmates were also eating breakfast at school	382 (16%)	329 (16%)	891 (16%)
more hot breakfast options were offered	323 (13%)	276 (14%)	821 (15%)
more quick breakfast options were offered (cereal/granola bars, smoothies, yogurt parfait, etc.)	472 (20%)	386 (19%)	1141 (21%)
more ethnic breakfast options were offered (porridge/rice/noodle, soup, piroshky, sopes/gorditas/chilaquiles, naan/paratha, bun/bao)	367 (15%)	324 (16%)	768 (14%)

More middle (91%) and high school students (85%) usually don't eat breakfast at school compared to elementary school students (79%) (Figure 6). Accordingly, more elementary school students (10%) eat school breakfast 4-5 days a week compared to the number of middle (3%) or high school students (5%) who eat breakfast 4-5 days a week. These results show that generally, elementary students are eating breakfast more often than middle and high school students.

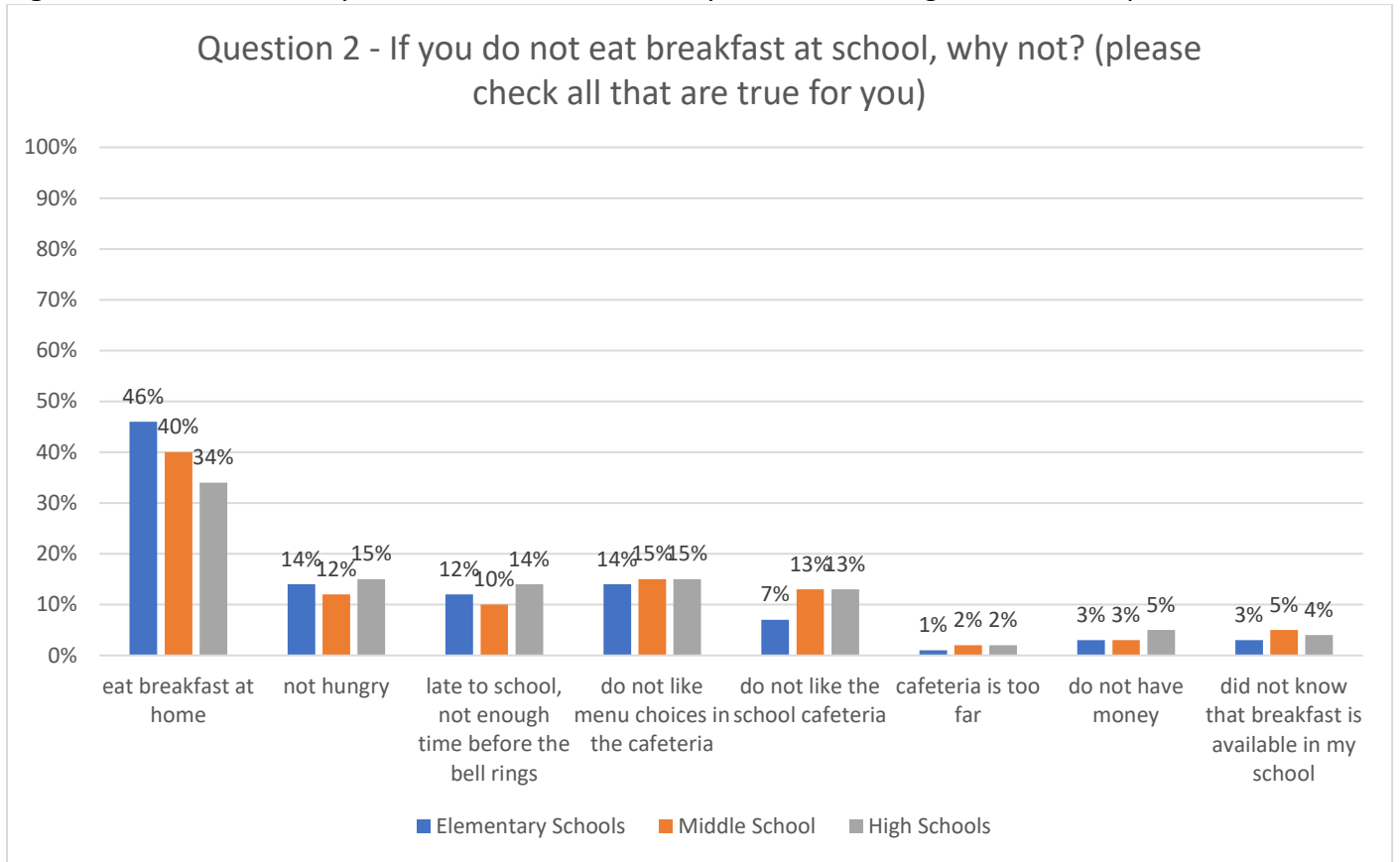
**Figure 6.** Panorama Survey Question 1 – All Elementary, Middle, and High Schools Compared



Interestingly, more elementary school students (46%) eat breakfast at home than middle (40%) or high school (34%) students (Figure 7). Also, more middle (13%) and high school students (13%) do not like the school cafeteria than elementary school students (7%).

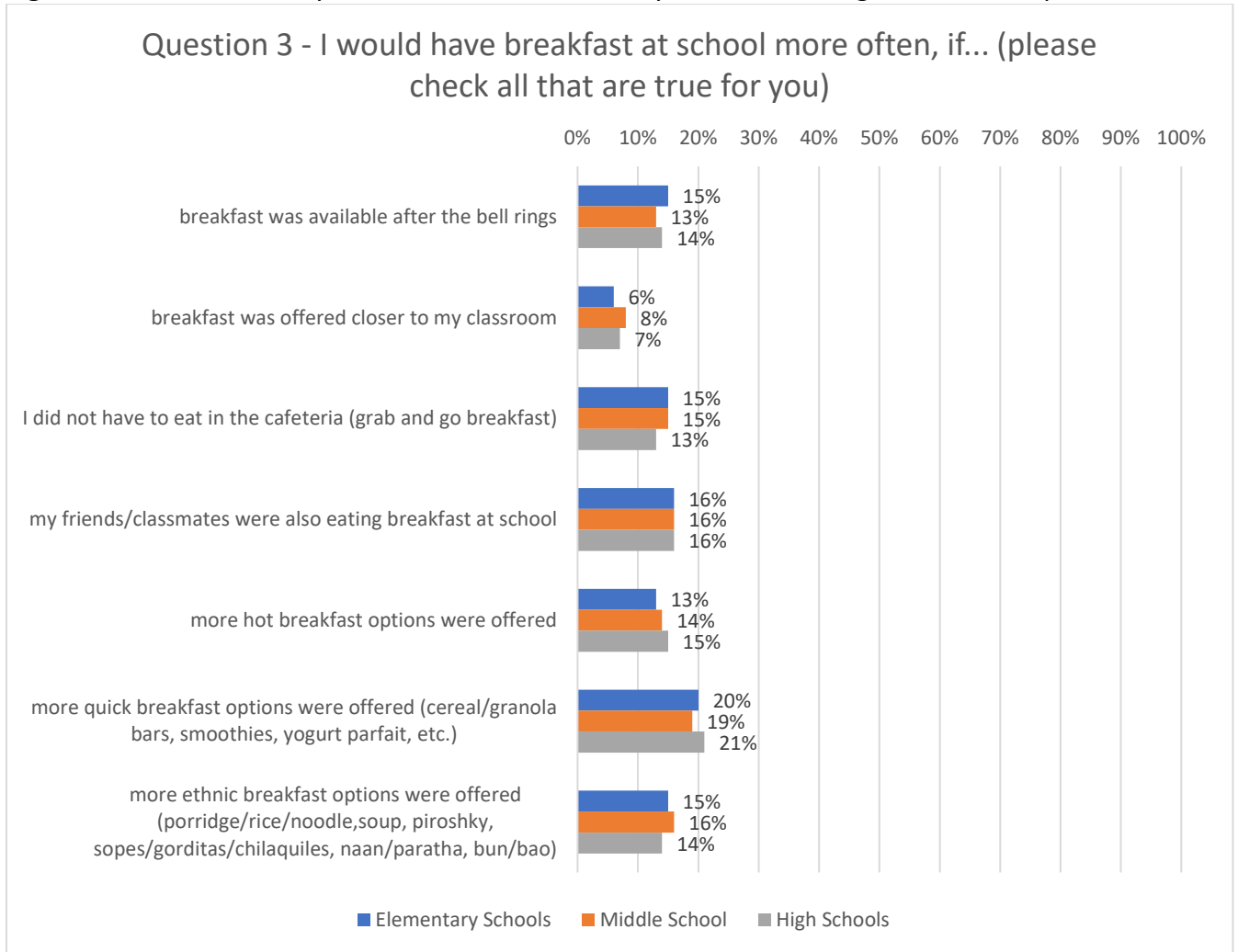


**Figure 7.** Panorama Survey Question 2 – All Elementary, Middle, and High Schools Compared



Preferences for potential changes to the school breakfast program were similar across grade levels (Figure 8).

**Figure 8.** Panorama Survey Question 3 – All Elementary, Middle, and High Schools Compared



### Nutrition Services Survey

In response to the question, “Do you eat breakfast at school?” 316 students from the class of 2020 responded, 375 students from the class of 2021, and 367 from the class of 2022. This question received the most responses on the survey. Overall, responses to the Nutrition Services survey (Table 9) reflected district-level student responses to the Panorama Student Survey. One interesting trend, however, was that substantially more students from the class of 2022 (16%) were unaware that breakfast is available at their school compared to students from the class of 2021 (5%) and 2020 (3%). Reflective of national trends, far more students in all classes report eating school lunch (class of 2020: 58%, class of 2021: 59%, class of 2022: 64%)

than school breakfast (class of 2020: 7%, class of 2021: 3%, class of 2022: 2%). Fifty percent or more of students reported a preference for receiving information on school meals through email (class of 2020: 60%, class of 2021: 66%, class of 2022: 52%) or Instagram (class of 2020: 56%, class of 2021: 51%, class of 2022: 50%). Some students also reported a preference for information in the form of a flyer or poster (class of 2020: 40%, class of 2021: 34%, class of 2022: 30%).

**Table 9.** Deep Dive into One High School Meal Program

	<b>Class of 2022</b>	<b>Class of 2021</b>	<b>Class of 2020</b>
<b>Question</b>	<b># (% total respondents)</b>	<b># (% total respondents)</b>	<b># (% total respondents)</b>
Do you eat breakfast at school?	n = 367	n = 375	n = 316
Yes	8 (2%)	13 (3%)	22 (7%)
No	359 (98%)	362 (97%)	294 (93%)
If you answered yes: how many days per week do you eat breakfast at school?	n = 96	n = 85	n = 112
less than one day per week - a few days per month, or only occasionally	73 (76%)	65 (76%)	89 (79%)
1 day per week	2 (2%)	6 (7%)	7 (6%)
2-3 days per week	3 (3%)	6 (7%)	5 (4%)
4-5 days per week	18 (19%)	8 (9%)	11 (10%)
If you do not eat breakfast at school, why not? You may select more than one.	n = 326	n = 328	n = 278
eat breakfast at home	256 (79%)	251 (77%)	209 (75%)
not hungry	71 (22%)	56 (17%)	55 (20%)
late to school, not enough time before the bell rings	67 (21%)	64 (20%)	65 (23%)
dislike menu choices in the cafeteria	50 (15%)	54 (16%)	64 (23%)
dislike the school cafeteria	47 (14%)	48 (15%)	47 (17%)
cafeteria is too far to go	15 (5%)	8 (2%)	8 (3%)
don't have money	26 (8%)	13 (4%)	19 (7%)

did not know breakfast was available at my school	52 (16%)	18 (5%)	7 (3%)
I would have breakfast more often if (you can select more than one).	n = 231	n = 218	n = 133
breakfast available after the bell rings	72 (31%)	83 (38%)	54 (41%)
breakfast offered closer to my classroom	35 (15%)	29 (13%)	22 (17%)
I don't have to eat in the cafeteria (grab and go breakfast)	86 (37%)	69 (32%)	43 (32%)
my friend/classmates are also eating breakfast at school	71 (31%)	51 (23%)	35 (26%)
more hot breakfast options are offered	58 (25%)	58 (27%)	43 (32%)
more quick breakfast options are offered (cereal/granola bars/smoothies/yogurt parfait, etc.)	80 (35%)	78 (36%)	50 (38%)
more ethnic breakfast options are offered (porridge/rice/noodle, soup, piroshky, sopes/gorditas/chilaquiles, naan/paratha, bun/bao)	50 (22%)	50 (23%)	47 (35%)
Other (please specify)	49 (21%)	26 (12%)	37 (28%)
Do you eat lunch at school?	n = 330	n = 335	n = 280
Yes	210 (64%)	199 (59%)	163 (58%)
No	120 (36%)	136 (41%)	117 (42%)
If you answered yes, how many days per week do you eat lunch at school?	n = 237	n = 231	n = 201
less than once a month	24 (10%)	31 (13%)	35 (17%)
once a month	8 (3%)	8 (3%)	7 (3%)
2-3 times per month	11 (5%)	9 (4%)	14 (7%)
1 day per week	23 (10%)	21 (9%)	18 (9%)
2-3 days per week	36 (15%)	31 (13%)	33 (16%)

4-5 days per week	135 (57%)	131 (57%)	94 (47%)
If you do not eat lunch at school, please choose the top 3 things that might encourage you to eat school lunch?	n = 193	n = 201	n = 178
shorter wait in line	110 (57%)	113 (56%)	100 (56%)
enough food to fill me up	55 (28%)	62 (31%)	57 (32%)
more grab and go type foods	43 (22%)	50 (25%)	37 (21%)
more customizable menu options (ex. choice between meat and vegetarian)	44 (23%)	46 (23%)	41 (23%)
fresher looking food	98 (51%)	97 (48%)	102 (57%)
better presentation of food	65 (34%)	62 (31%)	57 (32%)
food that doesn't run out before I get to the front of the line	46 (24%)	60 (30%)	50 (28%)
knowing what food is being offered in advance	64 (33%)	65 (32%)	42 (24%)
my friends/classmates also eating lunch at school	26 (13%)	27 (13%)	29 (16%)
What information sources would you be likely to check or pay attention to, in order to hear/see information on school meals?	n = 254	n = 232	n = 186
email (daily bulletin, etc.)	132 (52%)	152 (66%)	111 (60%)
Facebook (BSD)	9 (4%)	6 (3%)	13 (7%)
Instagram (Class or ASB)	128 (50%)	119 (51%)	105 (56%)
flyer/poster in the school building	77 (30%)	80 (34%)	74 (40%)
printed materials	30 (12%)	35 (15%)	30 (16%)
word of mouth	51 (20%)	52 (22%)	47 (25%)
Other (please specify)	27 (11%)	12 (5%)	6 (3%)

In addition to multiple-choice questions, the Nutrition Services survey also included open-ended questions (Appendix B). There were 134 responses from the class of 2020, 146 from the class of 2021, and 181 from the class of 2022. Most student responses identified

specific items that they liked, or ways that they would like to see the menus improved. Many students identified the breakfast sandwich and banana bread as favorite current menu items. Student menu suggestions included omelets and muffins, and more culturally diverse options, such as baos and soy milk. Some students expressed desire for healthier and more flavorful options, and others asked for more vegetarian and gluten free options. Several students noted the need for increased seating in the cafeteria, and some thought that the cafeteria lines were too long. A few students commented that they thought school food was too expensive and served in too small of portion sizes (one student specifically mentioned wanting more slices of pizza for less money). A few others said that time, convenience, and hunger were limiting factors for eating school breakfast in the morning.

### School Breakfast Survey

One hundred-twenty-four students responded to the School Breakfast Survey (Appendix C). The 124 survey respondents included one 4<sup>th</sup> grader, 16 5<sup>th</sup> graders, 61 6<sup>th</sup> graders, 17 7<sup>th</sup> graders, three 8<sup>th</sup> graders, six 10<sup>th</sup> graders, four 11<sup>th</sup> graders, and five 12<sup>th</sup> graders. Eleven students did not indicate their grade level.

#### ***Student Likes***

Many students commented on their favorite menu items—juice was especially popular, and other favored items included cereal, granola, yogurt, cinnamon crumble, yogurt parfait, and more (for full list, see Appendix C). Many students also commented that they like having both hot and cold menu items available, and that food is generally served at appropriate temperatures. Several students noted that they like free breakfast, and a few students noted that school breakfast is convenient and affords them the chance to eat and have energy before the start of the day.

#### ***Student Dislikes***

Several students said that they do not like certain qualities of the food. Specifically, some students said that they would prefer the berries if they were not frozen, they think the breakfast food is “soggy,” and they prefer fresh over packaged food. Some students said they would like to be able to get more food at breakfast, and others said they ended wasting

required components of breakfast. Some said they thought breakfast was offered too early in the morning. A few students commented that the breakfast period is too short, and a few students commented that the lines are too long.

### ***Mixed Opinions***

Student opinions on breakfast food variety, price, and quantity are mixed.

### ***Student Suggestions***

Some students suggested adding items to the breakfast menu. These items included different varieties of fruit, the smoothie that was sampled as a survey incentive, fruit cups, and soup. Desire for increased accommodation of dietary preferences was noted, as well as inclusion of more culturally diverse and healthy options. Two students suggested reducing prices or making breakfast free.

### ***Other Student Responses***

One student said they are not hungry when breakfast is offered, and another student said that “normal people” eat breakfast at home. To the question, “Did you know that if a student qualifies for free or reduced-price lunch, then they qualify for free breakfast?” 64 students answered yes, and 60 answered no. Some students’ write-in answers additionally suggested a lack of knowledge about when school breakfast is served and how to obtain it (“Because I don’t go to school so early, Also, when is it?” – respondent #36, 5<sup>th</sup> grade; “More publicity about the breakfast since not everyone knows about it” – respondent #117, 7<sup>th</sup> grade).

## **Discussion**

Reflective of findings from the literature, BSD students commonly cite lack of time and hunger in the morning, cost, and food quality, as barriers to school breakfast participation. Many students suggest that they would be more willing to eat school breakfast if their friends ate with them. Many students also note menu items that they like, and also suggest items that they would like to see added to school breakfast. A common theme among student survey responses is the desire for more culturally diverse and vegetarian options, as well as options accommodating certain dietary needs, such as gluten-free. Another common theme is the

importance of convenience, and many students like the suggestion for more grab-n-go options. In addition, the summer school survey highlights a lack of knowledge surrounding free and reduced-price eligibility for school breakfast, as well as the existence of stigma related to eating school breakfast. These two observations point out an opportunity to increase positive messaging about the school breakfast program in order to raise awareness and address stigma.

The main strength of these findings is a large number of student respondents. A limitation, however, is the potential lack of generalizability of the responses from the summer school survey, as students surveyed were in summer school for credit recovery or math acceleration, two populations who may represent different free and reduced-price eligibilities and usual participation in the school breakfast program. It was also unclear if some of the students who answered the summer school survey were describing breakfast at their own schools or breakfast at summer school.

Overall, the results from the Panorama Student Survey, Nutrition Services survey, and the summer school survey suggest that implementation of more grab-n-go options available after the bell would address student-identified barriers, including time, hunger, and cafeteria-associated stigma. The results also suggest that inclusion of more culturally diverse breakfast options would be popular among students. Increased advertisement of the fact that breakfast is free to all free and reduced-price eligible students may help address the current knowledge gap in this area. Increased marketing and advertisement in general of the school breakfast program may also help to foster an environment supportive of school breakfast.

## Chapter VIII: Recommended Strategies to Increase Participation in Bellevue School District Breakfast Program

Strategies to reduce student-perceived barriers and make school breakfast more appealing to students, parents, and school administrators have the potential to increase participation in the BSD school breakfast program. The following strategies were developed by



reconciling best practices from school breakfast literature and student feedback from multiple BSD student surveys.

### **1. Expand second-chance breakfast opportunities after the bell.**

The benefits of second-chance breakfast options, including grab-n-go breakfast, to increase school breakfast participation is strongly supported by the literature and BSD student survey responses.<sup>40,41,42,43,44</sup> Responses from the Panorama Student Survey indicate that students would have breakfast at school more often, if: more quick breakfast options were offered (20%); breakfast was available after the bell (14%); and more grab-n-go options were available (14%). Similarly, responses from the Nutrition Services survey suggested that students do not eat school breakfast due to lack of time in the morning ( $\geq 20\%$ ); and students would eat school breakfast more if breakfast was offered after the bell ( $\geq 31\%$ ), more grab-n-go options were available ( $\geq 32\%$ ), and more quick options were available ( $\geq 35\%$ ). In open-ended questions on the Nutrition Services survey, some students also noted that convenience was a limiting factor in their likelihood of participating in school breakfast. As the implementation of breakfast vending machines has been very popular in the high schools where they have already been introduced, establishing more breakfast vending machines in more schools that offer breakfast may be a next step in expanding second-chance breakfast. Applying for grants through the Dairy Council may be one possible avenue for securing more funding for vending machines. In addition, collecting data on how breakfast vending machine implementation affects breakfast program participation would provide key information that may further support grant obtainment. Another possible method of second-chance breakfast that has seen success in previous research is a mobile cart stationed at a convenient location during student passing periods.<sup>40,41</sup>

### **2. Explore new culturally diverse breakfast options.**

Students in both the Panorama Student Survey (15%) and Nutrition Services Survey ( $\geq 22\%$ ) indicated that they would eat school breakfast more often if more ethnic breakfast items were available. In the open-ended response section of the Nutrition Services Survey,

students specifically suggested the inclusion of baos and soy milk on the breakfast menu. Increasing cultural diversity of breakfast offerings was also suggested on the School Breakfast Survey, and soupy noodle was a suggested item. Comparing school breakfast menus across multiple districts, it is clear that most schools are lacking in culturally diverse options, and there is opportunity to develop creative options to address this void. The School Meals that Rock Facebook group may be a useful source of inspiration regarding this topic.

### **3. Engage school administrators and staff to discuss the importance of school breakfast to student academic success and overall well-being.**

Cited several times throughout the literature, early and consistent communication with administrators, teachers, and staff is key to the sustained success of expanded school breakfast programs.<sup>40,41,42</sup> Staff have emphasized that it is particularly important to communicate any changes to school breakfast to all stakeholders early in the school year.<sup>47</sup> Staff who are passionate about advancing student wellness may be interested in joining school wellness committees, which can serve as the overseeing bodies for school breakfast promotion campaigns, and have been established in previous breakfast program interventions.<sup>40</sup> Previous research has demonstrated that staff can feel a stronger sense of community with students as a result of efforts to increase school breakfast program participation.<sup>47</sup> The Food Research and Action Center has useful resources, including slide decks and template documents, for presenting breakfast after the bell initiatives. Sharing the results of this report may help convince administrators the importance of school breakfast for all students, and especially those who qualify for free and reduced-price meals. The estimation of potential unmet need (Table 7) shows that schools with the highest need may be better able to serve free and reduced-price eligible students if efforts to promote school breakfast and change school breakfast serving models are implemented. Once school administrators are on board with changing school breakfast programs, they may be more willing to make policy changes, such as allowing eating in the hallways or classrooms, that support second-chance breakfast programs.

#### **4. Experiment with new forms of school breakfast program advertisement in order to foster district-wide student support for school breakfast.**

In the Panorama Student Survey, 16% of students expressed that they would eat school breakfast more often if their friends ate school breakfast with them. In the Nutrition Services Survey, ≥23% of students said that eating with their friends would make them more likely to eat school breakfast. These findings suggest that increasing social support for eating breakfast at school may help to increase school breakfast program participation. In order to help create an environment where students are interested and excited about eating school breakfast, different advertisement platforms can be experimented with. On the Nutrition Services Survey, ≥50% of students said they would be most likely to pay attention to information about school meals if it was sent via email or Instagram. As advertisements aimed towards students have previously been in the forms of poster and flyers hung in school cafeterias, using online platforms for advertisement may be worth trying. An important message to advertise to both students and parents is that breakfast is free to all students who qualify for free and reduced-price meals. Forty-eight percent of students on the School Breakfast Survey indicated that they did not know that breakfast is part of the free and reduced-price meal program, suggesting that there is a knowledge gap that needs to be addressed. Other forms of advertisement that have been experimented with in previous research include making announcements at assemblies and student orientations, holding a breakfast kick-off week and taste testing events, and creating a student-developed video advertisement.<sup>41</sup>

#### **5. Participate in future United Way and Dairy Council breakfast challenge events.**

While Nutrition Services has previously participated in the Dairy Council's Start Strong with Breakfast hot chocolate milk campaign, there is further opportunity to participate in Dairy Council and United Way of King County breakfast programs. The Dairy Council's FUTP60 program provides opportunities to apply for funding for a Healthy Eating Play that can aim to increase school breakfast participation. Opportunities to win individual and school-wide

prizes through FUTP60 may also incentivize students to participate in school breakfast and increase peer support for eating breakfast at school. The United Way of King County state-wide breakfast challenge also presents a chance to win prizes and foster excitement for the breakfast program among schools.

## Chapter IX: Summary

The goal of this project was to support BSD Nutrition Services in their efforts to increase school breakfast program participation by reviewing the literature, analyzing BSD student surveys, and proposing actions to take during the current school year and beyond. Increasing school breakfast program participation is an important endeavor. Eating breakfast helps students obtain the nutrients and energy they need to be set up for success at the start of the school day. Several resources that could help increase school breakfast participation at BSD already exist through Nutrition Services, the Dairy Council, and United Way of King County. Findings from the literature reveal support for alternative breakfast serving models where breakfast is served after the bell rings, and BSD student survey responses reflect these findings. Recommended actions for Nutrition Services to take to increase school breakfast participation include: 1) expand second-chance breakfast opportunities after the bell; 2) explore new culturally diverse breakfast options; 3) engage school administrators and staff about the importance of school breakfast to student academic success and overall well-being; 4) experiment with new forms of school breakfast program advertisement in order to foster district-wide support for school breakfast; and 5) participate in future United Way and Dairy Council breakfast challenge events.

# Breakfast Program Survey

Grade level in fall:



If you DO eat school breakfast, what do you like about it? (1-2 sentences please)

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If you DO NOT eat school breakfast, why not? (1-2 sentences please)

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What do you think would make school breakfast better? (1-2 sentences please)

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Did you know that if a student qualifies for free or reduced-price lunch, then they qualify for free breakfast?

Circle:      Yes      No



**\*Bonus:**  
Anything else you want to tell us about breakfast at your school?



Thank You!

## Appendix B

### High School Meal Program Survey Free Response Questions Key Categories and Themes

1059 total survey respondents

461 free response answers coded and analyzed\*

134 responses from class of 2020

146 responses from class of 2021

181 responses from class of 2022

\*Nonsensical/uninformative/joke answers were excluded from coding (example: "asdfjk;" "I don't know;" "[For breakfast I would like] steak, foie gras carbonara.")

#### Questions:

- Answer if you eat breakfast at school - Which of the school breakfast menu item(s) do you like?
- What types of foods/menu items would you like to see offered in the school breakfast?
- I would have breakfast more often if (you can select more than one). [Other \(please specify\)](#)
- Which school lunch menu item(s) do you most like?
- What menu options would you like to see offered in the school cafeteria?
- Any other comments about school lunch and cafeteria.
- What information sources would you be likely to check or pay attention to, in order to hear/see information on school meals? [Other \(please specify\)](#)

**Code: Menu Items** - specific menu items; suggested menu items

(Occurred 394 times)

Key themes and representative quote(s):

- I. Specific school breakfast items are popular with students.
  - a. Breakfast sandwiches were mentioned repeatedly as popular breakfast items.
    - i. "I like the cheese and egg bagel sandwich." – respondent #334, class of 2022
  - b. Other preferred items include juice, milk, banana bread, yogurt, parfait, cereal, pancakes, eggs, waffles, French toast sticks, cinnamon cake, fruit, sausage, and bagels.
  - c. A few students mentioned that they like the corndogs, likely referring to pancake on a stick.
- II. Students suggested varying items for school breakfast.
  - a. Suggestions for school breakfast items included doughnuts, smoothies, toast with toppings, acai bowls, coffee, Costco pastries/muffins, breakfast burritos, omelettes, breakfast bars, sausage and gravy, crepes, hash browns, panini sandwiches, oatmeal and fruit, and fresh fruit juice.
  - b. Some students also suggested including more culturally diverse options, such as Chinese items (bao zi, man tou, steamed buns, dim sum, soy milk, and Chinese doughnuts), and Mexican items.
    - i. "asian food. we always ONLY have american food." – respondent #23, class of 2020
  - c. Some students mentioned wanting to see items already available on the menu (breakfast sandwiches, waffles, and pancakes). This may suggest that students a lack of knowledge regarding menu options, or a desire for different forms of these items.
- III. Specific school lunch items are popular with students.
  - a. Pizza was one of the most preferred lunch menu items. Nachos were also very popular.
  - b. Many students also mentioned that they like the salads offered, including the taco and Caesar salads.
  - c. Other popular items included orange chicken, hot dogs, curly fries, lasagna, cookies, mashed potatoes, pasta, veggie burger, spaghetti, spicy chicken burger, teriyaki, carnitas plate, fish sticks, chicken tenders, hummus plate, chicken alfredo, taco bowl, philly cheesesteak, and General Tso's chicken.
- IV. Students suggested a variety of foods for the lunch menu.
  - a. These included soup, ice cream, fruit salad, pasta, steak, grilled chicken, burritos, onion rings, chicken nuggets, grab and go salads and sandwiches, fish and chips, poutine, sandwich bar, wraps, the Impossible Burger, legumes, and fish.

- b. Specific ethnic foods suggested included Vietnamese fried rice, ramen, pho, sushi, churros, noodles and noodle soup, tacos, udon, miso soup, curry, gorditas, and enfrijoladas.

**Code: Food** - taste/palatability; food condition; nutritional value; temperature; texture; "like/dislike the food," "better food"

(Occurred 82 times)

Key themes and representative quote(s):

- I. Several students commented on taste and freshness.
  - a. "[I would have breakfast more often if] the food was authentic and fresh" – respondent #34, class of 2022
  - b. "sometimes extremely bland, sometimes very tasty" – respondent #123, class of 2020
  - c. "season your vegetables or add something to make them more appetizing" – respondent #243, class of 2022
- II. Several students said they wanted healthier options. One student said they thought the food is already good and healthy.
  - a. "More healthy options, less unhealthy junk food such as pizza and burgers" – respondent #119, class of 2022
  - b. "I always feel unhealthy eating the processed school food" – respondent #287, class of 2020
  - c. "Amazing and healthy" – respondent #101, class of 2022
- III. One student said they wanted more filling food.
  - a. "Food doesn't really fill me up. Usually still hungry after lunch" – respondent #142, class of 2022
- IV. A few students commented on the presentation of the food.
  - a. "school lunch doesn't look the best, making me not want to eat it" – respondent #320, class of 2022

**Code: Inclusivity** - special dietary needs/preferences (vegan/vegetarian, etc.); variety of cultural cuisines

(Occurred 39 times)

Key themes and representative quote(s):

- I. Several students mentioned wanting to see more vegan/vegetarian options on the menu.



- a. “More meatless options, such as having a meat-free daily special.” – respondent #163, class of 2021
- II. Many students also expressed desire for more culturally diverse options.
  - a. Mexican, Chinese, Korean, and Japanese food were mentioned several times. Chinese food, or “Asian food” was a popular suggestion. Mongolian and Danish food were also suggested.
- III. A few students said they wanted to see more dietary restrictions accommodated for.
  - a. “[I would have breakfast more often if] available for more dietary restrictions” – respondent #204, class of 2020
  - b. “GLUTEN FREE OPTIONS PLEASE!!!!!!!!!!!!!!!!!!!!!!” – respondent #252, class of 2021
  - c. “more chicken or fish options for those who cannot eat beef or pork” – respondent #276, class of 2021
  - d. “I can't really eat in the cafeteria as I have Chron's disease” – respondent #193, class of 2020

**Code: Communication** - preferred source of communication

(Occurred 28 times)

Key themes and representative quote(s):

- I. Several students expressed a preference for Snapchat as a means to see information about school meals.
- II. A few students suggested posting a physical menu outside of the cafeteria.
- III. A few students suggested including the daily menu in the morning announcements.
- IV. Several others suggested posting menus on the bsd405.org website.
- V. Some students said that they would like to receive information via text message.

**Code: Environment** - school cafeteria environment; aspects of school cafeteria; staff

(Occurred 25 times)

Key themes and representative quote(s):

- I. Some students expressed fondness for the food service staff and other expressed dislike.
  - a. “bruh the newport janitors are amazing give them a raise. the night ones too” – respondent #23, class of 2022

- b. “The server at the pizza side is not kind at all. She acts like you will always run away without paying. And I can see she is always upset through her eyes. This makes me feel really annoying.” – respondent #358, class of 2022
  - c. “I do not understand why a lunch lady stands by the burger line and hands out trays. Might be more efficient for her to be serving food. Additionally, she often addresses students in a disrespectful and informal manner while having very little regard for the other students around her.” – respondent #82, class of 2021
  - d. “The lunch ladies are so nice” – respondent #379, class of 2021
- II. Several said that the cafeteria is crowded.
- a. “The cafeteria is too crowded and not the best lit” -respondent #275, class of 2022
  - b. “The cafeteria is often overcrowded and there aren't also enough places to sit.” – respondent #274, class of 2021
  - c. “We need a bigger lunch room. Many sit on the floor or have to sit outside in the cold because there's not enough seats.” – respondent #221, class of 2020

**Code: Variety** - availability and amount of options to choose from

(Occurred 21 times)

Key themes and representative quote(s):

- I. Several students said that they want to see more variety in school meals. Most students do not specify what kinds of options they would like to see, but some do.
  - a. “Variety Other than just burgers and pizza include other cuisines” – respondent #210, class of 2020
  - b. “More varieties of fruits and vegetables. Maybe try adding vegetable sides that are seasoned or vegetable side dishes so that all of our vegetable options are not just raw.” -respondent #243, class of 2022
  - c. “different dressing for the salad, Italian or something lighter than ranch.” – respondent #187, class of 2020

**Code: Process** - system of obtaining food; lines; trays

(Occurred 20 times)

Key themes and representative quote(s):

- I. Several students commented on the lines.
  - a. “i dont know how you manage it but shorter lines would be great” -respondent #121, class of 2022

- b. "line is way too long, some people just don't eat" – respondent #201, class of 2022
- c. "the line is tooo long, people stand there for the whole lunch period (which is also not very long)" – respondent #55, class of 2021
- d. "food most of the runs out by the time I get in line." – respondent #8, class of 2020

**Code: Price** - cost of menu items

(Occurred 17 times)

Key themes and representative quote(s):

- I. Some students feel that school food is expensive.
  - a. "they serve so little that i normally always need a second lunch but don't get it, because I don't want to use more money" – respondent #209, class of 2022
  - b. "make it less expensive to buy multiple slices of pizza" – respondent #169, class of 2021

**Code: Home** - breakfast and/or lunch is eaten at home

(Occurred 14 times)

Key themes and representative quote(s):

- I. Students site eating breakfast at home or packing a lunch as a reason why they don't eat school meals more often.
  - a. "I would have breakfast at school more often if my dad didn't take the time to make me breakfast." – respondent #108, class of 2022

**Code: Quantity** - serving size of food items; amount of food allowed/required in one meal

(Occurred 14 times)

Key themes and representative quote(s):

- I. Some students feel that the amount served is not enough.
  - a. "please offer greater quantities of food" – respondent #21, class of 2021

- b. “The lady gives me too less lunch every time and it’s not enough to make me feel full” – respondent #228, class of 2020

**Code: Time** - time when breakfast is offered in the morning; time when students get to school; total time period when breakfast is offered

(Occurred 12 times)

Key themes and representative quote(s):

- I. Some students said that they would eat breakfast if school started later.
- II. A few students said they think the lunch period is too short.
- III. Other students said they might eat breakfast at school if they woke up earlier.
- IV. A few students said they would eat breakfast at school if it wasn’t during their class time.
  - a. “time after 0 period” – respondent #233, class of 2021
  - b. “if it wasn’t during my class” – respondent #376, class of 2021

**Code: Convenience** - ease and speed of eating food

(Occurred 6 times)

Key themes and representative quote(s):

- I. A few students suggested adding items to the menu that are easy and fast to eat.

**Code: Hunger** – hunger level

(Occurred 2 times)

Key themes and representative quote(s):

- I. Two students said they would eat breakfast more often at school is they were hungry.

## Appendix C

### Summer School Survey Responses Key Categories and Themes

This survey was conducted at Sammamish High School on July 15-16, 2019 during lunch time.

124 total survey respondents

4<sup>th</sup> grade: 1 (1%)

5<sup>th</sup> grade: 16 (13%)

6<sup>th</sup> grade: 61 (49%)

7<sup>th</sup> grade: 17 (13%)

8<sup>th</sup> grade: 3 (2%)

9<sup>th</sup> grade: 0

10<sup>th</sup> grade: 6 (5%)

11<sup>th</sup> grade: 4 (3%)

12<sup>th</sup> grade: 5 (4%)

No grade listed: 11 (9%) – middle school or elementary school, because survey received on day survey was conducted during middle school lunch session

#### **Question 1: If you DO eat school breakfast, what do you like about it? (1-2 sentences please)**

( 101 respondents, 81% of total respondents)

*\*some students may have been referring to school breakfast at summer school and may not eat school breakfast at their own schools*

*\*\*some students answered both questions 1 and 2, and it is unclear when they were referring to breakfast at their own school or summer school breakfast; these students were counted as answering both questions*

#### **Question 2: If you DO NOT eat school breakfast, why not? (1-2 sentences please)**

(32 respondents, 26% of total respondents)

#### **Question 3: What do you think would make school breakfast better? (1-2 sentences please)**

(117 respondents, 94% of total respondents)

*\*responses including "I don't know/NA/?" not counted*

#### **Question 4: Did you know that if a student qualifies for free or reduced-price lunch, then they qualify for free breakfast? Circle: Yes / No**

(Yes – 64)

(No – 60)

**Question 5: Anything else you want to tell us about breakfast at your school?**

(23 respondents; 19% of total respondents)

*\*"no" answers not counted*

*\*\*"no breakfast at our school" answers not counted*

*\*\*\*some comments (such as "better than expected" or "it tastes gross") may be referring to the sample smoothie incentive offered during the survey*

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**Code: Menu Items** - specific menu items; suggested menu items

(Occurred 73 times)

Key themes and representative quote(s):

- V. Specific items on the menu are popular with students.
  - a. The juices are especially popular breakfast items.
    - i. "Please more orange juice" – respondent #10, 10<sup>th</sup> grade
    - ii. "Juice. I like the juice." – respondent #13, 10<sup>th</sup> grade
    - iii. "I don't really like anything just the juice." – respondent #17, 6<sup>th</sup> grade
    - iv. "I like the juice in the break fast" – respondent #91, no grade recorded
    - v. "I like the apple juice" – respondent #86, 6<sup>th</sup> grade
  - b. Other items mentioned as favorable include the cereal, granola, yogurt, cinnamon crumble, apples, yogurt parfait, chocolate milk, pancake wrapped turkey sausage, banana bread, breakfast burrito, French toast sticks, bagels, cream cheese, and breakfast sandwich.
- VI. Some students suggest adding items to the menu.
  - a. Several students suggest adding more/different types of fruit to the menu (one student suggested tangerines).
  - b. Other students mention that they would like to see the sample smoothie offered during the survey added to the menu.
  - c. One student suggests adding smoothies or fruit cups.
  - d. Eggs, waffles, pancakes, and doughnuts are also suggested.
  - e. Two students mention adding soup/soup noodle to the breakfast menu.
  - f. A few students suggest adding saltier/less sweet foods to the breakfast menu.

**Code: Food** – taste/palatability; food condition; nutritional value; temperature; texture

(Occurred 61 times)

Key themes and representative quote(s):

- I. Many students like having both hot and cold food options at breakfast.
  - i. "There is a variety of foods and there are hot and cold" – respondent #18, 6<sup>th</sup> grade
  - ii. "I like how they keep everything warm/cold." – respondent #78, 5<sup>th</sup> grade
  - iii. "The food tastes great, and the food is always the preferred temp." – respondent #61, 6<sup>th</sup> grade
  - iv. "I like that it is hot and cold." – respondent #62, 6<sup>th</sup> grade
- II. Several students say that they do not like certain qualities of the food.
  - a. Several students do not like the cold/frozen fruit.
    - i. "I usually don't because the fruit is frozen solid" – respondent #13, 10<sup>th</sup> grade
    - ii. "Thaw the Fruits (Raspberries, Blueberry, etc)" – respondent #20, 6<sup>th</sup> grade
    - iii. "Having the berries unfrozen would be delightful." – respondent #50, 6<sup>th</sup> grade
    - iv. "Unfrozen fruit is better than frozen fruit." – respondent #57, 6<sup>th</sup> grade
  - b. Some students say that they think some food items are soggy.
    - i. "Better food and less soggy" – respondent #17, 6<sup>th</sup> grade
    - ii. "less soggy stuff" – respondent #39, 6<sup>th</sup> grade
  - c. A few students say that they prefer fresh food over pre-packaged food
    - i. "If it wasn't pre-packaged and prepared it would be good" – respondent #27, 5<sup>th</sup> grade
    - ii. "I think Fresh Food would make it better rather than Ready-Made Foods." – respondent #58, 6<sup>th</sup> grade
  - d. Many students say they want "better quality food."
    - i. "Better quality food. And more drink variety." – respondent #9, 10<sup>th</sup> grade
    - ii. "Better quality food + ingredients." – respondent #56, 7<sup>th</sup> grade
    - iii. "the quality should be better." – respondent #104, 6<sup>th</sup> grade

**Code: Variety** – availability and amount of options to choose from

(Occurred 49 times)

Key themes and representative quote(s):

- I. Many students like the variety of foods offered at breakfast.
  - i. "I eat it. I like how here is lots of variety in main dishes" – respondent #9, 10<sup>th</sup> grade
  - ii. "I like that there are choices in the school breakfast." – respondent #29, 6<sup>th</sup> grade
  - iii. "They taste great and there are many types of food" – respondent #35, 6<sup>th</sup> grade

- iv. “school breakfast is yummy, and I have options, depending on what I feel like that day.” – respondent #65, 6<sup>th</sup> grade
- II. Several students suggest increasing the variety of foods offered.
  - i. “More options would be nice!” – respondent #12, 11<sup>th</sup> grade
  - ii. “more variety. Healthier” – respondent #35, 6<sup>th</sup> grade
  - iii. “give more new kinds of food.” – respondent #42, 6<sup>th</sup> grade

**Code: Price** – cost of menu items

(Occurred 15 times)

Key themes and representative quote(s):

- I. Many students note that they like free breakfast.
  - i. “I like that it's free” – respondent #26, 6<sup>th</sup> grade
  - ii. “It's easy to get breakfast, and it's free!” – respondent #119, 7<sup>th</sup> grade
- II. Two students suggest reducing prices or making breakfast free.

**Code: Quantity** – serving size of food items; amount of food allowed/required in one meal

(Occurred 14 times)

Key themes and representative quote(s):

- I. Several students comment on the component system of school breakfast.
  - a. Some students want more food allowed at breakfast.
    - i. “More variety and being able to get more stuff” – respondent #59, 6<sup>th</sup> grade
    - ii. “If you can get more food. I always don't feel like it is enough!” – respondent #10, 10<sup>th</sup> grade
    - iii. “If the ceryal had milk and if the corn dog did not count as 2 items” – respondent #114, (no grade recorded)
  - b. Some students want less food required at breakfast.
    - i. “More options :( too much needed to take End up wasting the food. No 3 options” – respondent #47, 6<sup>th</sup> grade
    - ii. “changing the 3 item policy b/c I don't eat that much and it is a waste of food” – respondent #106, 7<sup>th</sup> grade

**Code: Home** – breakfast is eaten at home

(Occurred 10 times)



Key themes and representative quote(s):

- I. Several students do not eat school breakfast because they eat breakfast at home.
  - i. "I already ate. I don't leave the house until I eat. :)" – respondent #69, (no grade recorded)
  - ii. "Because my mom makes better food" – respondent #111, 7<sup>th</sup> grade
  - iii. "I eat breakfast at home since I have the time"- respondent #117, 7<sup>th</sup> grade

**Code: Inclusivity** – special dietary needs/preferences (vegan/vegetarian, etc.); variety of cultural cuisines

(Occurred 9 times)

Key themes and representative quote(s):

- I. Several students suggest increasing options to meet varying dietary and cultural needs/preferences.
  - i. "I think maybe adding Indian and veg options and other options from other cultures for both breakfast and lunch." – respondent #19, 6<sup>th</sup> grade
  - ii. "more vegetarian options" – respondent #100, (no grade recorded)
  - iii. "I don't think you should but sausage in pancakes, because many people are vegetarian" – respondent #110, 5<sup>th</sup> grade
  - iv. "more time less sugary food/less soggy - food that kids will actually love & eat. food from diff. culture?" – respondent #118, 6<sup>th</sup> grade

**Code: Time** – time when breakfast is offered in the morning; time when students get to school; total time period when breakfast is served in the morning

(Occurred 9 times)

Key themes and representative quote(s):

- I. Some students do not eat school breakfast because of when breakfast is offered.
  - a. Some students think breakfast is offered too early.
    - i. "Because I don't have time to wake up early and drive to school to eat" – respondent #27, 5<sup>th</sup> grade
    - ii. "It's too early" -respondent #14, 11<sup>th</sup> grade
  - b. Some students think breakfast is offered too late.
    - i. "Make it earlier in the morning." – respondent #37, 6<sup>th</sup> grade
    - ii. "maybe availability from before 8:30, more variety" – respondent #7, 10<sup>th</sup> grade
- II. Some students do not feel that the breakfast period is long enough.

- i. "If the time to eat was longer." – respondent #119, 7<sup>th</sup> grade
- ii. "If we had a little more food and a little more time." – respondent #123, 7<sup>th</sup> grade

**Code: Process** – system of obtaining food

(Occurred 6 times)

Key themes and representative quote(s):

- I. A few students comment that the lines are too long/slow.
  - i. "Making the line system faster." – respondent #48, 6<sup>th</sup> grade
  - ii. "shorter lines" -respondent #98, 6<sup>th</sup> grade
- II. One student mentions that the trays could be of better quality.

**Code: Convenience** – ease and speed of eating food

(Occurred 5 times)

Key themes and representative quote(s):

- I. Some students like the convenience of school breakfast.
  - i. "I like the two items that are quick and easy to get and eat when in a rush." – respondent #1, 12<sup>th</sup> grade
  - ii. "it is fast, efficient and pretty good" – respondent #102, 6<sup>th</sup> grade
  - iii. "I like it. I think my parents do to because they dont have to make breakfast" – respondent #121, 6<sup>th</sup> grade
- II. One student says that eating breakfast at school is not convenient for them.

**Code: Opportunity** – chance to eat is afforded to breakfast program

(Occurred 5 times)

Key themes and representative quote(s):

- I. School breakfast is recognized as a chance to get energy needed for the day.
  - i. "there is a good variety of food, the food is energising for the day" – respondent 52, 7<sup>th</sup> grade
- II. School breakfast is recognized as a chance to prevent hunger.
  - i. "It helps me avoid hunger. It has good food" – respondent #42, 8<sup>th</sup> grade
- III. School breakfast is recognized as a chance to eat when students may not have that chance otherwise.

- i. "It helps kids get the energy they need when they cant get it" – respondent 80, 7<sup>th</sup> grade
- ii. "the cereal is always really good. And it gives me time to eat." – respondent 8, 12<sup>th</sup> grade

**Code: Knowledge** – questions about where/how/when to get school breakfast; suggestions that others may lack knowledge

(Occurred 3 times)

Key themes and representative quote(s):

- I. Some students do not know when breakfast is available, or think there could be more publicity around school breakfast.
  - i. "Because I don't go to school so early, Also, when is it?" – respondent #36, 5<sup>th</sup> grade
  - ii. "More publicity about the breakfast since not everyone knows about it" – respondent #117, 7<sup>th</sup> grade

**Code: Hunger** – hunger level

(Occurred 1 time)

Key themes and representative quote(s):

- I. One student says that they are not usually hungry when breakfast is offered at school.

**Code: Stigma** – social stigma related to eating school breakfast

(Occurred 1 time)

Key themes and representative quote(s):

- I. One student suggests that eating breakfast at home is the norm.
  - i. "I eat food at home like most normal people." -respondent #11, 12<sup>th</sup> grade

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