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Nutrition Standards in the National School Lunch and School Breakfast Programs; Proposed Rule

DEPARTMENT OF AGRICULTURE

Food and Nutrition Service

7 CFR Parts 210 and 220

[FNS–2007–0038]

RIN 0584–AD59

Nutrition Standards in the National School Lunch and School Breakfast Programs

AGENCY: Food and Nutrition Service, USDA.

ACTION: Proposed rule.

SUMMARY: This rule proposes to revise the meal patterns and nutrition requirements for the National School Lunch Program and the School Breakfast Program to align them with the 2005 "Dietary Guidelines for Americans," as required by the Richard B. Russell National School Lunch Act. The proposed changes are based on recommendations from the National Academies' Institute of Medicine set forth in the report "School Meals: Building Blocks for Healthy Children." This proposed rule would increase the availability of fruits, vegetables, whole grains, and fat-free and low-fat fluid milk in school meals; reduce the levels of sodium and saturated fat in meals; and help meet the nutrition needs of school children within their calorie requirements. Implementation of this proposed rule would result in more nutritious school meals that improve the dietary habits of school children and protect their health.

DATES: To be assured of consideration, written comments must be postmarked on or before April 13, 2011.

ADDRESSES: The Food and Nutrition Service, USDA, invites interested persons to submit comments on this proposed rule. Comments may be submitted through one of the following methods:

- *Preferred method:* Federal eRulemaking Portal at *http://www.regulations.gov.* Follow the online instructions for submitting comments.
- *Mail:* Comments should be addressed to Julie Brewer, Chief, Policy and Program Development Branch, Child Nutrition Division, Food and Nutrition Service, Department of Agriculture, 3101 Park Center Drive, Room 640, Alexandria, Virginia 22302–1594.
- *Hand Delivery or Courier:* Deliver comments to the Food and Nutrition Service, Child Nutrition Division, 3101 Park Center Drive, Room 640, Alexandria, Virginia 22302–1594, during normal business hours of 8:30 a.m.–5 p.m.

All comments submitted in response to this proposed rule will be included in the record and will be made available to the public. Since USDA is anticipating a large volume of comments, we request that commenters submit comments through only one of the methods listed above. Please be advised that the substance of the comments and the identity of the individuals or entities submitting the comments will be subject to public disclosure. FNS will make the comments publicly available on the Internet via *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: William Wagoner or Marisol Benesch, Policy and Program Development Branch, Child Nutrition Division, Food and Nutrition Service at (703) 305–2590.

SUPPLEMENTARY INFORMATION:

I. Overview

The 2005 "Dietary Guidelines for Americans" (referred to as the Dietary Guidelines from here on) recommend that a person's diet supply all of the nutrients needed for growth and development, and emphasize the consumption of a variety of nutrient-dense foods. To align the meals served under the National School Lunch Program (NSLP) and the School Breakfast Program (SBP) with the 2005 Dietary Guidelines, this proposed rule would require schools to offer more fruits, vegetables and whole grains; offer only fat-free or low-fat fluid milk; reduce the sodium content of school meals substantially over time; control saturated fat and calorie levels; and minimize trans fat. These proposed changes, based on the 2009 Institute of Medicine (IOM) report "School Meals: Building Blocks for Healthy Children," are intended to result in school meals that are nutrient-rich and supply appropriate calorie levels. This proposed rule is expected to bring about several positive outcomes:

- Update the NSLP and SBP meal requirements according to the latest nutrition science;
- Increase the availability of key food groups (fruits, vegetables, whole grains, and fat-free and low-fat fluid milk and milk products) in school menus;
- Allow the NSLP and SBP to better meet the nutritional needs of children, improve their eating habits, and safeguard their health;
- Simplify the administration and operation of the NSLP and SBP; and
- Reinforce the nutrition education messages provided by schools.

This proposed rule also alerts the public about possible additional changes to the school meal requirements based on the upcoming 2010 Dietary Guidelines, and invites public comments on how to incorporate those possible changes into the NSLP and SBP. Three areas addressed by the advisory committee for the 2010 Dietary Guidelines that may have significant impact on the meal requirements are sodium, saturated fat, and vegetable subgroups. The "Report of the Dietary Guidelines Advisory Committee on the Dietary Guidelines for Americans, 2010" (which precedes the release of the Dietary Guidelines' policy) recommends:

- Lower saturated fat consumption (<7% of total calories),
- Lower sodium consumption (<1500 mg per day), and
- A new red/orange vegetable subgroup.

Because the 2010 Dietary Guidelines policy was not available to IOM for consideration, USDA has decided to issue this proposed rule and seek public comments on ways to incorporate the above possible recommendations (without including them in the proposed regulatory text). Delaying the many critical updates necessary to align school meals with the 2005 Dietary Guidelines would undermine nationwide efforts to improve the health of school children. Public comments on the areas identified above are requested as part of this proposed rulemaking. USDA will also publish a notice in the **Federal Register** when the 2010 Dietary Guidelines official policy is issued to facilitate comment on how it may impact this proposal.

II. Background

The NSLP was established in 1946 upon enactment of the National School Lunch Act (NSLA), now the Richard B. Russell National School Lunch Act, to safeguard the health and well-being of the nation's children. At that time, nutritional concerns in the United States (U.S.) centered on nutrient deficiencies and issues of under consumption. To facilitate the planning of well-balanced meals in schools across the nation, the U.S. Department of Agriculture (USDA) established meal patterns with minimum food component requirements based on nutrition science at that time. The Type A lunch, designed to provide one-third to one-half of the daily food requirements of a 10- to 12-year-old child, was the primary meal pattern for all children for the first three decades of the lunch program. This meal pattern allowed school foodservice managers to choose from a wide variety of foods, and

served as a tool for teaching children about nutrition and good eating habits.

Over time, the NSLP changed to ensure that children receive adequate nutrition for proper growth and development. The Type A lunch was updated to reflect new knowledge about the nutritional needs of children and their consumption habits. In 1975, the SBP was established as a permanent program. By 1980, USDA phased out the Type A lunch and specified different portion sizes for different age/grade groups of children.

In the late 1980s, scientific evidence showed that diets high in fat, saturated fat, and cholesterol have adverse health consequences. USDA's "School Nutrition Dietary Assessment" (SNDA–I), published in 1993, indicated that the meals served under the NSLP and SBP were effective in delivering micronutrients but exceeded recommended intakes of total fat, saturated fat, cholesterol and sodium. (*See* the SNDA–I report at *http://www.fns.usda.gov/oane/menu/Published/CNP/cnp-archive.htm.*) Consequently, Section 106(b) of the Healthy Meals for Healthy Americans Act of 1994, Public Law 103–448, added section 9(f)(1) to the NSLA, 42 U.S.C. 1758(f)(1), to require that school meals not only provide a percentage of the Recommended Dietary Allowances (RDAs) [1] but are also consistent with the goals of the most recent Dietary Guidelines. In 2004, the NSLA was again amended by Section 103 of the Child Nutrition and WIC Reauthorization Act of 2004, Public Law 108–265, which added Section 9(a)(4), 42 U.S.C. 1758(a)(4), requiring the Secretary to promulgate rules revising nutrition standards, based on the most recent Dietary Guidelines, that reflect specific recommendations, expressed in serving recommendations, for increased consumption of foods and food ingredients offered in school nutrition. The Dietary Guidelines reflect the current science-based consensus on proper nutrition, a vital element in promoting health and preventing chronic disease, and provide the nutritional basis for Federal domestic nutrition assistance programs such as the NSLP and SBP.

In response to section 9(f)(1) of the NSLA, USDA adopted the School Meals Initiative for Healthy Children (SMI), a comprehensive plan to promote the health of school children. On June 13, 1995, USDA issued program regulations (60 FR 31188) that required school meals to reflect the 1990 Dietary Guidelines and established three menu planning options that schools may choose from, including two methods based on computerized nutrient analysis (Nutrient Standard Menu Planning and Assisted Nutrient Standard Menu Planning) and a food-based menu planning system. On May 9, 2000, USDA issued program regulations (65 FR 26904) that further expanded the existing menu planning approaches to the five current options. At present, the five menu planning approaches are:

- The traditional and the enhanced food-based menu planning (FBMP) approaches, which follow specific meal patterns;
- The nutrient standard menu planning and the assisted nutrient standard menu planning (NSMP) [2] approaches, which are based primarily on a computer analysis of the nutrient and energy contributions of planned meals; and
- One alternate menu planning approach that is an individualized modification of either FBMP or NSMP.

Currently, schools using any of the five menu planning approaches must offer lunches and breakfasts that provide one-third and one-fourth, respectively, of the 1989 RDAs. Program regulations require that school meals provide at least minimum calorie and nutrient levels for protein, calcium, iron, vitamin A, and vitamin C. These are key nutrients that promote growth and development and are readily identifiable on the nutrition labels of all food products. In addition, schools must decrease the levels of sodium and cholesterol, increase the amount of dietary fiber, and limit meals to not more than 30 percent of total calories from fat and less than 10 percent of total calories from saturated fat consistent with the 1995 Dietary Guidelines. Compliance with these nutrition standards is determined by averaging nutrients in meals offered over a school week. This allows menu planners flexibility to plan nutritious and appealing meals that vary from day to day, but that provide appropriate levels of nutrients and calories over a five-day school week.

School lunches and breakfasts were not updated when the 2000 Dietary Guidelines were issued because those recommendations did not require significant changes to the school meal patterns.

III. Need To Revise the Nutrition and Meal Requirements

The current nutrition standards and meal requirements for the NSLP and SBP are inconsistent with the 2005 Dietary Guidelines. Further, as noted, section 9(a)(4) of the NSLA was amended in 2004 requiring that meals be consistent with the most recent Dietary Guidelines, so modifications are needed to align school meal patterns with the Dietary Guidelines. The 2005 Dietary Guidelines call for significant changes in dietary habits for persons ages 2 years and older, and emphasize the importance of a nutritious diet to maintain health and reduce the risk of chronic diseases, such as overweight and obesity. New dietary concerns have emerged since the establishment of the NSLP. The overt nutritional deficiencies in children's diets that led to the NSLP's inception have largely been eliminated. In turn, overweight and obesity are now major health concerns affecting children and adolescents. Studies indicate that excess food consumption, poor food choices, and decreased physical activity are contributing to childhood overweight and obesity, and related chronic health conditions. According to Centers for Disease Control and Prevention's 2003–2006 National Health and Nutrition Examination Survey (NHANES) data, almost 32 percent of children 6 to 19 years of age are overweight or obese. NHANES data indicate that 17 percent of children age 6–11 are obese, while 17.6 percent of adolescents age 12–19 are obese. Obese children and adolescents are at risk for health problems during their youth and as adults. They are more likely to have risk factors associated with cardiovascular disease (such as high blood pressure, high cholesterol, and Type 2 diabetes) than other children and adolescents.

A basic premise of the 2005 Dietary Guidelines is that nutrient needs should be met primarily by consuming a variety of nutrient-dense foods from the basic food groups. In comparison with the 2005 Dietary Guidelines, current school menus are not required to offer the recommended quantities of fruits, vegetables (including vegetable subgroups), and whole grains. These foods, along with low-fat fluid milk and milk products, supply many of the key nutrients of concern for children: Calcium, fiber, potassium, magnesium and vitamin E.

[1] The RDAs, developed by the Food and Nutrition Board of the Institute of Medicine, reflect the average daily dietary nutrient intake levels sufficient for meeting the nutrient requirements of nearly all (97 to 98 percent) healthy individuals in particular age and sex groups.

[2] The NSMP approach requires a School Food Authority to conduct a weighted analysis to assess the nutrient profile of the meals selected by students. Weighted analysis gives more weight to nutrients supplied by more frequently selected food items and correspondingly less weight to nutrients supplied by items less frequently selected. This requirement is currently waived until September 30, 2010.

Current regulations also allow schools to offer whole and reduced-fat (2 percent milk fat) fluid milk as part of a reimbursable school lunch or breakfast. Those types of milk may contribute to high saturated fat in school meals. The SNDA–III report issued by USDA in 2007 indicates that less than one-third of school lunches offered in school year 2004–2005 under the current menu planning approaches met the requirement of less than 10 percent of total calories from saturated fat.

SNDA–III also shows that school lunches are high in sodium. This is consistent with IOM's findings. With regard to fiber intake, the IOM report indicates that children's consumption of whole grains is extremely low in comparison with the Dietary Guidelines recommendation that half of all grains consumed are whole grains, which are excellent sources of fiber.

Another reason for updating the school meals is that new applications for dietary planning are available. RDAs, which are currently used as the basis for requirements in the School Meal Programs, are no longer a primary value for planning the diets of groups and individuals. Beginning in 2000, IOM issued the Dietary Reference Intake (DRI) reports providing new guidance for planning dietary intakes for individuals and groups. The DRI reports for vitamins, minerals, energy, and macronutrients provide recommended intake levels aimed at improving long-term health by preventing typical nutritional deficiencies and reducing the risk of chronic disease through nutrition. The DRIs represent a more comprehensive recommendation for appropriate nutrient levels than the former RDAs and are the recommended tool for dietary planning.[3]

In light of the changes in nutrition science and current dietary concerns, USDA is seeking significant improvements in the NSLP and SBP to ensure that these programs continue to meet their goal to safeguard the health of school children. The changes proposed in this rule are necessary to align school lunches and breakfasts with the 2005 Dietary Guidelines and be consistent with the DRIs. Implementation of the proposed changes would amend program regulations in 7 CFR 210 for the NSLP and 7 CFR 220 for the SBP as stated in the regulatory text.

The 2009 IOM report that serves as the basis for the nutritional provisions of this proposed rule provides recommendations for the meals planned for school-aged children only (grades K and above). This rule addresses the proposed meal requirements for school-aged children in § 210.10 and § 220.8 of the regulatory text. However, this proposed rule would retain the current meal requirements for children in preschool (ages 1–2 and 3–4) and infants pending changes to the Child and Adult Care Food Program (CACFP). Consistent with the IOM's selection of a food-based meal pattern for Kindergarten and above, this rule would allow only the traditional FBMP approach to plan meals for preschoolers. This rule allows a school serving meals to school-aged children and preschoolers to use a single menu planning approach to plan meals for all children. The meal requirements for preschoolers are addressed separately in § 210.10(p) and § 220.8(n) of the proposed regulatory text.

IV. IOM Recommendations for Implementing the 2005 Dietary Guidelines

This proposed rule seeks to update the school meals for school-aged children to align them with the 2005 Dietary Guidelines and make them consistent with the DRIs, as described in the IOM final report "School Meals: Building Blocks for Healthy Children," which was published October 20, 2009 (*see* the report at *http://www.nap.edu*). As recommended by IOM, this proposed rule focuses on revising the meal requirements for the NSLP and SBP. The new meal requirements seek to ensure that the meals planned by school foodservice providers and selected by students reflect the food groups emphasized by the 2005 Dietary Guidelines and meet the nutrient targets identified by IOM.

The IOM final report on school meals was issued in response to USDA's request for recommendations to align lunches and breakfasts with the 2005 Dietary Guidelines. Prior to the IOM study, USDA had explored a range of alternatives to implement the 2005 Dietary Guidelines in the School Meal Programs in a scientifically sound and practical manner. Due to the complexity of this task, USDA decided to seek help from IOM. USDA had previously sought IOM's expertise to update the food package for the Special Supplemental Nutrition Program for Women, Infants and Children and that expertise proved extremely valuable.

To conduct a review of the School Meals Programs, IOM assembled a committee of scientists in various disciplines and school foodservice professionals. The committee conducted an independent review and assessment of the nutritional needs of school-aged children in the U.S. using the 2005 Dietary Guidelines and the DRIs. The committee used that scientific review as the basis for recommending revisions to the NSLP and SBP meal requirements.

In the course of the study, IOM analyzed scientific evidence, deliberated in closed sessions, and held open meetings (July 8, 2009 and January 28, 2009) to obtain stakeholders' input. Representatives from many entities provided oral testimony, including nutrition advocates, health professionals, and many others listed in the final IOM report. In addition to the oral testimony, the committee received written comments from numerous stakeholders.

IOM issued two reports during the study. "Nutrition Standards and Meal Requirements for National School Lunch and Breakfast Programs: Phase I, Proposed Approach for Recommending Revisions" was issued December 17, 2008. The Phase I report describes the approach used by the IOM committee to make recommendations for revising the School Meal Programs. The final report "School Meals: Building Blocks for Healthy Children," dated October 20, 2009, provides the scientific basis for this proposed rule. It contains recommendations for meal requirements, nutrient targets, and implementation and monitoring. In addition, the report explains the rationale for each of the committee's recommendations and includes several appendices that provide technical justification. Appendix D of the final report provides a summary of the public comments received in response to the Phase I report.

V. Proposed Meal Requirements for NSLP and SBP

The IOM final report recommends that emphasis be placed on revising the NSLP and SBP meal requirements to align school lunches and breakfasts with the 2005 Dietary Guidelines. The IOM report addresses standards for menu planning and standards for meals as selected by the student.

Standards for Menu Planning

The proposed standards for menu planning improve the school meals' alignment with the 2005 Dietary Guidelines by offering more fruits at breakfast; increasing the amount and variety of vegetables at lunch; offering

[3] The DRIs for vitamins and minerals consist of four reference standards that include the RDAs as well as Estimated Average Requirements (EAR), Adequate Intake levels (AI), and the Tolerable Upper Intake Level (UL). For energy and macronutrients, the DRIs are expressed as Estimated Energy Requirements (EERs) and Acceptable Macronutrient Distribution Ranges (AMDRs), respectively.

more whole-grain rich foods; limiting fluid milk choices to fat-free (unflavored or flavored) and unflavored fluid low-fat milk; establishing minimum and maximum calorie levels for each age/grade group; increasing the emphasis on limiting saturated fat; seeking gradual but major reductions in the sodium content; and minimizing *trans* fat. The intent of these proposed changes is to offer school meals that are nutrient-rich and calorie-appropriate.

In developing its recommendations, IOM set targets for 24 nutrients and other dietary components that serve as a scientific basis for the proposed standards for menu planning. To align the school meals with the Dietary Guidelines, the IOM committee found it necessary to consider a large number of nutrients and replace the concept of nutrition standards with a new concept of "nutrient targets." IOM established nutrient targets for the school meals based on the DRIs.

Compared to the current nutrition standards, the nutrient targets identified by IOM are higher for protein, and selected vitamins and minerals. The recommended nutrient targets were set at 32 percent of the School Meal-Target Median Intake for lunches and at 21.5 percent of the School Meal-Target Median Intake for breakfasts. (These percentages correspond to the means of the values used by IOM for the minimum and maximum calorie levels.) The Target Median Intake method combines information about a population group's nutrient requirements (Estimated Average Requirements or Adequate Intakes) and Tolerable Upper Intake Levels. The selected Target Median Intake distribution aims to minimize predicted prevalence of nutrient inadequacy and excessive intakes. (*See* chapter 4 of the IOM final report for additional information on the development of the nutrient targets.)

Schools would not use these 24 nutrient targets for planning or monitoring menus. Instead, they would follow the food-based meal patterns developed by IOM, as set forth in the following table. Meals that meet the proposed meal patterns and other meal requirements are expected to supply most of the nutrient targets set by IOM.

The proposed meal patterns designed by IOM and set forth in this proposed rule offer more fruits, vegetables, and whole grains consistent with the recommendations of the Dietary Guidelines. As the following table indicates, the proposed meal pattern for breakfast would consist of fruits, grains, meats/meat alternates, and fluid milk. The proposed meal pattern for lunch would consist of fruits, vegetables, grains, meats/meat alternates, and fluid milk.

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	Proposed Breakfast Meal Pattern			Proposed Lunch Meal Pattern		
	Grades K-5	Grades 6-8	Grades 9-12	Grades K-5	Grades 6-8	Grades 9-12
Meal Pattern	**Amount of Food[a] Per Week (Minimum Per Day)**					
Fruits (cups)[b]	5 (1)	5 (1)	5 (1)	2.5 (0.5)	2.5 (0.5)	5 (1)
Vegetables (cups)[bc]	0	0	0	3.75 (0.75)	3.75 (0.75)	5 (1)
Dark green	0	0	0	0.5[d]	0.5[d]	0.5[d]
Orange	0	0	0	0.5[d]	0.5[d]	0.5[d]
Legumes	0	0	0	0.5[d]	0.5[d]	0.5[d]
Starchy	0	0	0	1[e]	1[e]	1[e]
Other	0	0	0	1.25[d]	1.25[d]	2.5[d]
Grains[f] (oz eq)	7-10 (1)	8-10 (1)	9-10 (1)	9-10 (1)	9-10 (1)	12-13 (2)
Meats/Meat Alternates (oz eq)	5 (1)	5 (1)	7-10 (1)	8-10 (1)	9-10 (1)	10-12 (2)
Fluid milk[g] (cups)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Other Specifications: Daily Amount Based on the Average for a 5-Day Week						
Min-max calories (kcal)[hi]	350-500	400-550	450-600	550-650	600-700	750-850
Saturated fat (% of total calories)[h]	< 10	< 10	< 10	< 10	< 10	< 10
Sodium (mg)[j]	≤ 430	≤ 470	≤ 500	≤ 640	≤ 710	≤ 740
Trans fat	Nutrition label or manufacturer specifications must indicate zero grams of trans fat per serving.					

[a]Food items included in each group and subgroup and amount equivalents. Minimum serving is ⅛ cup.
[b]One cup of fruits and vegetables usually provides 2 servings; ¼ cup of dried fruit counts as ½ cup of fruit; 1 cup of leafy greens counts as ½ cup of vegetables. No more than half of the fruit offerings may be in the form of juice. All juice must be 100% full-strength.
[c]For breakfast, ½ cup of non-starchy vegetables may be considered equivalent to ½ cup fruits.
[d]Larger amounts of these vegetables may be served.
[e]A maximum of 1 cup of starchy vegetables may be served per week. Starchy vegetables include white potatoes, corn, green peas, and lima beans.
[f]Upon implementation, at least half of grains must be whole grain-rich. Aiming for a higher proportion of whole grain-rich foods is encouraged. Two years post implementation, all grains must be whole grain-rich.
See http://teamnutrition.usda.gov/Resources/DGfactsheet_grains.pdf
http://www.fns.usda.gov/tn/HealthierUS/HUSSCkit_pp25-35.pdf
[g]Fluid milk must be low-fat (1 percent milk fat or less, unflavored) or fat-free (unflavored or flavored).
[h]The average daily amount for a 5-day school week is not to be less than the minimum or exceed the maximum.
[i]Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium. Foods of minimal nutritional value and fluid milk with fat content greater than 1 percent milk fat are not allowed.
[j]Sodium targets are to be reached 10 years after implementation of the final rule. Intermediate targets have been established to ensure that action to reduce the sodium content of school meals over the 10-year period maintains student participation rates.

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The greatest change in breakfast foods is the increase in fruits, which doubles from the current requirement. In addition, grains increase by nearly 80 percent over current levels, with a shift to whole grains. For lunch, the greatest change is the increase in fruits and vegetables, an increase of nearly four half-cup servings a week. The following tables compare the types and amounts of foods required under the current and the proposed meal patterns for breakfast and lunch.

CHANGES IN MINIMUM AMOUNTS AND TYPES OF FOOD: BREAKFAST

	Current requirement	Proposed requirement
Fruit	½ cup per day	1 cup per day.
Grains and Meat/Meat Alternate	2 grains or 2 meat/meat alternates or 1 of each per day.	1.4–2 grains per day plus: 1–2 meat/meat alternates per day. (Range reflects difference by grade group.)
Whole Grains	Encouraged	At least half of the grains to be whole grain-rich.
Milk	1 cup	1 cup, fat content of milk to be 1% or less.

CHANGES IN MINIMUM AMOUNTS AND TYPES OF FOOD: LUNCH

	Current requirement	Proposed requirement
Fruit and Vegetables	½–1 cup of fruit and vegetables combined per day	¾–1 cup of vegetables plus ½–1 cup of fruit per day.
Vegetables	No specifications as to type of vegetable	Weekly requirement for dark green and orange vegetables and legumes and limits on starchy vegetables.
Meat/Meat Alternate	1.5–3 oz equivalents (daily average over 5-day week).	1.6–2.4 oz equivalents (daily average over 5-day week).
Grains	1.8–3 oz equivalents (daily average over 5-day week).	1.8–2.6 oz equivalents (daily average over 5-day week).
Whole Grains	Encouraged	At least half of the grains to be whole grain-rich.
Milk	1 cup	1 cup, fat content of milk to be 1% or less.

USDA recognizes that these proposed changes are significant and may pose a particular challenge to implement. We solicit comments on how these changes may affect take-up and participation rates.

Menu Planning Approach and Age/Grade Groups

The 2005 Dietary Guidelines stress the importance of increasing the consumption of key food groups: Fruits, vegetables, whole grains, and fat-free/low-fat fluid milk or milk products. Consistent with the Dietary Guidelines' emphasis on food groups, IOM developed a food-based meal pattern for each of the School Meal Programs. This proposed rule would require that all schools follow a food-based menu planning approach to plan school lunches and breakfasts for all children. No alternate menu planning approaches would be allowed.

Currently, approximately 70 percent of schools use the FBMP approach. Using a single FBMP approach would simplify program management, training, and monitoring by State agencies (SAs). It would also give schools a practical and easy tool to plan well-balanced and nutritious meals. More importantly, this change would ensure that all school children participating in the NSLP and SBP nationwide have access to more healthy foods in key food groups that contribute to a nutritious diet and protect health.

Another change proposed in this rule involves the age/grade groups used for menu planning. Today, childhood overweight and obesity are major public health concerns. To avoid excessive calories and provide age-appropriate meals, new age/grade groups recommended by IOM would be established. All schools would be required to use the following age/grade groups to plan lunches and breakfasts:

- Grades K–5 (ages 5–10 years)
- Grades 6–8 (ages 11–13 years)
- Grades 9–12 (ages 14–18 years)

These age/grade groups are consistent with the current age-gender categories used in the DRIs and with widely used school grade configurations. Use of these age/grade groups would enable schools operating under a food-based menu planning system to provide meals that meet the nutrition needs of school children in various grade groups and are conducive to healthy weight.

IOM recognizes that some schools have different grade configurations and numerous logistical problems that may interfere with the reasonable use of the proposed age/grade groups. Those schools would be allowed to use the same breakfast and lunch meal patterns for students in grades K through 8 as food quantity requirements for the proposed age/grade group K–5 and 6–8 are comparable. However, schools choosing to use one meal pattern for students in these two age/grade groups would continue to be responsible for meeting the calorie, saturated fat, and sodium standards for each of the proposed age/grade groups. This would mean meals would have to meet very precise targets for calories and sodium.

For example, a school could offer all students in grade groups K–5 and 6–8 the same breakfast choices for the fruit, meat/meat alternate, and milk components because the quantity requirements are the same. The requirements for the grains component are not the same but they overlap (for grades K–5 is 7–10 oz eq per week, and for grades 6–8 is 8–10 oz eq per week). A school could offer 8–10 oz eq per week to meet the requirements for both grade groups. Similarly, the calorie requirements for grades K–5 (350–500 average calories per week) and grades 6–8 (400–550 average calories per week) overlap. Therefore, a school could offer both grade groups a range of 400–500 average calories to meet the requirement for each grade group. While the saturated fat and trans fat requirement are the same for both grade groups, the school must carefully consider the sodium requirements. The school would have to comply with a standard of <430 mg, which was developed for grades K–5, but would also meet the requirement for students in grades 6–8.

USDA acknowledges that schools offering the SBP may face barriers when grouping students by age/grade group for breakfast service. Children typically participate in the breakfast service as they arrive at school, rather than by grade level. In addition, some schools

provide breakfasts by methods such as "grab-and-go breakfasts" from kiosks. In instances where schools serve K–12 students on the same line, the IOM committee suggests that the SFA work with the SA to find a solution that ensures that basic elements of the meal requirements are maintained: Inclusion of required food components and food subgroups, moderate calorie levels, and an emphasis on reducing saturated fat and sodium. USDA will provide technical assistance to the SAs to assist them with this issue. Schools in these situations have the option to serve breakfast in the classroom to each grade group, use one meal pattern for grades K to 8 that meets the standards for each age/grade group, or work with the SA to find a feasible solution that meets the meal requirements.

Fruits and Vegetables

The proposed food-based meal patterns for the NSLP and SBP were designed by IOM to improve the nutrient density of school meals and the nutrient intake by students, especially with regard to nutrients of concern. The proposed meal patterns offer fruits and vegetables as separate components and increase the quantities of these key food groups to promote children's intake of fiber and other important nutrients such as potassium and magnesium.

To facilitate school's compliance with the fruits requirement, schools would be allowed to offer fruit that is fresh, frozen without sugar, dried, or canned in fruit juice, water, or light syrup. To confer fiber benefits, it is important to meet the fruits component with whole fruit whenever possible. However, schools would be able to offer pasteurized, full-strength (100 percent) fruit juice, as currently defined, to meet up to one-half of the fruits requirement. Products that contain less than 100 percent juice would not be allowed. The volume of products that would be necessary to meet the fruits requirement may be relatively large for consumption by children and can displace the intake of nutrient-rich foods in the meal. Requiring 100 percent fruit juice in the NSLP would be consistent with the current requirements in the SBP and the Child and Adult Care Food Program.

For breakfast, schools would have the option to offer non-starchy vegetables in place of fruits. For some schools, vegetables may be more affordable than whole fruit. For example, schools may add tomatoes and green peppers to a breakfast omelet or a breakfast burrito.

In addition to establishing fruits and vegetables as separate food components in the NSLP, this proposed rule would require that schools offer specific vegetable subgroups at lunch over the school week to encourage variety in children's diets. Schools would be required to offer weekly at lunch at least ½ cup equivalent of each of the following vegetable subgroups: Dark green, orange, and legumes (dry beans). As recommended by IOM, starchy vegetables (*e.g.,* white potatoes, corn, lima beans, and green peas) would be limited to 1 cup per week to encourage students to try new vegetables in place of the familiar starchy ones. In addition, schools would be allowed to offer other vegetables (as defined in Appendix A–2 of the 2005 Dietary Guidelines) over the course of the week as specified in the proposed meal pattern. Schools using canned vegetables would have to select products with low sodium to stay within the proposed sodium limits.

Whole Grains

The Dietary Guidelines recommend that all age groups consume at least half their grains as whole grains.[4] In light of concerns such as whole grain product availability, product labeling, and student acceptability, IOM recommends the following staged approach to align school meals with the Dietary Guidelines' whole grains recommendation:

- Upon implementation of the proposed rule, at least half of the grains servings offered in the NSLP and SBP should be whole grain-rich.[5]
- Within three years post-implementation, menu planning standards should be revised so that the proportion of whole grains to refined grains will exceed 50 percent.

This proposed rule is consistent with IOM's recommended temporary criterion for whole grain-rich foods, which encompasses the HealthierUS School Challenge criteria. However, this rule slightly modifies IOM's suggested timeline to minimize the frequency of changes to menus and vendor requirements. This proposed rule would align the whole grains implementation timeline with the phased-in sodium reductions. Therefore, this proposed rule would implement the IOM whole grains recommendation as follows:

- Upon implementation of the final rule, half of the grains offered during the school week must be whole grain-rich.
- Two years post-implementation of the final rule, all grains offered during the school week must be whole grain-rich.

The IOM report also recommends that the FDA take action to require labeling for the whole grain content of food products. USDA will provide support to FDA to help implement the labeling recommendation. In the interim, the criteria used to identify whole grain-rich foods served in school meals would be established in FNS guidance, and could be revised in policy as more information becomes available on the food label by the voluntary addition of whole grain information by industry or by FDA action to require labeling for the whole grain content of food products. USDA will also work with industry and other stakeholders to ensure that program operators can identify and purchase whole grains.

IOM expects that the availability of whole grain-rich products will increase over time nationwide. At the Federal level, USDA commodity foods (now known as USDA Foods) will continue to expand the list of whole grain products available to schools. USDA Foods now include brown rice, and whole grain tortillas, pancakes, and pasta. In addition, USDA will issue an updated Grains/Breads Instruction and develop practical guidance to help schools incorporate more whole grain-rich products into school menus.

This proposed rule would continue to allow schools the option to meet part of the weekly grains requirement with a grain-based dessert. Up to one serving per day of a grains-based dessert would be allowed as part of the grains component. When offered in moderation, grain-based desserts may present an opportunity to add variety to the grains component, incorporate more whole grains into the menu, and encourage student participation. Schools would need to refer to the Grains/Breads Instruction to identify creditable grain-based desserts.

To accommodate cultural food preferences and due to product availability concerns, current regulations allow schools in outlying areas (American Samoa, Puerto Rico, and the Virgin Islands) to serve a vegetable such as yams, plantains, or sweet potatoes to meet the grains requirement. This proposed rule would

[4] *Whole grains* are (1) grain foods whose grain ingredients are whole grains only (100 percent whole grains), or (2) whole grain ingredients, such as rye flour, and whole wheat flour. (Virginia A. Stallings, Carol West Suitor, and Christine L. Taylor, Editors; Committee on Nutrition Standards for National School Lunch and Breakfast Programs; Institute of Medicine. *School Meals: Building Blocks for Healthy Children*.)

[5] *Whole grain-rich foods* may contain less than 100 percent whole grains but, generally, contain at least 51 percent whole grains. IOM's recommended criterion requires that whole grain-rich foods meet serving size requirements defined in the Grains/Breads Instruction for Child Nutrition Programs, and can be easily identified as containing at least 51 percent whole grains. Please *see* Box 7–1 in the IOM report for details on the recommended temporary criterion for *whole grain-rich foods* (available at: *http://books.nap.edu/openbook.php?record_id=12751&page=124).*

continue to permit this meal pattern exception.

Meats/Meat Alternates

The Dietary Guidelines recommend selecting and preparing lean meat and poultry, or low-fat and fat-free meat alternates, and limiting the intake of saturated fats, *trans* fat, and cholesterol. The meal pattern designed by IOM includes meats and meat alternates (such as beans, cheese, whole eggs, nuts, seeds, peanut butter, other nut or seed butters, and yogurt) and the recommendation to control saturated fat and *trans* fat. To meet this food component as well as the dietary specifications for saturated fat and *trans* fat, schools would have to offer lean meats/meat alternates. The use of processed meats would be discouraged because those available at this time are usually high in sodium. If offered, processed meats would have to be low in fat. USDA guidance and technical assistance materials will emphasize strategies for purchasing, planning, and preparing lean meats/meat alternates.

As currently done, the quantity of meats/meat alternates offered daily could vary if at least a minimum amount (1 ounce) is provided daily and the total offered over the school week meets the weekly component requirement. This proposed rule would also retain the current requirement that all creditable meats/meat alternates be offered in the main dish or as part of the main dish and up to one other food item other than a dessert.

USDA is aware of a growing interest to expand the list of allowable meat alternates to include tofu, a whole soybean food. We recognize that soybean foods are increasingly being incorporated in the American diet as nutrient-dense meat alternatives. This rule is not proposing to credit commercially prepared tofu as an allowable meat alternate at this time. However, USDA is interested in receiving comments from the child nutrition community proposing a methodology that could be used for crediting commercially prepared tofu.

A longstanding concern regarding tofu is the lack of an FDA standard of identity. An FDA standard of identity defines what a given food product is, its name, and the ingredients that must be used or may be used in the manufacture of the food product. Without a standard of identity, USDA cannot assure nutritional consistency across brands and types of tofu in a food-based menu planning approach. Although tofu does not have a standard of identity, the USDA National Nutrient Database for Standard Reference, Release 22 (2009) provides nutrient profiles for different types of tofu.

Other soy-based products are currently allowed as alternate protein products (APP) if they meet the requirements in Appendix A to 7 CFR part 210, and Appendix A to 7 CFR part 220. Examples of allowable APPs include products that are formulated with ingredients such as soy concentrates, soy isolates, soy flours, whey protein concentrate, or casein. Tofu is not an allowable APP because it does not meet the established minimum requirement to consist of at least 18 percent protein by weight when fully hydrated or formulated.

Fluid Milk

As recommended by IOM, only fat-free fluid milk (unflavored or flavored) and unflavored low-fat fluid milk (1 percent milk fat or less) would be allowed in the School Meal Programs in order to reduce the saturated fat and calorie content of school meals. Flavored low-fat fluid milk would not be allowed because it increases both saturated fat and calories. However, flavored fat-free fluid milk would be allowed because calcium is a nutrient of concern for children and the use of flavors to encourage children to drink more fluid milk could help mitigate this problem. USDA anticipates that the proposed calorie maximum would drive schools to select flavored fat-free fluid milk with the lowest sugar content.

This proposed rule would no longer allow schools to offer whole milk or reduced-fat (2 percent milk fat) fluid milk as part of the reimbursable meal. This rule would also remove the existing regulatory requirement that schools offer milk in a variety of fat content. Section 203 of the Healthy, Hunger-Free Act of 2010, which amended the NSLA, requires that schools offer a variety of milk consistent with the Dietary Guidelines recommendations.

Calories, Saturated Fat, Sodium, and Trans Fat

Because the proposed meal pattern alone cannot ensure appropriate amounts of calories, saturated fat, sodium and *trans* fat, IOM recommended specific standards for these dietary components. This proposed rule would implement the IOM-recommended standards for calories, saturated fat, sodium, and *trans* fat as follows:

Calories

When recommending the calorie levels that should be provided by school meals, the IOM committee was mindful of the childhood obesity trend and the food choices available to school children outside of the NSLP and SBP. The committee recommended minimum and maximum calories for lunches and breakfasts based on evidence about children's intakes at meals and snacks. The proposed minimum and maximum calorie levels to be required for each age grade group on average over the course of the week are:

LUNCH—PROPOSED MINIMUM AND MAXIMUM CALORIE LEVELS

Grades K–5	Grades 6–8	Grades 9–12
550–650	600–700	750–850

[a] The average daily amount for a 5-day school week is not to be less than the minimum or exceed the maximum.

[b] Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium.

BREAKFAST—PROPOSED MINIMUM AND MAXIMUM CALORIE LEVELS

Grades K–5	Grades 6–8	Grades 9–12
350–500	400–550	450–600

[a] The average daily amount for a 5-day school week is not to be less than the minimum or exceed the maximum.

[b] Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium.

The intent of this proposed change is not to reduce children's intake of food, but to avoid excessive calories. The meal patterns proposed in this rulemaking would require increased amounts of fruits, vegetables, and whole grains. Combined with calorie maximums, USDA believes that these increased food requirements leave relatively few discretionary calories for fats and added sugars. Therefore, to stay within the calorie ranges specified in this proposed rule, schools would have to offer lean meats/meat alternates, fat-free or low-fat fluid milk, and other nutrient-dense foods, as recommended by the 2005 Dietary Guidelines.

While the 2005 Dietary Guidelines do not recommend discrete limits on added sugars, they do encourage the consumption of foods and beverages low in added sugars.

Saturated Fat

The 2005 Dietary Guidelines continue to recommend that all individuals consume less than 10 percent of total calories from saturated fat. This is the current standard in both the NSLP and SBP and this proposed rule would retain it as recommended by IOM.

Schools have made a recognizable effort to reduce the saturated fat levels of meals. SNDA–III data indicate that, on average, three-quarters of schools offered breakfasts that met the requirement to provide less than 10 percent of total calories from saturated fat. At lunch, however, only one-third of schools offered meals that met this required level.

A variety of food sources contribute to saturated fat levels in school meals; however, fluid milk is a primary contributor. As stated earlier, this proposed rule would no longer allow schools to offer whole fluid milk or reduced-fat fluid milk as part of a reimbursable lunch or breakfast for children ages five and older. To meet the new statutory requirement that schools offer a variety of milk consistent with the Dietary Guidelines (established by the Healthy, Hunger-Free Act of 2010), schools would have to offer students at least two fluid milk options. For example, schools could offer fat-free milk (both unflavored and flavored), or fat-free milk (unflavored and/or flavored) along with low-fat milk (unflavored). By limiting the choices to fat-free and low-fat milk, schools would limit saturated fat in the school meals while maintaining key nutrients for growth and development found in fluid milk.

Sodium

Reducing the sodium content of school meals is one of the key objectives of this proposed rule. Research suggests that modest population-wide reductions in dietary salt could substantially reduce cardiovascular events and medical costs (*see,* for example, Smith-Spangler, 2010; Bibbins-Domingo, 2010). More specifically, a forthcoming study suggests that reducing dietary salt in adolescents could yield substantial health benefits by decreasing the number of teenagers with hypertension and the rates of cardiovascular disease and death as these teenagers reach young and middle age adulthood (Bibbins-Domingo, 2010b).

USDA has encouraged schools to reduce sodium since the implementation of SMI in 1995. According to the SNDA–III study, the average sodium content of school lunches (for all schools) is more than 1400 mg. IOM recommended a gradual but significant reduction in sodium over time and suggested that USDA establish intermediate targets to help schools progress to the final sodium standards developed by the IOM expert committee for each age/grade group. This proposed rule would require that schools meet the final sodium standards established by IOM no later than ten years after the final rule is implemented by reaching intermediate sodium targets as follows:

		Proposed Sodium Reduction: Timeline & Amount			
Age/Grade Group	**Baseline: Current Average Sodium Levels As Offered[1] (mg)**	**Target 1: 2 years from implementation of final rule (mg)**	**Target 2: 4 years from implementation of final rule (mg)**	**Final Target[2]: 10 years from implementation of final rule (mg)**	**% Change (Current Levels vs. Final Targets)**
School Breakfast Program					
K-5	573 (elementary)	≤ 540 (28.4% of UL)	≤ 485 (25.5% of UL)	≤ 430 (22.6% of UL)	-25%
6-8	629 (middle)	≤ 600 (27.3% of UL)	≤ 535 (24.3% of UL)	≤ 470 (21.4% of UL)	-25%
9-12	686 (high)	≤ 640 (27.8% of UL)	≤ 570 (24.8% of UL)	≤ 500 (21.7% of UL)	-27%
School Lunch Program					
K-5	1,377 (elementary)	≤ 1,230 (64.8% of UL)	≤ 935 (49.2% of UL)	≤ 640 (33.7% of UL)	-54%
6-8	1,520 (middle)	≤ 1,360 (61.8% of UL)	≤ 1,035 (47.0% of UL)	≤ 710 (32.3% of UL)	-53%
9-12	1,588 (high)	≤ 1,420 (61.7% of UL)	≤ 1,080 (47.0% of UL)	≤ 740 (32.2% of UL)	-53%

[1]Current Average Sodium Levels as Offered are from the School Nutrition and Dietary Assessment Study-III. Data were collected in the 2004-05 school year.

[2]The IOM final targets are based on the Tolerable Upper Intake Limits (ULs) for sodium, established in the Dietary Reference Intakes (DRI) (IOM, 2004). The sodium ULs for school-aged children are 2,300 mg (ages 14-18), 2,200 mg (ages 9-13), and 1,900 mg (ages 4-8). The final sodium targets represent the UL for each age/grade group multiplied by the percentage of nutrients supplied by each meal (approximately 21.5% for breakfast, 32% for lunch), as recommended by IOM. IOM's recommended final sodium targets for the K-5 age/grade group breakfasts and lunches are slightly higher than 21.5% and 32% 32%, respectively, of the UL because this proposed elementary school group spans part of two DRI age groups (ages 4–8 and 9–13 years).

USDA recognizes that there are barriers to reducing the sodium content of meals to the levels recommended by IOM without having an impact on student acceptance and participation, practicality, and cost. The proposed intermediate sodium targets were developed after carefully reviewing scientific literature, consulting with U.S. and international public health professionals involved in sodium reduction efforts, and applying information from expert presentations by industry representatives at the IOM Strategies to Reduce Sodium Intake information gathering session in March 2009. Findings showed that school menu planners can reduce sodium by approximately 10 percent through menu modification. Industry can reduce sodium in school food products by approximately 20 to 30 percent using current technology. The remaining reduction requires innovation.

Establishing intermediate targets was complicated because two intermediate targets set at 10 percent and 20 percent reductions from baseline levels yield reductions for school breakfasts beyond IOM recommendations (school breakfasts require a sodium reduction of approximately 25 percent). If applied to school breakfasts, this strategy also places a disproportionate responsibility for reduction on school menu planners. Industry reductions and innovation necessary to meet school lunch targets will affect all foods served in all school meals, and the intermediate targets must account for this and distribute reductions required more evenly across the 10-year period. Therefore, simply applying 10 percent and 20 percent reductions to baseline levels was not an ideal way to establish intermediate targets.

Instead, USDA applied the same proportional reductions (20 percent and 40 percent, respectively, for the first and second intermediate targets) to the total amount of sodium reduction required for each age/grade group. This method distributes reductions more evenly across the 10-year period and yields reasonable intermediate targets that align with feasible reductions for menu planners (approximately 10 percent) and industry (approximately 20–30 percent), and sodium reduction efforts currently underway.

Taking baseline measures from SNDA III, intermediate targets were established two years and four years post-implementation to initiate change using current resources:

(1) Two years post implementation of the final rule, schools would need to reduce sodium in school lunches by approximately 5–10 percent from baseline levels (SNDA–III). This is the estimated amount that schools can reduce sodium through menu and recipe modification using currently available foods and technology.

(2) Four years post implementation of the final rule, schools would need to reduce sodium by approximately 15–30 percent from the baseline. This is the estimated amount industry can reduce sodium in foods using currently available technology.

(3) Ten years post implementation of the final rule, school lunches would need to meet the final targets recommended by IOM. This would require schools to reduce sodium in school meals by approximately 25–50 percent from the baseline. A significant amount of time is allotted for this final reduction, which will likely require innovation, such as new technology and/or food products.

These reductions are consistent with public health initiatives aiming to reduce sodium in the nation's food supply over the next 10 years, or a reduction of approximately 5 percent per year. Such reductions are widely supported by the American Public Health Association and by efforts such as New York City's National Sodium Reduction Initiative.

Nearly all schools would need to reduce the sodium content of school meals to meet the proposed intermediate and final sodium targets. The changes necessary will vary by school/district because currently there is no sodium limit for school meals and each school/district will be starting from a different baseline. Schools can use SMI data or review their meals to determine changes needed to meet the sodium targets.

It is important to note that approximately 75 percent of the sodium in foods consumed in the U.S. comes from salt (sodium chloride) added to processed foods. Processed foods and convenience items are often used in the school food service operation to save time and labor. Gradual implementation of the sodium restriction is intended to give schools and industry time to lower the sodium content of the foods used in the school meals.

The availability of high sodium foods in and outside of the School Meal Programs has resulted in a preference for salty foods at a young age. The proposed intermediate standards should help children reduce their salt preference and develop healthier eating habits. However, a simultaneous reduction of sodium levels in foods available outside the NSLP would be important to foster a change in students' taste preference.

USDA plans to develop practical guidance and technical assistance resources to help schools achieve the proposed sodium standards while avoiding a negative impact on student participation. USDA resources would also emphasize strategies for increasing potassium in schools meals. Adequate potassium intake can help offset some of the adverse health effects of high sodium levels.

USDA will continue to make low-sodium USDA Foods available to schools. USDA has targeted specific commodities to be made available at lower sodium levels, including canned items (beef, pork, poultry, salmon, and tuna), chicken fajita strips, and ready-to-eat cereal. Most commodity canned vegetables already meet FDA's requirements for use of the term "healthy," which means that, in addition to meeting other requirements, these foods contain no more than 480 mg sodium per labeled serving. USDA plans to gradually phase-in low sodium canned vegetables for donation to all of the domestic nutrition assistance programs. USDA Foods now offer low sodium canned tomato products and canned dry beans. In school year 2010, the sodium levels in all USDA canned vegetables are being reduced to 140 mg per serving.

While the proposed regulatory requirements discussed above are in line with the 2005 Dietary Guidelines and the IOM final sodium targets, USDA acknowledges further reductions in recommended sodium levels are possible in the upcoming 2010 Dietary Guidelines. The 2010 "Dietary Guidelines Advisory Committee Report" recommends that both children and adults should reduce their sodium intake to 1,500 mg per day (compared to the 2,300 mg per day recommended in the 2005 Guidelines).

USDA is seeking public comment on how to address further reductions in recommended sodium levels, in the event that the 2010 Dietary Guidelines include sodium targets lower than those reflected in this proposed rule. USDA invites public comments on how possible further reductions could be incorporated into the NSLP and SBP, including the timeline for achieving reductions; how intermediate targets, if any, should be established; and the impact that further reductions may have on participation levels, implementation feasibility, and costs.

Tracking Calories, Saturated Fat, and Sodium

Under this proposal, all schools would plan lunches and breakfasts using the food-based meal patterns

developed by IOM. Similar to the current FBMP system, schools would be responsible for offering meals that meet the meal pattern, as well as specific standards for calories, saturated fat, and sodium for each age/grade group on average over the school week. However, this rule would not require that schools conduct a nutrient analysis to determine compliance with the standards for calories, saturated fat, and sodium. SAs would be responsible for monitoring compliance with these three dietary specifications in schools selected for administrative reviews. (Currently, SAs conduct nutrient analysis for FBMP schools to determine the levels of eleven dietary specifications (calories, protein, vitamin A, vitamin C, iron, calcium, total fat, saturated fat, sodium, cholesterol, and dietary fiber). This proposal would support IOM's recommendation to limit and monitor calories, saturated fat, and sodium in school meals without burdening schools or SAs.

Although not required, schools that have the resources to conduct a nutrient analysis would be able to continue to do so to assess how well they are meeting calorie, saturated fat, and sodium standards. SNDA III found that, in school year 2004–2005, about two-thirds of schools were in districts that conducted ongoing nutrient analysis of their menus. This finding suggests that many districts have the capability to conduct nutrient analysis.

USDA intends to develop practical tools to help schools calculate the levels of calories, saturated fat, and sodium in school meals. The SAs are encouraged to develop practical calculation methods and provide technical assistance to schools when they are developing school menus to help align the planned meals with these three dietary specifications.

Trans fat

This proposed rule would require schools to minimize *trans* fat in school meals to be consistent with the 2005 Dietary Guidelines. The IOM report provides a practical method to minimize the *trans* fat content of school meals. To help schools reach the goal of zero grams of trans fat per serving, IOM recommended that schools only be allowed to use food products or ingredients that contain zero grams of *trans* fat per serving, as indicated on the nutrition label (FDA defines zero as less than 0.5 grams per serving) or manufacturer's specifications. Foods that contain minimal amounts of naturally-occurring *trans* fat (such as beef and lamb) would be excluded from this requirement. Schools would also be required to add the *trans* fat specification and request the necessary documentation in their procurement contracts.

If a product or ingredient used to prepare school meals has no nutrition labeling (*e.g.,* institutional products) schools would be responsible for obtaining information, such as manufacturer or nutrition specifications, that confirms that the product contains zero grams of *trans* fat per serving. The *trans* fat information would be examined during an administrative review.

Standards for Meals Selected by the Student (Offer Versus Serve)

To achieve a reasonable balance between the goals of reducing food waste and preserving the nutritional integrity of school meals, the IOM committee recommended standards for meals as selected by the student. The committee formulated two offer versus serve options: A preferred option and a secondary option.

Under IOM's preferred option, a student may decline 1 food item at breakfast but must select 1 fruit or juice. For lunch, the student may decline 2 food items but must select 1 fruit or vegetable.

The secondary option formulated by IOM also requires the student to select 1 fruit or juice at breakfast and 1 fruit or vegetable at lunch but allows the student to decline more food items. Under the secondary option, the student may decline 2 food items at breakfast and 3 food items at lunch.

Although both options formulated by IOM promote the selection of fruits and vegetables, the preferred option is more conducive to preserving the nutritional integrity of the school meal. We are concerned that the secondary option allows the student to decline more food items than the current offer versus serve regulations. Therefore, this proposed rule would adopt IOM's preferred option for offer versus serve with a slight modification that would allow a reimbursable breakfast to include a serving of fruit or a vegetable offered in place of fruit:

- Student may decline 1 food item at breakfast but must select 1 fruit or vegetable.
- Student may decline 2 food items at lunch but must select 1 fruit or vegetable.

This slight modification is consistent with the Dietary Guidelines emphasis on increasing the consumption of fruits and vegetables.

Offer versus serve would be required at the high school level, as is currently the case, and it would continue to be available to middle and elementary schools at the discretion of the SFA or the SA.

Summary of Proposed Meal Requirements

Implementation of the proposed meal requirements (standards for menu planning and standards for meals selected by the student) would affect the following changes in the NSLP and SBP:

On a daily basis:

- Meals offered to each age/grade group would meet the meal pattern designed by IOM;
- Fluid milk offered would be fat-free (unflavored or flavored) or unflavored low-fat (1 percent milk fat or less) and would include variety that is consistent with the Dietary Guidelines;
- Food products and ingredients used to prepare school meals would contain zero grams of *trans* fat per serving (less than 0.5 grams per serving) according to the nutrition labeling or manufacturer's specifications; and
- Meals selected by the students would include at least a fruit or vegetable, and students would not be able to decline more than two food items at lunch and one food item at breakfast.

Over a 5-day school week:

- Average calorie content of the meals offered to each age/grade group would fall within the minimum and maximum calorie levels specified by IOM;
- Average saturated fat content of the meals offered to each age/grade group would be less than 10 percent of total calories; and
- Average sodium content of the meals offered to each age/grade group would meet the intermediate targets established by USDA and not exceed the maximum level specified by IOM ten years post implementation of the final rule.

This proposed rule includes several existing meal requirements that are restated without change in the proposed regulatory language. Such requirements include the provisions on meal choices, lunch periods, meal exceptions and variations, and fluid milk substitutes. In addition, some requirements for specific food components, such as meats/meat alternates, are retained in the proposed regulatory text.

The meal patterns and nutrition standards for preschoolers and infants also remain unchanged; however, only the traditional FBMP approach would be allowed to plan meals for preschoolers. The State agencies would not be required to analyze the menus for preschoolers pending changes to the CACFP regulations.

Proposed Changes in Monitoring Procedures

This proposed rule would establish new procedures for monitoring implementation of, and compliance with, the new meal requirements and the dietary specifications for calories, saturated fat, sodium, and *trans* fat. As recommended by IOM, monitoring would focus on meeting the relevant Dietary Guidelines through the proposed meal requirements. The new monitoring procedures would also allow the opportunity to provide information and technical assistance to school foodservice staff for continuous quality improvement.

Currently, SAs conduct two reviews to ensure compliance with program requirements. The SMI nutrition review assesses the nutritional quality of school meals. The Coordinated Review Effort (CRE) focuses on eligibility certification, meal counting and claiming, and meal elements. This proposed rule would discontinue the SMI reviews under § 210.19 and strengthen CRE administrative reviews under § 210.18 to enable SAs to monitor the quality of school meals and assist schools in continually improving performance. As part of the CRE Performance Standard 2, the SAs would be required to monitor compliance with the meal patterns, including ensuring that sufficient quantities of each component are offered. The SAs would also be responsible for calculating the levels of calories, saturated fat, and sodium for the meals offered by the school(s) selected for review and ensuring that the food products and ingredients used to prepare school meals contain zero grams of *trans* fats. To accomplish this, the following changes are proposed:

(1) *Establish a three-year review cycle*—The IOM report recommends frequent monitoring to assess how well the new meal requirements are being implemented at the local level. This proposed rule would expand the ability of the SAs to monitor the quality of the meals offered at the local level by changing the review cycle from 5 years to 3 years, and by requiring SAs to monitor compliance with the meal pattern and the requirements for calories, saturated fat, sodium, and *trans* fats. More frequent monitoring would also expand opportunities to provide technical assistance and mentoring to local operators as recommended by IOM.

(2) *Establish a two-week review period*—In order to give the SAs a more complete view of the meals offered at the local level, this proposed rule would expand the review period from one to two weeks. SAs would review menu and production records for a two-week period to assess compliance with the meal pattern; conduct a weighted nutrient analysis to determine the average levels of calories, sodium, and saturated fat in the planned meals; and confirm that food products and ingredients used to prepare school meals contain zero grams of *trans* fat.

(3) *Include breakfasts in the CRE review*—This proposed rule would require SAs to review the breakfast meal during the 2-week CRE review. Due to the many important meal requirements that IOM recommended for both the NSLP and the SBP, USDA believes that it is desirable to monitor the quality of breakfasts as part of the CRE review.

In addition, SAs would continue to monitor the serving line and lunches counted at point of service to determine if the meals offered and selected the day of the onsite review contain the required food components and food quantities. If food quantities offered by the reviewed school appear to be insufficient or excessive, SAs would provide technical assistance and guidance, apply corrective action, and follow up to assess improvement in the quality of meals. The on-site visit, the nutrient analysis, and other information obtained from direct observation during the review period would give the SA a comprehensive view of the quality of the school meals and compliance with the meal requirements.

USDA anticipates that the State monitoring activities will focus on technical assistance and corrective action following implementation of the new meal requirements. As currently done, SAs would be required to apply immediate fiscal action if the meals offered are completely missing one of the food components established in the new meal pattern. In addition, SAs would be required to take fiscal action for repeated violations of the vegetable subgroups and milk type requirements when (1) technical assistance has been provided *and* (2) corrective action has not resolved these specific violations. These requirements are easily understood by school food authorities and can be quickly identified by visual inspection without having specialized nutrition knowledge or training. However, because not all schools currently have knowledge or accurate tools to calculate the average levels of calories, saturated fat, sodium and *trans* fat in the meals offered during the week, this proposed rule would give SAs discretion to take fiscal action for such violations, as well as for food quantity and whole grain violations, provided that technical assistance and corrective action have taken place. The SAs would also be required to first use technical assistance and corrective action to address these deficiencies.

Since the new requirements for calories, saturated fat, sodium, and *trans* fat would only apply to the meals for school-aged children, the SAs would not have to conduct a nutrient analysis of the meals offered to preschoolers (ages 1–2 and 3–4) in a school selected for an administrative review pending changes to the CACFP regulations. Likewise, the proposed whole grains and fluid milk requirements would not apply to preschoolers' meals.

Technical Assistance

IOM recommended technical assistance to help school foodservice staff develop and continuously improve menus, order appropriate foods, and control costs while maintaining quality. USDA intends to provide training and develop technical assistance resources to facilitate the transition to the new meal requirements. This would be accomplished by updating USDA menu planning resources; guidance materials on fruits, vegetables, and whole grain foods; the Child Nutrition Database; and requirements for nutrient analysis software. USDA will continue to collaborate with the National Food Service Management Institute to develop and provide appropriate training. In addition, USDA would disseminate information about the new requirements in public forums, such as the School Nutrition Association and American Dietetic Association meetings, and other national, regional and state conferences; and through the USDA Regional nutritionists who work with the School Meal Programs.

Miscellaneous Proposed Changes

USDA is using this opportunity to propose additional program changes that would support IOM's recommendations or enhance the overall school nutrition program.

Identification of a Reimbursable Meal

USDA is proposing to require schools to identify the foods composing the reimbursable meal(s) for the day at or near the beginning of the serving line(s). Students and parents often do not know what food or menu items are included in the NSLP or SBP meal. Identifying the Program meal may avoid higher costs to the students from their unintentional purchase of a la carte foods, rather than the unit-priced school meal. This additional information would promote nutrition education by teaching students what foods are included in a balanced meal. Schools

would have discretion to identify the best way to provide this information on the meal serving line(s).

Crediting

Foods served as part of the School Meal Programs should be wholesome and easily recognized by children as part of a food group that contributes to a healthy diet. To support the Dietary Guidelines' emphasis on whole fruits and vegetables, this proposal would disallow the crediting of any snack-type fruit or vegetable products (such as fruit strips and fruit drops), regardless of their nutrient content, toward the fruits component or the vegetables component. USDA does not currently allow snack-type foods such as potato chips or banana chips to be credited toward meeting the fruits/vegetables requirement; however, certain snack-type fruit products have been allowed to be credited by calculating the whole-fruit equivalency of the processed fruit in the product using the FDA's standards of identity for canned fruit nectars (21 CFR 146.113). The standard of identity for canned fruit nectars, however, has since been removed from the CFR. Therefore, this rationale for allowing certain snack-type fruit products to be credited in the meal pattern is no longer established in regulation.

In addition, this proposal would require that all fruits and vegetables (and their concentrates, purees, and pastes) be credited based on volume as served with two exceptions: (1) Dried whole fruit and dried whole fruit pieces would be credited for twice the volume served; and (2) leafy salad greens would be credited for half the volume served. These exceptions are highlighted in the IOM report and the 2005 Dietary Guidelines. This proposal would specifically change the current practice of crediting tomato paste and puree. Currently tomato paste and puree are credited as a calculated volume based on their whole-food equivalency using the percent natural tomato soluble solids in paste and puree, while other fruit paste and purees (such as blackberries puree) are credited based on actual volume as served. Under this proposal, schools would credit tomato paste and puree based on actual volume as served. Schools would not be allowed to credit a volume of fruit or vegetables that is more than the actual serving size.

Fortification

A basic premise of the Dietary Guidelines is that nutrients should come primarily from the consumption of whole foods that are not highly processed or heavily fortified. Current nutrition science suggests that a variety of factors in whole foods work together to generate health benefits. While certain nutrients in foods have been identified as being linked to specific health benefits, the effects are not always comparable when the nutrient is isolated from the food in which it is naturally present.

This proposed rule seeks to reduce schools' reliance on highly fortified foods. To promote consumption of naturally nutrient-dense foods, such as whole grains, fruits and vegetables, this proposed rule would eliminate the use of formulated grain-fruit products as defined in Appendix A to 7 CFR Part 220. Formulated grain-fruit products are (1) grain-type products that have grain as the primary ingredient, and (2) grain-fruit type products that have fruit as the primary ingredient. Both types of products must have at least 25 percent of their weight derived from grain. These food products typically contain high levels of fortification, rather than naturally occurring nutrients, and are high in sugar and fat. Such products do not support the Dietary Guidelines' recommendation to consume fruits as a separate and important food group. Furthermore, formulated grain-fruit products are no longer necessary in the school meal programs. This product specification was originally adopted in response to the limited access that some schools faced in procuring or storing traditional breakfast foods. Today, schools can procure other breakfast options with similar shelf-life (*e.g.,* ready-to-eat cereals and whole grain or enriched grain products) that would meet the operational needs of the school and the nutrient needs of children.

USDA recognizes that fortification of some foods is an accepted practice to enhance or add nutrients. Often in such cases, fortification is an effective way to preserve nutrients lost during preparation or processing, or to increase the nutrient intake in consumer diets that normally may be lacking the added nutrients. Examples of such foods are enriched grain products, fortified cereals, and fluid milk (with added vitamins A and D). In most other instances, however, the use of highly-fortified food products is inconsistent with the Dietary Guidelines.

Technical Changes to Appendices A and B

This proposed rule would update Appendices A and B to 7 CFR Parts 210 and 220. USDA is proposing to amend Appendix A to Part 220 by removing Formulated Grain-Fruit Products in its entirety for the reasons previously stated in the discussion of Fortification.

Appendix B to Part 210 would be amended by removing the statement that affirms that Appendix B will be updated to exclude individual foods that have been determined to be exempted from the categories of Foods of Minimal Nutritional Value. Although USDA has published Notices in the past to inform the public of exempted foods, Appendix B has not been amended subsequently to reflect these exemptions. A list of these exempted foods is maintained and available to all State agencies participating in the Programs. There have been no changes to the categories of exempted foods and USDA will maintain the requirement to publish a Notice and update the regulations to reflect any changes to the categories.

Implementation of Proposed Changes

Until the final rule is implemented, meal reimbursement will be based on compliance with current program regulations in 7 CFR Part 210 and Part 220. However, schools are strongly encouraged to take steps within current Program regulations to provide meals that are consistent with the 2005 Dietary Guidelines, such as reducing sodium and saturated fat, and increasing the availability of fruits, vegetables, whole grains, and fat-free and low-fat fluid milk in the menus. Team Nutrition has developed practical guidance to help schools provide meals that reflect the Dietary Guidelines. (*See http://teamnutrition.usda.gov/Resources/dgfactsheet_hsm.html.*)

Since the 2005 Dietary Guidelines were issued, USDA has provided technical assistance and guidance to help schools offer meals that reflect the recommendations of the Dietary Guidelines. USDA recognizes that changing children's dietary habits is indeed a challenge for schools. Nutrition education is essential to help children accept new foods, change preferences, and make healthy choices. USDA's Team Nutrition initiative will continue to assist SAs with their nutrition education efforts.

The HealthierUS School Challenge is a voluntary certification initiative that recognizes schools that are providing nutritious food and beverage choices and nutrition education, physical education and opportunities for physical activity. The Challenge criteria help schools move closer to the new meal pattern requirements related to whole grains, fruits, vegetables, and low-fat and fat-free fluid milk. USDA is working with partner organizations and stakeholders to double the number of HealthierUS schools during school year

2010–2011 and to add 1,000 schools per year for two years thereafter.

Team Nutrition and the HealthierUS School Challenge, and our joint efforts with the National Food Service Management Institute, have helped schools move in the right direction. USDA is confident that State and local program operators have made and will continue to make progress to further improve the quality of school meals and the dietary habits of school children.

I. Procedural Matters

Executive Order 12866

This proposed rule has been determined to be economically significant and was reviewed by the Office Management and Budget in conformance with Executive Order 12866.

Regulatory Impact Analysis

As required for all rules that have been designated as significant by the Office of Management and Budget, a Regulatory Impact Analysis (RIA) was developed for this proposed rule and is included in the preamble. The following summarizes the conclusions of the RIA:

Need for action: Section 9(a)(4) of the NSLA, 42 U.S.C. 1758(a)(4), added to the statute in 2004, requires the Secretary of Agriculture to issue regulations that increase the availability of foods recommended by the most recent "Dietary Guidelines for Americans" in the Federal school meals programs. In addition, Section 9(f)(1) of the NSLA, 42 U.S.C. 1758(f)(1), requires schools that participate in the NSLP or SBP to offer lunches and breakfasts that are consistent with the goals of the most recent Dietary Guidelines. This proposed rule implements recommendations of the National Academy of Science's Institute of Medicine (IOM). Under contract to the United States Department of Agriculture (USDA), the IOM proposed changes to NSLP and SBP meal pattern requirements consistent with the 2005 Dietary Guidelines and the IOM's Dietary Reference Intakes.

Benefits: The proposed rule implements recommendations of the IOM that are designed to better align school meal patterns and nutrition standards with the IOM's Dietary Reference Intakes and the goals of the Dietary Guidelines. In developing its recommendations, the IOM sought to address low intakes of fruits, vegetables, and whole grains among school-age children, and excessive intakes of sodium and discretionary calories from solid fats and added sugar. The proposed rule addresses these concerns by increasing the amount of fruit, the amount and the variety of vegetables, and the amount of whole grains offered each week to students who participate in the school meals programs. The rule would also replace higher fat fluid milk with low fat and skim fluid milk in school meals. And it would limit the levels of calories, sodium, and saturated fat in those meals.

The linkage between poor diets and health problems such as childhood obesity are also a matter of particular policy concern, given their significant social costs. One in every three children (31.7%) ages 2–19 is overweight or obese.[6] Along with the effects on our children's health, childhood overweight and obesity imposes substantial economic costs, and the epidemic is associated with an estimated $3 billion in direct medical costs.[7] Perhaps more significantly, obese children and adolescents are more likely to become obese as adults.[8] In 2008, medical spending on adults that was attributed to obesity increased to an estimated $147 billion.[9] In addition, a recent study suggests reducing dietary salt in adolescents could yield substantial health benefits by decreasing the number of teenagers with hypertension and the rates of cardiovascular disease and death as these teenagers reach young and middle age adulthood. Because of the complexity of factors that contribute both to overall food consumption and to obesity, we are not able to define a level of disease or cost reduction that is attributable to the changes in meals expected to result from implementation of the rule.

As the rule is projected to make substantial improvements in meals served to more than half of all school-aged children on an average school day, we judge that the likelihood is reasonable that the benefits of the rule exceed the costs, and that the proposal thus represents a cost-effective means of conforming NSLP and SBP regulations to the statutory requirements for school meals. Beyond these changes a number of qualitative benefits—including alignment between Federal program benefits and national nutrition policy, improved confidence of parents and families in the nutritional quality of school meals, and the contribution that improved school meals can make to the overall school nutrition environment, are expected from the rule.

Costs: FNS estimates that the total costs of compliance with this rule will reach $6.8 billion over the five years ending in FY 2016. Year by year costs in millions, assuming implementation of a final rule at the start of SY 2012–2013 are summarized below.

Costs (millions)	Fiscal year					
	2012	2013	2014	2015	2016	Total
Food Costs	$91.8	$626.5	$704.9	$968.9	$1,028.2	$3,420.4
Labor Costs	89.6	611.4	687.9	945.6	1,003.4	3,337.9
Total	181.3	1,237.9	1,392.8	1,914.5	2,031.7	6,758.2

The increases reflect increased costs to purchase the types of foods required by the proposed rule beyond those required to comply with current program rules—primarily increased fruits, vegetables, and whole grains—as well as increased labor costs due to more on-site food preparation, training for food service professionals, and some additional administrative costs.

Alternatives:

[6] Ogden, C.L., Carroll, M., Curtin, L., Lamb, M., Flegal, K. (2010). Prevalence of High Body Mass Index in U.S. Children and Adolescents 2007–2008. *Journal of American Medical Association, 303(3),* 242–249.

[7] Trasande, L., Chatterjee, S. (2009). Corrigendum: The Impact of Obesity on Health Service Utilization and Costs in Childhood. *Obesity, 17(9).*

[8] Whitaker, R.C., Wright, J.A., Pepe, M.S., Seidel, K.D., Dietz W.H. Predicting obesity in young adulthood from childhood and parental obesity. *N Engl J Med* 1997; 37(13):869–873; Serdula, M.K., Ivery, D., Coates, R.J., Freedman, D.S., Williamson, D.F., Byers, T. Do obese children become obese adults? A review of the literature. *Prev Med* 1993;22:167–177.

[9] Finkelstein, E., Trogdon, J., Cohen J., Dietz, W. (2009). Annual Medical Spending Attributable to Obesity: Payer-And Service-Specific Estimates. *Health Affairs, 28(5).*

In response to NSLA Section 9(a)(4) amended into law in 2004, USDA contracted with IOM to assemble an expert panel to undertake a review of the nutritional needs of children, the recommendations of the Dietary Guidelines, and IOM's Dietary Reference Intakes. USDA asked IOM to develop recommendations for updating NSLP and SBP meal patterns and nutrition requirements based on that review of need and nutrition science, with consideration given to operational feasibility and cost.

The USDA contract with IOM called for the creation of a panel with representatives from the fields of public health, epidemiology, pediatrics, child nutrition and child nutrition behavior, statistics, and economics. The contract also called for representatives with knowledge of cultural differences in food preference and eating habits, experience in menu planning, and experience in managing and operating a school lunch and breakfast program. IOM held workshops at which the panel heard presentations from invited speakers, and solicited public input. The panel also accepted public comment on its planned approach to the project.

The process undertaken by IOM was designed to consider different perspectives and competing priorities. The panel necessarily weighed the merits of alternatives as it developed a preferred option. USDA's commitment was to implement IOM's recommendations where feasible. This commitment is driven by the statutory requirement that schools serve meals that are consistent with the goals of the Dietary Guidelines.

We did not consider alternatives that depart significantly from IOM's recommendations and cannot satisfy our statutory obligation. Nevertheless, the proposed rule makes a few small changes to IOM's recommendations. In addition, the rule contains a handful of provisions that are not addressed by IOM. The RIA provides a discussion of alternatives considered, including a Phase-In Implementation of IOM Recommendations.

Regulatory Flexibility Act

This proposed rule has been reviewed with regard to the requirements of the Regulatory Flexibility Act of 1980 (5 U.S.C. 601–612). Pursuant to that review, it has been determined that this proposed rule would have a significant impact on a substantial number of small entities. The proposed requirements would apply to school districts, which meet the definitions of "small governmental jurisdiction" and "small entity" in the Regulatory Flexibility Act. A Regulatory Flexibility Act analysis is included in the preamble.

Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Under section 202 of the UMRA, USDA generally must prepare a written statement, including a cost/benefit analysis, for proposed and final rules with Federal mandates that may result in expenditures by State, local, or Tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. When such a statement is needed for a rule, section 205 of the UMRA generally requires USDA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, more cost-effective or least burdensome alternative that achieves the objectives of the rule. The Regulatory Impact Analysis conducted by FNS in connection with this proposed rule includes a cost/benefit analysis and explains the options considered to implement the 2005 Dietary Guidelines in the school meal programs.

Prior to developing this proposed rule, FNS sought the assistance of the Institute of Medicine (IOM) of the National Academies to implement the 2005 Dietary Guidelines in the NSLP and SBP in the least burdensome and costly manner. However, this proposed rule contains Federal mandates (under the regulatory provisions of Title II of the UMRA) that could result in costs to State, local, or Tribal governments or to the private sector of $100 million or more in any one year if State and local operators do not develop strategies to absorb the cost increases associated with increasing the availability of fruits, vegetables, and whole grains in the school menu. To meet the proposed requirements in a cost-effective manner, program operators would need to optimize the use of USDA Foods and adopt other cost-savings strategies in various areas of the food service operation, including procurement, menu planning, and meal production. Program operators have flexibility within the Federal requirements to run the School Meal Programs in a manner that fits local circumstances.

Because childhood overweight and obesity are growing public health issues in the United States, schools should take a leadership role in helping students adopt healthy diets. Many schools are already providing more fruits, vegetables and whole grains as part of their efforts to enhance the school nutrition environment. Over 840 schools nationwide have been recognized by FNS as part of the HealthierUS School Challenge (HealthierUS) for improvement in the quality of the meals served and the food choices. HealthierUS schools offer fresh fruits or raw vegetables, whole grain foods, legumes, and low-fat or fat-free fluid milk, and provide students with nutrition education and opportunity for physical activity.

Executive Order 12372

The NSLP is listed in the Catalog of Federal Domestic Assistance under No. 10.555 and the SBP is listed under No. 10.553. For the reasons set forth in the final rule in 7 CFR part 3015, Subpart V and related Notice published at 48 FR 29114, June 24, 1983, this Program is included in the scope of Executive Order 12372, which requires intergovernmental consultation with State and local officials.

Since the NSLP and SBP are State-administered, Federally funded programs, FNS headquarters staff and regional offices have formal and informal discussions with State and local officials on an ongoing basis regarding program requirements and operation. This structure allows FNS to receive regular input which contributes to the development of meaningful and feasible Program requirements.

Federalism Summary Impact Statement

Executive Order 13132 requires Federal agencies to consider the impact of their regulatory actions on State and local governments. Where such actions have federalism implications, agencies are directed to provide a statement for inclusion in the preamble to the regulations describing the agency's considerations in terms of the three categories called for under section (6)(b)(2)(B) of Executive Order 13132.

Prior Consultation With State Officials

Prior to drafting this proposed rule, FNS staff received informal input from various stakeholders while participating in various State, regional, national, and professional conferences. The School Nutrition Association, School Food Industry Roundtable, National Alliance for Nutrition and Activity, Association of State and Territorial Public Health Nutrition Directors, and the Center for Science in the Public Interest shared their views about changes to the school meals in writing. Numerous stakeholders also provided input at the public meetings held by IOM in connection with its school meals study.

Based on its independent research and information gathered from stakeholders, IOM issued recommendations which are the basis for this proposed rule.

Nature of Concerns and the Need To Issue This Rule

State Agencies and school food authorities want to provide the best possible school meals through the NSLP and SBP but are concerned about program costs and increasing program requirements. While FNS is aware of these concerns, section 9(a)(4) and section 9(f)(1) of the National School Lunch Act, 42 U.S.C. 1758(a)(4) and (f)(1), require that school meals reflect the most recent "Dietary Guidelines for Americans" and promote the intake of the food groups recommended by the Dietary Guidelines.

Extent To Which We Meet Those Concerns

FNS sought the assistance of the Institute of Medicine to update the school meals in a practical and sound manner. FNS has considered the impact of this proposed rule on State and local program operators and has attempted to develop a proposal that would implement the 2005 Dietary Guidelines in the most effective and least burdensome manner. This proposed rule would simplify management and operation of the School Meal Programs by establishing a single food-based menu planning approach and the same age/grade groups in the NSLP and SBP, as recommended by the Institute of Medicine. The food-based menu planning system is currently used by approximately 70 percent of program operators. This proposed rule would retain the requirement that school meals meet nutrient requirements on average over the course of the week, and the offer versus serve provision, which helps schools control food cost and minimize food waste. This rule would also retain other existing regulatory provisions to the extent possible.

Executive Order 12988

This rule has been reviewed under Executive Order 12988, "Civil Justice Reform." This rule, when published as a final rule, is intended to have preemptive effect with respect to any State or local laws, regulations or policies which conflict with its provisions. As proposed, the rule would permit State or local agencies operating the National School Lunch and School Breakfast Programs to establish more rigorous nutrition requirements or additional requirements for school meals that are not inconsistent with the nutritional provisions of the rule. Such additional requirements would be permissible as part of an effort by a State or local agency to enhance the school meals and/or the school nutrition environment. To illustrate, State or local agencies would be permitted to establish more restrictive saturated fat and sodium limits. For these components, quantities are stated as maximums (*e.g.,* ≤) and could not be exceeded; however, lesser amounts than the maximum could be served. Likewise, State or local agencies could accelerate implementation of the final sodium targets stated in this proposed rule in an effort to reduce sodium levels in school meals at an earlier date. However, State or local agencies would not, for example, be permitted to decrease the minimum calorie level or increase the maximum calorie level established for each grade group in this proposed rule as that would be inconsistent with the rule's provisions. This rule is not intended to have a retroactive effect. Prior to any judicial challenge to the provisions of this rule or the application of its provisions, all applicable administrative procedures under § 210.18(q) or § 235.11(f) must be exhausted.

Civil Rights Impact Analysis

FNS has reviewed this proposed rule in accordance with USDA Regulation 4300–4, "Civil Rights Impact Analysis," to identify any major civil rights impacts the rule might have on program participants on the basis of age, race, color, national origin, sex or disability. After a careful review of the rule's intent and provisions, FNS has determined that this proposed rule is not expected to affect the participation of protected individuals in the NSLP and SBP. This proposed rule is intended to improve the nutritional quality of school meals and is not expected to limit program access or otherwise adversely impact the protected classes.

Executive Order 13175—Consultation and Coordination With Indian Tribal Governments

USDA will undertake, within 6 months after this rule becomes effective, a series of Tribal consultation sessions to gain input by elected Tribal officials or their designees concerning the impact of this rule on Tribal governments, communities and individuals. These sessions will establish a baseline of consultation for future actions, should any be necessary, regarding this rule. Reports from these sessions for consultation will be made part of the USDA annual reporting on Tribal Consultation and Collaboration. USDA will respond in a timely and meaningful manner to all Tribal government requests for consultation concerning this rule and will provide additional venues, such as webinars and teleconferences, to periodically host collaborative conversations with Tribal leaders and their representatives concerning ways to improve this rule in Indian country.

We are unaware of any current Tribal laws that could be in conflict with the proposed rule. We request that commenters address any concerns in this regard in their responses.

Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (44 U.S.C. Chap. 35; *see* 5 CFR 1320), requires that the Office of Management and Budget (OMB) approve all collections of information by a Federal agency from the public before they can be implemented. Respondents are not required to respond to any collection of information unless it displays a current, valid OMB control number. This is a new collection. The new provisions in this rule, which do increase burden hours, affect the information collection requirements that will be merged into the National School Lunch Program, OMB Control Number #0584–0006, expiration date 5/31/2012. The current collection burden inventory for the National School Lunch Program is 11,806,566 hours. These changes are contingent upon OMB approval under the Paperwork Reduction Act of 1995. When the information collection requirements have been approved, FNS will publish a separate action in the **Federal Register** announcing OMB's approval.

Comments on the information collection in this proposed rule must be received by March 14, 2011.

Send comments to the Office of Information and Regulatory Affairs, OMB, Attention: Desk Officer for FNS, Washington, DC 20503. Please also send a copy of your comments to Lynn Rodgers-Kuperman, Program Analysis and Monitoring Brach, Child Nutrition Division, 3101 Park Center Drive, Alexandria, VA 22302. For further information, or for copies of the information collection requirements, please contact Lynn Rodgers-Kuperman at the address indicated above. Comments are invited on: (1) Whether the proposed collection of information is necessary for the proper performance of the Agency's functions, including whether the information will have practical utility; (2) the accuracy of the Agency's estimate of the proposed information collection burden, including the validity of the methodology and assumptions used; (3)

ways to enhance the quality, utility and clarity of the information to be collected; and (4) ways to minimize the burden of the collection of information on those who are to respond, including use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

All responses to this request for comments will be summarized and included in the request for OMB approval. All comments will also become a matter of public record.

Title: Nutrition Standards in the National School Lunch and School Breakfast Programs.

OMB Number: 0584—NEW.

Expiration Date: Not Yet Determined.

Type of Request: New Collection.

Abstract: This proposed rule would implement the recommendations of the 2005 "Dietary Guidelines for Americans" in the National School Lunch Program (NSLP) and School Breakfast Program (SBP), as required by section 9(a)(4) and section 9(f)(1) of the Richard B. Russell National School Lunch Act, 42 U.S.C. 1758(9)(a) and (f). This rule is based on the final report "School Meals: Building Blocks for Healthy Children," issued by the Institute of Medicine of the National Academies on October 20, 2009 to help FNS implement the 2005 Dietary Guidelines in the NSLP and SBP. This proposed rule would revise the lunch and breakfast meal patterns to increase the availability of fruits, vegetables, whole grains, and fat-free/low-fat fluid milk in the school menu. It would also increase the frequency of administrative reviews by State agencies from the current five-year cycle to a three-year cycle, and change the requirements for these reviews. This rule would impact the reporting and/or recordkeeping burden on school food authorities and State agencies. However, this rule would not increase or decrease the existing burden on local schools participating in the NSLP because they are already required to maintain menu and production records. This proposed rule would require State agencies to examine menu and production records during administrative reviews, and to maintain documentation related to fiscal action.

Those respondents participating in the School Breakfast Program also participate in the National School Lunch Program, thus the burden associated with the School Breakfast Program will be carried in the National School Lunch Program. The average burden per response and the annual burden hours are explained below and summarized in the charts which follow.

Respondents for this Proposed Rule: State Education Agencies (57) and School Food Authorities (6,983).

Estimated Number of Respondents for this Proposed Rule: 7,040.

Estimated Number of Responses per Respondent for this Proposed Rule: 3.87217.

Estimated Total Annual Responses: 27,260.

Estimated Total Annual Burden on Respondents for this Proposed Rule: 75,842.

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ESTIMATED ANNUAL BURDEN FOR 0584-NEW, NATIONAL SCHOOL LUNCH PROGRAM, 7 CFR 210

Reporting						
	Section	Estimated Number of Respondents	Frequency of Response	Average Annual Responses	Average Burden per response	Annual Burden Hours
SA shall verify compliance with critical and general areas of review.	7 CFR 210.18(g) & 210.18(h)	57	1	57	40	2,280
SFA shall submit to SA documented corrective action, no later than 30 days from the deadline for completion, for violations of critical or general areas identified on administrative follow-up review.	7 CFR 210.18(k)(2)	6,983	1	6,983	6	41,898
Total Reporting for DGA Proposed rule		7,040		7,040	6.27528	44,178
Total Existing Reporting Burden for Part 210						2,912,745
Total Reporting Burden for Part 210 with DGA proposed rule						2,956,923

Recordkeeping						
	Section	Estimated Number of Respondents	Frequency of Response	Average Annual Responses	Average Burden per Response	Annual Burden Hours
SA establishes guidelines and approves School Food Authorities menu planning alternatives. (Burden removed by proposed rule)	7 CFR 210.10 (1)	0	0	0	0	(57)*
SA modifies menu planning alternatives or develops menu planning alternatives. (Burden removed by proposed rule)	7 CFR 210.10 (1)	0	0	0	0	(100)*
SA records document the details of all reviews and the degree of compliance with the critical and general areas of review. Documents on file are available to FNS for review.	7 CFR 210.18 (k), 210.18 (p), & 210.20 (b)(6)	57	93.23	5,314	2.3	12,222
SA documents fiscal action taken to disallow improper claims submitted by SFAs, as determined through claims processing, CRE reviews, and USDA audits. Contracts awarded by SFAs to FSMCs.	7 CFR 210.19 (c) & 210.18 (p)	57	139	7,923	0.50	3,962
SFA adopts menu planning alternatives, modifies menu planning alternatives or develops menu planning alternatives and submits them to the State agency for approval at SFA level. (Burden removed by proposed rule.)	7 CFR 210.10(1)	0	0	0	0	(26,261)*
SFA documents corrective action taken on program violations disclosed by review or audit.	7 CFR 210.18 (k)(2)	6,983	1	6,983	6	41,898
Total Recordkeeping for New Burden		7,040		20,220	1.56596	31,664
Total Existing Recordkeeping Burden for 0584-0006, Part 210						8,893,821
Total Recordkeeping Burden for 0584-0006, Part 210 with proposed rule						8,925,485
*Indicates reduced burden hours due to changes in proposed rule.						

Section 7 CFR 210.15 and 210.20 require that, in order to participate in the National School Lunch Program, school food authorities and State agencies must maintain records to demonstrate compliance with Program requirements. Section 7 CFR 210.23 further requires State agencies and school food authorities to maintain records for a period of three years.

SUMMARY OF BURDEN (OMB #0584-NEW)	
TOTAL NO. RESPONDENTS	7,040
AVERAGE NO. RESPONSES PER RESPONDENT	3.87217
TOTAL ANNUAL RESPONSES	27,260
AVERAGE HOURS PER RESPONSE	2.78216
TOTAL BURDEN HOURS FOR PART 210 WITH PROPOSED RULE	11,882,408
CURRENT OMB INVENTORY FOR PART 210	11,806,566
DIFFERENCE (NEW BURDEN REQUESTED WITH PROPOSED RULE)	75,842

BILLING CODE 3410–30–C

E-Government Act Compliance

FNS is committed to complying with the E-Government Act 2002, to promote the use of the Internet and other information technologies to provide increased opportunities for citizen access to Government information and services, and for other purposes.

Regulatory Impact Analysis

Agency: Food and Nutrition Service, USDA.

Title: Nutrition Standards in the National School Lunch and School Breakfast Programs.

Action

a. *Nature:* Proposed Rule.

b. *Need:* Section 103 of the Child Nutrition and WIC Reauthorization Act of 2004 inserted Section 9(a)(4) into the National School Lunch Act requiring the Secretary to promulgate rules revising nutrition requirements, based on the most recent *Dietary Guidelines for Americans,* that reflect specific recommendations, expressed in serving recommendations, for increased consumption of foods and food ingredients offered in school nutrition. This proposed rule amends Sections 210 and 220 of the regulations that govern the National School Lunch Program (NSLP) and the School Breakfast Program (SBP). The proposed rule implements recommendations of the National Academies' Institute of Medicine (IOM). Under contract to the United States Department of Agriculture (USDA), IOM proposed changes to NSLP and SBP meal pattern requirements consistent with the 2005 *Dietary Guidelines* and IOM's Dietary Reference Intakes. The proposed rule advances the mission of the Food and Nutrition Service (FNS) to provide children access to food, a healthful diet, and nutrition education in a manner that promotes American agriculture and inspires public confidence.

c. *Affected Parties:* The programs affected by this rule are the NSLP and the SBP. The parties affected by this regulation are USDA's Food and Nutrition Service, State education agencies, local school food authorities, schools, students, and the food production, distribution and service industry.

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Abbreviations

The following abbreviations are used throughout this document:

CN Child Nutrition Programs
CPI Consumer Price Index
CRE Coordinated Review Effort
DRI Dietary Reference Intake
FNS Food and Nutrition Service
FY Fiscal Year
IOM Institute of Medicine
NSLA National School Lunch Act
NSLP National School Lunch Program
RDA Recommended Dietary Allowance
SA State Agency
SBP School Breakfast Program
SY School Year
SFA School Food Authority
SLBCS–II School Lunch and Breakfast Cost Study II
SMI USDA School Meals Initiative for Healthy Children
SNDA–III School Nutrition Dietary Assessment III
USDA United States Department of Agriculture

I. Background

The National School Lunch Program (NSLP) is available to over 50 million children each school day; an average of 31.6 million children per day ate a reimbursable lunch in fiscal year (FY) 2010. The School Breakfast Program (SBP) served an average of 11.6 million children daily. Schools that participate in the NSLP and SBP receive Federal reimbursement and USDA Foods (donated commodities) for lunches and breakfasts that meet program requirements. In exchange for this assistance schools serve meals at no cost or at reduced price to income-eligible children. Federal meal reimbursements and USDA Foods totaled $13.3 billion in FY 2010. FNS projections of the number of meals served and Federal program costs are summarized in Table 1.[10]

TABLE 1—PROJECTED NUMBER OF MEALS SERVED AND TOTAL FEDERAL PROGRAM COSTS

[In millions]

	Fiscal year					
	2011	2012	2013	2014	2015	2016
NSLP:						
Lunches Served	5,409.6	5,477.2	5,532.0	5,581.8	5,626.5	5,671.5
Program Cost	$12,116.9	$12,513.5	$12,737.0	$12,834.8	$12,851.4	$12,940.2
SBP:						
Breakfasts Served	2,062.4	2,124.3	2,166.7	2,201.4	2,236.6	2,272.4
Program Cost	$3,117.9	$3,270.0	$3,383.8	$3,460.0	$3,552.2	$3,669.3

In FY 2010, schools served 2.9 billion free NSLP lunches, 0.5 billion reduced price lunches, and 1.8 billion full price or "paid" lunches. Schools served 1.5 billion free breakfasts, 0.2 billion reduced price breakfasts, and 0.3 billion paid breakfasts. These figures do not include non-Federally reimbursable a la carte meals or other non-program foods.[11]

Reimbursement rates for meals served under the current meal patterns are established by law and are adjusted annually for inflation.[12] In school year (SY) 2010–2011, the Federal reimbursement for a free breakfast for schools in the contiguous United States and "not in severe need" was $1.48; the

[10] The figures in Table 1 are USDA projections of the number of program meals served and the value of USDA reimbursements for those meals. These figures are baseline Federal government costs of the NSLP and the SBP estimated for the President's budget proposal for FY 2011. Elsewhere in this document, baseline costs refer to the cost to schools of serving meals that satisfy current program requirements.

[11] USDA program data.

[12] Reimbursement rates and annual inflation adjustments are set by statute, not regulation. The proposed rule does not alter current reimbursement rates. Reimbursement rates for school lunch under current nutrition standards are specified in Sections 4(b)(2) and 11(a)(2) of the NSLA (42 USC 1753(b)(2) and 42 USC 1759a(a)(2)). Breakfast reimbursement rates are specified in Section 4(b)(1)(B) of the Child Nutrition Act (42 USC 1773(b)(1)(B)). Both lunch and breakfast reimbursement rates are subject to the annual inflation adjustment prescribed by Section 11(a)(3) of the NSLA (42 USC 1759a(a)(3)).

Federal reimbursement for a free lunch to schools in SFAs in the contiguous United States that served fewer than 60 percent free and reduced price lunches was $2.72. Schools that participate in the NSLP also receive USDA Foods for each free, reduced price, and paid lunch served, as provided by Section 6 of the Richard B. Russell National School Lunch Act (NSLA). Table 2 provides a breakdown of breakfast and lunch reimbursements in SY 201–2011, including USDA Foods.

Table 2: Federal Per-Meal Reimbursement and Minimum Value of USDA Foods, SY 2010-2011[13]

	Breakfast Reimbursement		Lunch Reimbursement		Minimum Value of Donated Foods
	Schools in "Severe Need"	Schools not in "Severe Need"	SFAs that serve at least 60% of lunches free or at reduced price	SFAs that serve fewer than 60% of lunches free or at reduced price	Additional Federal assistance for each NSLP lunch served
Contiguous States					
Free	$1.76	$1.48	$2.74	$2.72	$0.2025
Reduced Price	1.46	1.18	2.34	2.32	0.2025
Paid	0.26	0.26	0.28	0.26	0.2025
Alaska					
Free	$2.82	$2.36	$4.43	$4.41	$0.2025
Reduced Price	2.52	2.06	4.03	4.01	0.2025
Paid	0.39	0.39	0.44	0.42	0.2025
Hawaii					
Free	$2.05	$1.72	$3.20	$3.18	$0.2025
Reduced Price	1.75	1.42	2.80	2.78	0.2025
Paid	0.30	0.30	0.32	0.30	0.2025

Under Section 9(a)(4) and Section 9(f)(1) of the NSLA, schools that participate in the NSLP or SBP must offer lunches and breakfasts that are consistent with the goals of the most recent *Dietary Guidelines for Americans.* School lunches must provide one-third of the Recommended Dietary Allowances (RDA) for protein, calcium, iron, and vitamins A and C, on average over the course of a week; school breakfasts must satisfy one-fourth of the RDAs for the same nutrients. Current nutrition requirements for school lunches and breakfasts are based on the 1995 *Dietary Guidelines* and the 1989 RDAs. (School lunches and breakfasts were not updated when the 2000 *Dietary Guidelines* were issued because those recommendations did not require significant changes to the school meal patterns.) The 2005 *Dietary Guidelines,* provide more prescriptive and specific nutrition guidance than earlier releases, and require significant changes to school meal requirements.

The United States Department of Agriculture's Food and Nutrition Service (FNS) contracted with the National Academies' Institute of Medicine (IOM) in 2008 to examine current NSLP and SBP nutrition requirements. IOM formed an expert committee tasked with comparing current school meal requirements to the 2005 *Dietary Guidelines* and to current Dietary Reference Intakes. The committee released its recommendations in late 2009 (IOM 2009). For a summary discussion of the scientific standards that guided the committee, and the development of recommended targets for micro- and macronutrients, *see* the preamble to the proposed rule.

II. Summary of Proposed Meal Requirements

The proposed rule adopts the IOM recommendations with only minor modifications (*see* section IV). In general, IOM recommended new requirements for menu planning that:

- Increase the amount and variety of fruits, vegetables, and whole grains;
- Set a minimum and maximum level of calories; and
- Increase the focus on reducing the amounts of saturated fat and sodium provided in school meals.

[13] School year 2010– NSLP and SBP reimbursement rates, and the minimum value of donated foods, can be found in the July 19, 2010 **Federal Register**, Vol. 75, No. 137, pp. 41797 and 41798.

Table 3: Summary of Proposed Meal Requirements[14]

Meal Pattern	Breakfast			Lunch		
	Grades K-5	Grades 6-8	Grades 9-12	Grades K-5	Grades 6-8	Grades 9-12
	Amount of Food[a] Per Week (Minimum Per Day)					
Fruits (cups)[b]	5 (1)	5 (1)	5 (1)	2.5 (0.5)	2.5 (0.5)	5 (1)
Vegetables (cups)[bc]	0	0	0	3.75 (0.75)	3.75 (0.75)	5 (1)
Dark green	0	0	0	0.5[d]	0.5[d]	0.5[d]
Orange	0	0	0	0.5[d]	0.5[d]	0.5[d]
Legumes	0	0	0	0.5[d]	0.5[d]	0.5[d]
Starchy	0	0	0	1	1	1
Other	0	0	0	1.25[d]	1.25[d]	2.5[d]
Grains[e] (oz eq)	7-10 (1)	8-10 (1)	9-10 (1)	9-10 (1)	9-10 (1)	12-13 (2)
Meats/Meat Alternates (oz eq)	5 (1)	5 (1)	7-10 (1)	8-10 (1)	9-10 (1)	10-12 (2)
Milk[f] (cups)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Other Specifications: Daily Amount Based on the Average for a 5-Day Week						
Min-max calories (kcal)[gh]	350-500	400-550	450-600	550-650	600-700	750-850
Saturated fat (% of total calories) g	< 10	< 10	< 10	< 10	< 10	< 10
Sodium (mg)[i]	≤ 430	≤ 470	≤ 500	≤ 640	≤ 710	≤ 740
Trans fat	Nutrition label must specify zero grams of trans fat per serving.					

[a]Food items included in each group and subgroup and amount equivalents. Minimum serving is ⅛ cup.

[b]One cup of fruits and vegetables usually provides 2 servings; ¼ cup of dried fruit counts as ½ cup of fruit; 1 cup of leafy greens counts as ½ cup of vegetables. No more than half of the fruit offerings may be in the form of juice.

[c]For breakfast, ½ cup of non-starchy vegetables may be considered equivalent to ½ cup fruits. No minimum amount of vegetables is required for breakfast.

[d]Larger amounts of these vegetables may be served.

[e]At least half of grains must be whole grain-rich. Aiming for a higher proportion of whole grain-rich foods is encouraged.

[f]Milk must be low-fat (1 percent milk fat or less, unflavored) or fat-free (unflavored or flavored).

[g]The average daily amount for a 5-day school week is not to be less than the minimum or exceed the maximum.

[h]Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium. Foods of minimal nutritional value and fluid milk with fat content greater than 1 percent milk fat are not allowed.

Tables 4 and 5 [15] compare the meal pattern recommendations proposed in this rule to current requirements for breakfast and lunch respectively.[16] Key differences include:

[14] Information in this table is summarized from the preamble to the proposed rule.

[15] Tables 4 and 5 appear as Tables 8–1 and 8–2 in IOM's report on the school meals programs, *School Meals: Building Blocks for Healthy Children* (IOM 2009). The recommendations in these tables are adopted by the proposed rule with one small exception: non-starchy vegetables may be substituted for fruit at breakfast (*see* Table 3, note c).

[16] The food group recommendations presented in Tables 4 and 5 are based on a set of nutrient targets developed by IOM (*see* IOM 2009 for a detailed discussion of that process). Tables 7–2, O–2, and O–3 of the IOM report compare IOM's nutrient targets to the RDA targets that underlie the current meal patterns. Readers of the IOM report may notice that differences in current rule and recommended food group quantities (Tables 4 and 5) do not always track differences between IOM's nutrient targets and current rule RDA targets (IOM report tables 7–2, O–2, and O–3). For instance, IOM's nutrient targets for protein are twice as great as the RDA protein targets for elementary and high school students; IOM's protein targets are close to three times as great as the RDA targets for middle school students. By comparison, IOM's recommended

number of meat servings are little different than the number of servings under current program rules. The reason for the discrepancy is that student intakes of protein currently exceed RDA targets (*see* Tables VI.2 and VII.2 in FNS 2007). IOM nutrient targets for protein are fully satisfied by the meat and legume recommendations in Tables 4 and 5 (*see* the discussion on pages 164 and 165 of IOM 2009). Readers of the IOM report should compare the IOM's nutrient targets to the RDA values in report Tables 7–2, O–3, and O–4, rather than to the RDA values in report table E–4. Table E–4 figures are based on the 1989 RDAs. RDA values in Tables 7–2, O–3, and O–4 are current. Pages 118–120 of the IOM report (IOM 2009) discuss how the IOM nutrient targets compare to the minimum RDA standards for school meals specified by Section 9(b)(1) of the NSLA (42 USC 1758(f)(1)).

- The number of fruit and vegetable servings offered to students over the course of a week would double at breakfast and would rise substantially at lunch.
- Schools would no longer be permitted to substitute between fruits and vegetables; each has its own requirement, ensuring that students are offered both fruits and vegetables every day.
- A minimum number of vegetable servings would be required from each of four vegetable subgroups.
- Initially, half of grains offered to students would have to be whole grain rich. Two years after implementation, all grain products offered would have to be whole grain rich.
- Schools would be required to substitute low fat and skim milk for higher fat content milk.

Table 4: School Breakfast Program - Current Requirements Compared to Recommendations for a 5-Day School Week[a]

	Current Requirements	Recommendations		
Grade Levels	K-12	K-5	6-8	9-12
Fruit (cups)	2.5	5	5	5
Vegetable (cups)	0	0	0	0
Grain/Bread (oz eq)	0-10[b,c]	7-10[d]	8-10[d]	9-10[d]
Meat/Meat Alternates (oz eq)	0-10[c]	5	5	7-10
Milk (cups)	5	5	5	5

NOTE: oz eq = ounce equivalent.

[a] Requirements and recommendations are for meals *as offered* for a 5-day school week. Requirements are minimum portion sizes based on the Traditional Food-Based Menu planning approach.

[b] Must be enriched or whole grain.

[c] Requirements call for two grains, two meats, or one of each.

[d] At least half of which must be whole grain-rich.

Table 5: National School Lunch Program: Current Requirements Compared to Recommendations for a 5-Day School Week[a]

	Current Requirements: Traditional Food-Based Approach			Current Requirements: Enhanced Food-Based Approach			Recommendations		
Grade Levels	K-3[b]	4-12[b]	7-12[c,d]	K-3[b,d]	K-6[b]	7-12	K-5	6-8	9-12
Fruit (cups)	2.5[e]	3.75[e]	3.75[e]	3.75[e]	4.25[g]	5[e]	2.5	2.5	5
Vegetable (cups)							3.75	3.75	5
Dark Green	NS	NS	NS	NS	NS	NS	0.5	0.5	0.5
Orange	NS	NS	NS	NS	NS	NS	0.5	0.5	0.5
Legumes	NS	NS	NS	NS	NS	NS	0.5	0.5	0.5
Starchy	NS	NS	NS	NS	NS	NS	1	1	1
Other	NS	NS	NS	NS	NS	NS	1.25	1.25	2.5
Grain/Bread (oz eq)	8 (min 1/day)[f]	8 (min 1/day)[f]	10 (min 1/day)[f]	10 (min 1/day)[f]	12 (min 1/day)[f]	15 (min 1/day)[f]	9-10[h]	9-10[h]	12-13[h]
Meat/Meat Alternates (oz eq)	7.5	10	15	7.5	10	10	8-10	9-10	10-12
Milk (cups)	5	5	5	5	5	5	5	5	5

NOTES: min = minimum; NS = not specified; oz eq = ounce equivalents.

[a] Requirements and recommendations are for meals *as offered* for a 5-day school week.

[b] Minimum portion sizes.

[c] Recommended portion sizes under the Traditional Food-Based Menu planning approach.

[d] Optional grade configuration.

[e] Two or more servings of fruit, vegetables, or both a day.

[f] Must be enriched or whole grain.

[g] Two or more servings of fruit, vegetables, or both a day, plus an extra half-cup over the 5-day school week.

[h] At least half of which must be whole grain-rich

The proposed rule differs slightly from the IOM recommendations in that it proposes a quicker transition to a whole grain requirement consistent with the *Dietary Guidelines.* IOM recommended that the proportion of whole grains to refined grains on school menus exceed 50 percent within "approximately 3 years" of implementation of revised meal patterns.[17]

In contrast, the proposed rule accelerates the transition to *Dietary Guidelines* recommendations to the second year after implementation of the rule. At that time, it requires that schools offer only grain products that are whole grain rich, rather than permit schools to offer half of all grains in the form of 100 percent whole grain foods and the other half as refined grains (one of the options suggested by IOM).

The proposed rule adopts with a slight modification IOM's recommendation for "offer vs. serve"

[17] "With regard to increasing whole grains and especially to reducing the sodium content of meals, the committee acknowledges the need for a gradual phase-in to accustom children to the changes in school meals and also to give the market time to respond to changes in demands (expressed as purchase specifications) from school food service directors." (IOM 2009, pp. 172, 199)

requirements as part of a reimbursable meal. Under this requirement, a student may decline 1 food item from the meal pattern at breakfast but must select 1 fruit or vegetable. For lunch, the student may decline 2 food items but must select 1 fruit or vegetable. Our estimates of the impact of the proposed rule reflect this flexibility in estimating the quantities of foods actually served to students.

III. Cost/Benefit Assessment

A. Summary

1. Costs

The proposed rule will more closely align school meal pattern requirements with the science-based recommendations of the 2005 *Dietary Guidelines.* These changes will increase the amount of fruits, vegetables, and whole grains offered to participants in the NSLP and SBP.[18] The proposed meal patterns will also limit certain fats and reduce calories and sodium in school meals. Because some foods that meet these requirements are more expensive than foods served in the school meal programs today, the food cost component of preparing and serving school meals will increase.

The biggest contributors to this increase are the costs of serving more vegetables and more fruit, and replacing refined grains with whole grains. We estimate that food costs may increase by 3.4 cents per lunch served and 18.8 cents per breakfast served on initial implementation of the proposed requirements. Two years after implementation, when all grains served must be whole grain rich, the food costs may increase to 7.2 cents per lunch served and 25.3 cents per breakfast.[19] In aggregate, we estimate that the proposed rule may increase SFA food costs by $3.4 billion from FY 2012 through FY 2016. The annual increase in food costs, once the 100 percent whole grain requirement takes effect, may be about $1 billion.

Compliance with this rule is also likely to increase labor costs. Serving healthier school meals that are acceptable to students may require more on-site preparation, and less reliance on prepared foods. IOM did not estimate the overall required increase in labor costs to implement its recommended changes in meal requirements, but noted an analysis of data from some Minnesota school districts that showed that "healthier" meals had higher labor costs—principally because of increased use of on-site preparation.[20]

For purposes of this impact analysis, labor costs are assumed to grow so as to maintain a constant ratio with food costs, consistent with findings from a national study of school lunch and breakfast meal costs (USDA 2008). In practice, this suggests that food and labor costs may increase by nearly equal amounts relative to current costs. Additional costs of compliance with the rule are discussed in subsections III C and III D of this analysis.[21]

The estimated overall costs of compliance are summarized in Table 6. For purposes of this analysis, the rule is assumed to take effect on July 1, 2012, the start of school year (SY) 2012–2013. The additional requirement to offer only whole grain rich grain products is assumed to begin in SY 2014–2015.

The analysis estimates that total costs may increase by $6.8 billion through fiscal year (FY) 2016, or roughly 12 percent when fully implemented in FY 2015. The estimated increases in food and labor costs are equivalent to about 14 cents for each reimbursable school lunch and about 50 cents for each reimbursable breakfast in FY 2015. These costs would be incurred by the local and State agencies that control school food service accounts.

TABLE 6—PROJECTED COST OF PROPOSED RULE

[Dollars in millions]

	Fiscal year					
	2012	2013	2014	2015	2016	Total
Food Costs	$91.8	$626.5	$704.9	$968.9	$1,028.2	$3,420.4
Labor Costs	89.6	611.4	687.9	945.6	1,003.4	3,337.9
State Agency Administrative Costs	0.1	8.9	9.0	9.3	9.6	36.9
Total	181.5	1,246.8	1,401.9	1,923.8	2,041.3	6,795.2
Percent Change Over Baseline	8.3	8.5	9.1	12.0	12.2	10.5

2. Benefits

The primary benefit of this proposed rule is to align the regulations with the requirements placed on schools under NSLA to ensure that meals are consistent with the goals of the most recent *Dietary Guidelines* and the Dietary Reference Intakes. In increasing access to children for such meals it will address key inconsistencies between the diets of school children and *Dietary Guidelines* by (1) increasing servings of fruits and vegetables, (2) replacing refined-grain foods with whole-grain rich foods, and (3) replacing higher-fat dairy products with low-fat varieties. It also results in a number of additional benefits, including alignment between Federal program benefits and national nutrition policy, improved confidence by parents and families in the nutritional quality of school meals, and the contribution that improved school

[18] The proposed rule would make no change to the meal requirements for pre-kindergarten (pre-K) children. But, the rule would require that schools serving meals to pre-K children adopt food-based menu planning (FBMP) for consistency with the rule's FBMP requirement for meals served to older children. Because the rule proposes no substantive change to the pre-K meal requirements we assume that the rule has no impact on the cost of serving meals to these children. More than ⅔ of elementary schools used traditional or enhanced FBMP in SY 2004–2005 (USDA 2008, vol. 1, p. 36) and would need to make no changes at all to comply with the rule's pre-K menu planning requirement. For elementary schools that serve meals to pre-K children using a nutrient based menu planning system, the rule would require a change to FBMP. But that change is required for meals served to older children as well, and the administrative cost of that change is incorporated into the labor cost estimate of this analysis.

[19] Some of the difference between the 3.4 cent and 7.2 cent lunch figures and the 18.8 cent and 25.3 cent breakfast figures are due to food inflation, not to the change in the whole grain requirement. The lower numbers are estimates for the end of FY 2012 (the start of SY 2012–2013). The higher numbers are for FY 2015.

[20] IOM 2009, p. 148.

[21] The SLBCS–II found that costs other than food and labor accounted for 9.9 percent of reported SFA costs. These costs include "supplies, contract services, capital expenditures, indirect charges by the school district, *etc.*" (USDA 2008, pp. 3–5)

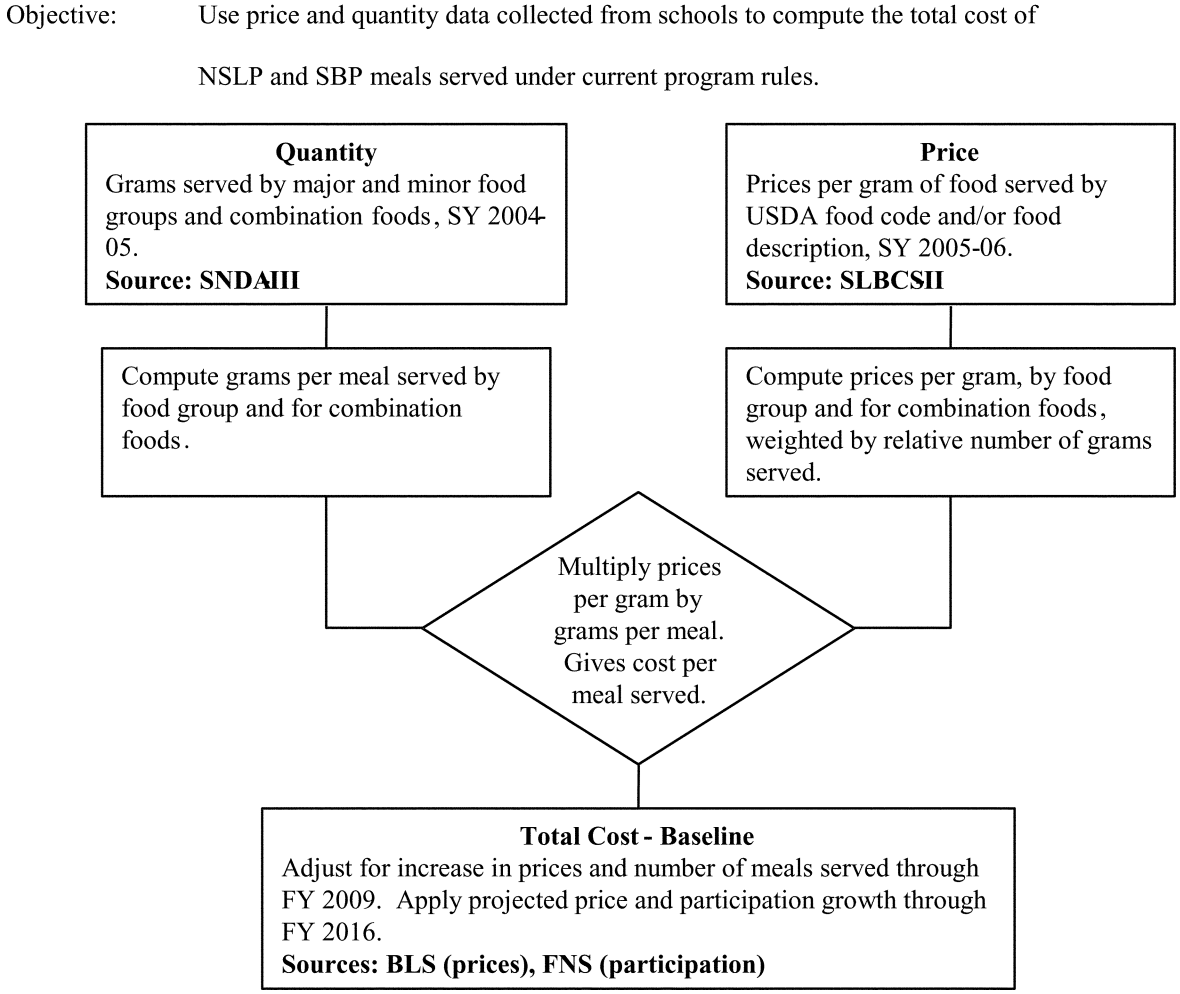
meals can make to the overall school nutrition environment.

B. Food and Labor Costs

1. Baseline Cost Estimate

Food Costs: The analysis begins with an assessment of the cost of purchasing food to meet the rule's food-based meal requirements. The estimated increase in food cost is the difference between the cost of serving the quantities and types of foods used to meet current requirements and the cost of serving the quantities and types of foods outlined in the proposed rule.

Figure 1: Baseline Food Cost Estimate under Current Requirements and Practices



The data sources that we use in this analysis, and their contribution to our food cost estimate, are summarized in Table 7.

Table 7: Summary of Food Cost Estimate Data Sources

Data Source	Contribution to Food Cost Estimate
School Nutrition Dietary Assessment Study III (USDA 2007)	• Food codes and descriptions and food quantities served to students in SY 2004-05. Prices are applied to these food quantities to determine baseline food costs. • Meals served, quantities served, and quantities offered ("offer weights") by food type, by school type (elementary, middle, and high). Used to determine students' inclinations to take an offered menu item ("take rates"). Take rates are applied to the types and quantities of food that must be offered to students under the proposed rule to estimate quantities served.
School Lunch and Breakfast Cost Study II (USDA 2008)	• Food codes and descriptions, number of servings, average gram weight per serving, total grams served, cost per serving. These are used, along with other data sources, to estimate the cost per cup or ounce equivalent of each of the proposed rule's required food types and combination entrées. • Also used to estimate the relative cost of food group subtypes: whole versus refined grain products, and the various vegetable varieties with separate serving requirements under the proposed rule.
USDA Child Nutrition Food Labels	• USDA food labels contain information on food group crediting for child nutrition program administrators. USDA maintains a collection of food labels for thousands of commercially-prepared entrees. Food group crediting information is used to determine the cup or ounce equivalents of meat, meat alternate, grain, vegetable, and fruit that may be credited by schools for a particular entrée. • Food group crediting is used to determine how much of the proposed rule's food group requirements are satisfied by prepared foods offered by schools, and how much remains to be met with single food or non-entrée items.
USDA, National Food Service Management Institute, Recipe Database	• The recipe database is used to supplement the information from USDA food labels. The recipe records, like the food labels, contain food group crediting information used to determine how much of the proposed rule's food group requirements are satisfied by particular food items.
USDA Food Buying Guide	• The Food Buying Guide also contains information on food group crediting. The crediting information for various grain products is used in this estimate.
USDA, Agricultural Research Service, National Nutrient Database for Standard Reference, SR22	• The SR22 is used to supplement the other food group crediting resources listed above. SR22 information was used to estimate food credits for food items without a CN food label, or a USDA recipe. SR22 provides protein and fiber content per given volume of a particular food. That information is used to estimate the food group credits for foods that are similar, but not identical, to foods with CN labels or USDA recipe records. • SR22 data is also used to compute the proper conversion factor from grams to cups for various school foods.

Data Source	Contribution to Food Cost Estimate
USDA, Agricultural Research Service, *MyPyramid* Equivalents Database for USDA Food Codes, Version 1.0	• Used to determine the relative share of vegetables in combination foods and entrées by each of the varieties with separate serving requirements under the proposed rule.
School Nutrition Dietary Assessment Study II (USDA 2001)	• Average food group crediting information for school salad bars is taken from SNDA-II.

We first totaled the value of food served by food group, as reported by schools in a national school nutrition assessment (SNDA–III), separately for lunch and breakfast. SNDA–III provides an estimate of the amount or quantity (in grams) of foods offered and served in the school lunch and breakfast programs for SY 2004–2005, based on a nationally representative sample of all participating public schools.[22] SNDA–III provides quantities of both minimally processed single foods (such as whole fruit, fruit juice, milk, and vegetables) and combination foods or entrees (such as beef stew, macaroni and cheese, and breakfast burritos). We summed the quantities of foods served to generate total gram weights for each single food and combination food category. We then divided these sums by SNDA–III's count of total meals served to generate average per-meal gram amounts for the same broad food categories.

We estimated the cost per gram within each food category using detailed price and quantity information collected as part of another nationally representative sample of public schools in SY 2005–2006 (SLBCS–II). SLBCS–II provides information on the number of servings, the average gram weight per serving, total grams served, and the cost per serving for a comprehensive list of single foods and combination entrees. The SLBCS–II dataset provides sufficient information to estimate weighted average prices for the same broad food categories identified in SNDA–III.

We computed preliminary per-meal baseline costs for breakfast and lunch as the product of the food quantities reported in SNDA–III and the unit prices computed from the SLBCS–II. Because the food prices available for this analysis are from SY 2005–2006, we inflated our estimates by the actual and projected increase in prices since that time. We computed a set of food group inflators weighted by SNDA–III's relative mix of foods served by schools in SY 2004–2005. We used the Consumer Price Index (CPI–U) for the specific food items in our weighted group averages. Because the mix of foods served in school breakfasts differs from the mix served at lunch (the grain group, for example, is weighted more heavily with bread at lunch, and more heavily with cereal at breakfast) we computed two sets of food group inflators. For years through 2009, these inflators are constructed with actual CPI values. For years after 2009, the food group inflators rely on historic 5-year averages. Food group inflation factors are summarized in Table 8.

[22] If patterns of student selection of foods is different in private schools than it is in public schools, then the reliance on public school data alone may bias our results. However, enrollment in public schools accounts for 97 percent of total enrollment in NSLP participating schools. Public schools account for more than 98 percent of total enrollment in SBP participating schools (USDA program data). Because public schools account for such a large share of total enrollment by participating schools, we expect that any differences in selection patterns between public and private schools would have little impact on our analysis.

Table 8: Food Group Price Inflators[23]

	Cumulative Increase 2006 to 2009	5-year Historic Average (for years after 2009)
Lunch		
Milk	5.88%	1.65%
Meat or Meat Alternate	11.20%	2.73%
Fruit Juice	19.01%	3.99%
Fruit (non-juice)	12.02%	3.90%
Vegetables	17.39%	5.37%
Refined & Whole Grains	24.21%	5.27%
Combination Foods/Entrees	12.65%	3.23%
Breakfast		
Milk	5.88%	1.65%
Meat or Meat Alternate	11.68%	2.82%
Fruit Juice	19.01%	3.99%
Fruit (non-juice)	9.97%	3.67%
Vegetables	20.87%	7.00%
Refined & Whole Grains	15.94%	3.26%
Combination Foods/Entrees	12.65%	3.23%

The value of USDA Foods and the value of cash in lieu of such food donations enters into both our baseline and proposed rule cost estimates; we treat them as food "costs" in both estimates. This is the same approach used in the SLBCS–II to estimate the cost of preparing and serving school meals.

We assume in the analysis that the types of commodities offered to schools in future years may satisfy the food group requirements of the proposed rule as effectively as they do now. USDA's annual commodity purchase plan, developed by FNS in consultation with the Agricultural Marketing Service, Farm Service Agency, and others, is driven by school demand for particular products as well as by current prices, available funds, and the variable nature of agricultural surpluses.

In large measure the variety of USDA Foods offered to schools are already well positioned to support the proposed requirements. In recent years USDA has purchased relatively more canned foods and meats with reduced levels of fat, sodium, and sugar for school distribution. As products such as butter and shortening have been removed from the USDA Foods available to schools, new products such as whole grain pasta have been added. The proposed rule is likely to move school demand towards a greater emphasis on these new offerings as schools introduce new menus. We assume that the contribution of USDA Foods to the cost of preparing school meals will not change after implementation of the rule.

The final step in constructing the baseline cost estimate was to multiply the per-meal cost estimates by the projected number of breakfasts and lunches served through our 5-year forecast period. Projected growth in the number of NSLP and SBP meals served in the absence of the proposed rule is shown in Table 9.

TABLE 9—PROJECTED BASELINE GROWTH IN REIMBURSABLE MEALS SERVED[24]

		Fiscal year					
		2011	2012	2013	2014	2015	2016
Lunches	meals (billions)	5.4	5.5	5.5	5.6	5.6	5.7
	percent change	2.9	1.2	1.0	0.9	0.8	0.8
Breakfasts	meals (billions)	2.1	2.1	2.2	2.2	2.2	2.3
	percent change	5.3	3.0	2.0	1.6	1.6	1.6

Appendix A contains a set of tables that detail the calculations described above. The appendix tables present baseline and proposed rule food prices, food quantities, and meals served for

[23] Computed by USDA from CPI figures from the Bureau of Labor Statistics. The figures for combination foods are based on the CPI values for the Food at Home series.

[24] The projected growth above in meals served through FY 2011 reflects the difference between FNS estimates for FY 2011 prepared for the 2011 President's Budget and actual meals served in FY 2010. The remaining percentages are FNS projections prepared for the FY 2011 President's Budget.

each year from FY 2012 through FY 2016.

Note that our baseline per-meal cost estimates are averages. They reflect the variety of meals served across all NSLP and SBP participating schools. Some schools may be much closer than others to serving meals that meet the requirements of the proposed rule, and the costs of compliance with the proposed rule may therefore vary at the school level. The use of an average baseline cost estimate is appropriate, however, for estimating the aggregate cost of compliance across all schools.

2. Proposed Rule Cost Estimate

Food Costs: Both our baseline and proposed rule food cost estimates rely on quantity and price information reported by schools in SNDA–III and SLBCS–II. These datasets contain detailed information on the quantity, variety, and unit prices of foods offered and served to students. Many of the records on these datasets describe single item foods that are served alone or are used in school recipes. But other records describe prepared or heat-and-serve entrees and other "combination foods." As described above, we developed our baseline cost estimate by multiplying the gram weight of food items served by their cost per gram. For both single item foods and combination foods, prices and quantities are given in SLBCS–II and SNDA–III; our baseline cost estimate required limited processing of these datasets.

For the proposed rule we continue to rely on prices per gram from SLBCS–II. But for quantities served we need to look to the requirements of the rule rather than to SNDA–III. We use the midpoints of the rule's food group requirements, expressed in servings rather than grams, to estimate the quantities of food that schools must purchase.[25] For single foods, the number of program-creditable food group servings per gram is a function of the foods themselves (density and fat content, for example) and whether the foods (primarily vegetables) are served raw or cooked. We relied on several sources for this information, including the USDA Food Buying Guide and the National Nutrient Database for Standard Reference. For combination foods we relied on the USDA's child nutrition food labels and the USDA's recipe database; these sources contain the result of analyses performed by food manufacturers and USDA. Because the sources for program-creditable servings per gram are different for single foods and combination foods, we need to separate single foods from combination foods and estimate their costs separately.

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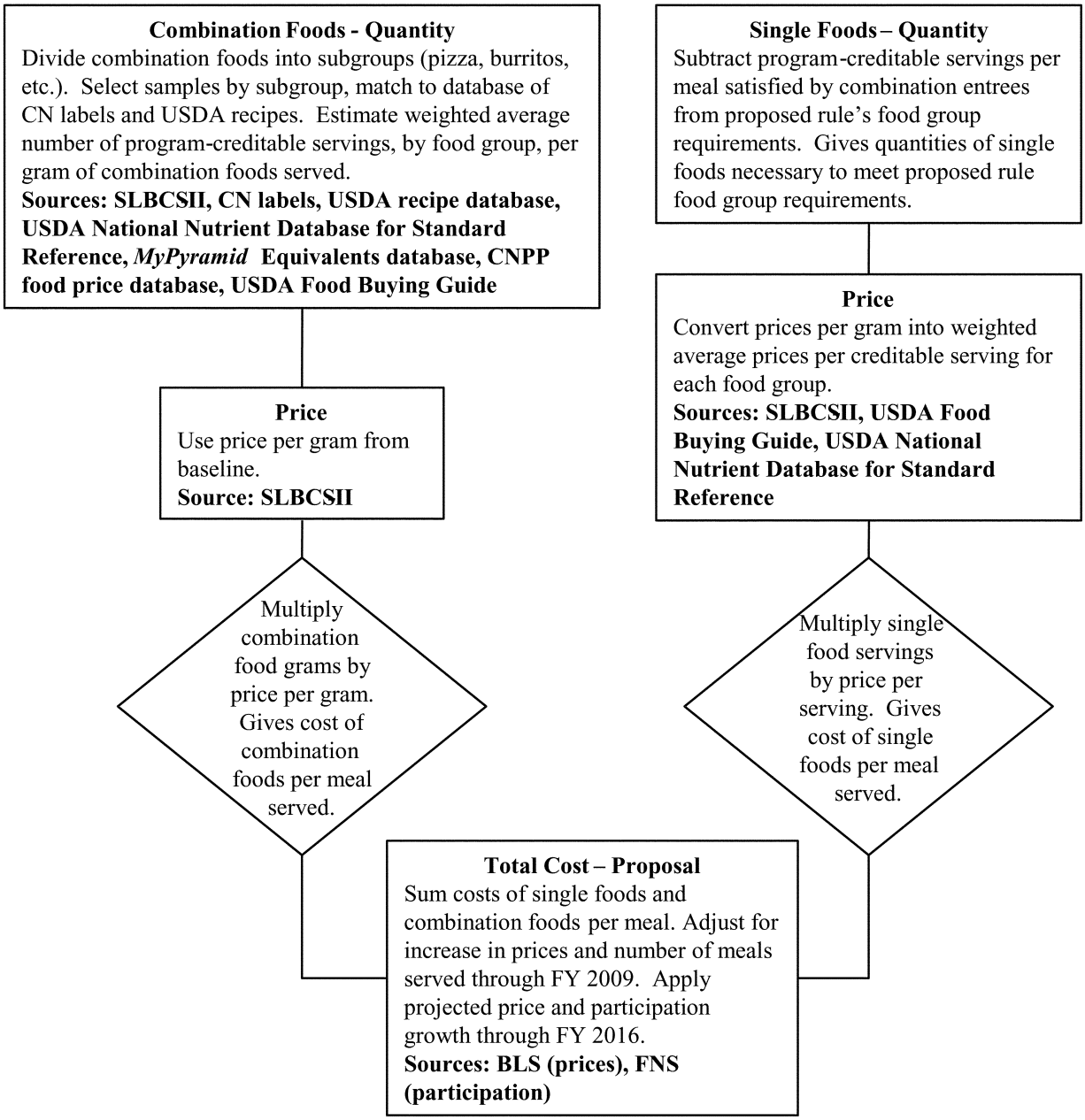
[25] The rule's food group requirements are expressed in servings per week. Because we are developing an average cost per meal we divide these weekly figures by 5. Some of the rule's requirements are given in ranges of servings, such as 10–12 meat or meat alternate servings (for lunches) per high school child per week (*see* Table 3). FNS's primary cost estimate targets the midpoints of the rule's food group requirements where requirements are expressed as ranges.

Figure 2: Food Costs under Proposed Rule

Objective: Use price data collected from schools, and meal pattern requirements from the proposed rule, to estimate the cost of serving meals under the proposed rule.



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A basic assumption underlying the estimated cost of reimbursable meals under the proposed rule is that schools will continue to serve entrees that have proven popular with students on current school menus. Some of these entrees may be modified to replace a portion of their refined grains with whole grains, or starchy vegetables with other vegetable varieties. But, because pizza, burritos, and salad bars are successful items today, this impact analysis assumes that they will remain on school menus under the proposed rule.

We separated combination foods from single food items in the SNDA–III and SLBCS–II datasets.[26] Using USDA food codes and the descriptive food labels found on the records of both datasets, we divided the combination foods into sub-categories such as chili, beef dishes, lasagna, chicken sandwiches, macaroni and cheese, and peanut butter and jelly. Recognizing that there is variation within these groups, we selected a sample of the most commonly served varieties, and retrieved paper food labels with matching USDA food codes from USDA's Child Nutrition food label collection (CN labels).

CN labels are affixed to many of the commercially prepared and processed foods purchased by school food authorities. The labels provide information on serving size and the

[26] As with the baseline estimate, we prepared separate estimates of meals served under the proposed rule for breakfast and lunch.

number of cup and ounce equivalents of meat, meat alternate (such as cheese, eggs, legumes, or soy protein), grains, or vegetables that schools may credit toward current reimbursable meal pattern requirements.[27] We averaged the crediting information for several varieties within each combination food category to generate representative food credits for the category.

CN labels are not available for some combination foods. However, foods with similar descriptions are often found in USDA's recipe database. The USDA recipe database provides the same type of food crediting information found on CN labels. We used the crediting information from the recipe database when CN labels were unavailable for sampled combination foods. FNS averaged the crediting information from labels and recipes when both sources returned data for particular combination foods.

CN labels and USDA recipes do not indicate whether creditable grain servings are refined or whole grains, nor do they specify what fraction of creditable vegetable servings are satisfied by dark green, deep yellow, starchy, or other varieties. But, USDA's *MyPyramid* database breaks down total grain and vegetable content for given foods into those subcategories or varieties. We matched USDA food codes for the sample of combination foods against the *MyPyramid* database in order to estimate relative shares of whole and refined grains, and vegetable varieties for the combination foods served.[28]

With these average food credits, and with unit prices from the SLBCS–II, we estimated a price per creditable ounce or cup equivalent of meat, grain, vegetable, and fruit for each combination food served. We then computed a weighted average price per food credit for combination foods as a whole, using the SLBCS–II's relative gram weight of each item. Finally, we multiplied the average price and food credit per gram by SNDA–III's total gram weight of combination foods served per reimbursable meal at the elementary, middle, and high school levels.

These steps generate a price, and a set of food group credits, contributed by combination foods to the average elementary, middle, and high school lunch and breakfast.

We subtracted the food credits accrued by combination foods from a set of school-level food group targets that represent the requirements of the proposed rule after adjustment for student selection. Under the proposed rule, as under current program rules, students need not take all of the food items offered to them in order for their lunch or breakfast to qualify for Federal reimbursement. The difference between what is offered to students and what they select is the "take rate." We computed average take rates by school level for milk, meat/meat alternate, fruit, vegetables, and grains from SNDA–III and applied those rates, unchanged, to the proposed rule's food group requirements from Tables 4 and 5.[29] These adjusted requirements are estimates of what elementary, middle, and high schools are likely to *serve* to students after implementation of the proposed rule. The unadjusted requirements are what schools must *offer* to their students to be in compliance.

The take-rate adjusted requirements not satisfied by combination foods must be met with single offerings of meat or meat alternates, grains, fruit, vegetables, and milk. We computed weighted average prices for these broad food groups, and for dark green, deep yellow and other vegetable varieties, from the SLBCS–II dataset. We estimated the cost of whole grains relative to all grain and bread products with information contained in a food price database developed by USDA's Center for Nutrition Policy and Promotion. The prices per unit of these foods, multiplied by the balance of the proposed rule's requirements that are not met by combination foods, give a total cost per meal for single item foods.

Note that this analytic framework uses an identical set of combination foods in the baseline and proposed rule cost estimates; we do not attempt to construct a reformulated set of combination foods to satisfy the proposed rule's requirements for whole grains or dark green, yellow, and other vegetable varieties. The deficits in whole grains and in dark green and other vegetable varieties are satisfied entirely through increased offerings of single foods.[30] As a result, the cost per unit of combination foods served is unchanged in the baseline and under the proposal, and the entire cost of meeting the new rule's requirements is reflected in the cost of single foods.

In practice, we expect manufacturers may offer reformulated versions of popular combination foods, and that schools may incorporate more whole grains and vegetable varieties in their entree recipes, so that students may not be expected to consume all of their whole grains and healthier vegetables as single foods. Implicit in this modeling approach is the assumption that the cost of serving more whole grains and vegetable varieties is similar, whether those foods are part of combination recipes or single items. The reasoning behind this assumption is that the likely effect of these reformulations on the cost of combination foods is uncertain. While some varieties of combination foods may help schools meet the new requirements at lower cost than single foods, others may be developed to provide greater student acceptance or ease of preparation than single items. These products could command higher prices. We thus assume that, on average, these two propensities combine to result in no net difference in the cost of whole grains and vegetable varieties as combination foods or as single items.[31]

The proposed rule encourages schools to meet the fruit requirement with whole fruit rather than juice "whenever possible" in order to increase fiber consumption. Schools may therefore find it necessary to offer more whole or cut-up fruit relative to fruit juice than they offer today. For this reason, this cost estimate assumes that the proposed rule's entire increase in the fruit group requirement may be satisfied by schools through additional servings of whole or cut-up fruit; the estimate assumes that schools may serve no more fruit juice to students under the proposed rule than they serve today. As a result, there is no added cost for fruit juice in Table 11.

The methodology outlined above generates a set of per-meal cost estimates for breakfast and lunch under the requirements of the proposed rule. Like our baseline estimates, these are multiplied by weighted food group

[27] Many large commercial food vendors prepare their own CN labels to help market their foods to SFAs. Other labels are developed by USDA.

[28] Because CN crediting values and *MyPyramid* equivalents are not the same, information from the *MyPyramid* database was used only to determine *relative* shares of vegetable or grain subtypes. FNS also used the *MyPyramid* database to determine if particular combination foods contained *any* dark green vegetables, orange vegetables, *etc.*

[29] Our take rates are weighted averages computed from all school level records on SNDA–III. We cap individual school take rates for any food group at 100%. We assume that these take rates remain unchanged after implementation of the proposed rule for two primary reasons: lack of an evidence-based alternative, and to avoid understating the costs of the rule. We discuss our assumption of constant take rates, and examine the cost implications of altering that assumption, in section III.B.5.

[30] The amount of refined grains in combination foods in excess of proposed rule requirements are offset by subtracting the value of an equivalent amount of single food refined grain products from the proposed rule's per-meal cost.

[31] Note that we are only referring to the incremental cost of foods above the quantities already purchased by schools (singly or in combination items), not the overall cost of all foods in the proposed meal patterns.

inflation factors, then multiplied by the projected number of meals served to generate projected aggregate costs through FY 2016.

Labor costs: Compliance with this rule is also likely to increase labor costs because of the need for more on-site preparation, and less reliance on prepared foods, than current requirements. The challenge faced by schools in reducing the sodium content of school meals, one element of both the IOM recommendations and the proposed rule, illustrates the need for additional labor hours by school kitchen staff.

> [M]ore local food preparation and the use of a greater proportion of fresh foods and frozen vegetables could result in acceptable school meals with a lower sodium content. However, many food production kitchens are designed to heat and hold food items rather than to prepare them.[32]

In addition to the implied need for new kitchen equipment, IOM notes that "switching from heat and hold to food production requires the addition of staff. Those districts that estimate meals per labor hour (MPLH) to monitor productivity may see an unfavorable decrease in their numbers." [33]

If schools choose to prepare more meals on-site to meet new requirements, IOM sees the need for "greater managerial skill," and "more skilled labor and/or training." [34] At the same time, lesser reliance on prepared foods offers some opportunity for offsetting savings.

> An empirical analysis of data from 330 Minnesota school districts found that "healthier" meals had higher labor costs (for on-site preparation) but lower costs for processed foods (Wagner, *et al.,* 2007). The authors call for funds to be made available for labor training and kitchen upgrades. They suggest that higher Federal meal reimbursement rates may be unnecessary (under the assumption that the meals do not cost more to produce because lower food costs offset higher labor costs).[35]

The effect of the proposed rule's meal requirements on the mix of food and labor costs is unclear. The proposed rule requires schools to offer relatively more foods with higher unit costs than schools now offer to their students. The rule requires, for example, that schools replace many of their refined grain foods with whole grain substitutes. Because prices for whole grain products tend to exceed the prices of similar products made with refined grains, savings from eliminating a particular refined grain product is more than offset by the cost of its whole grain counterpart. Where pre-baked whole grain foods are simply substituted for pre-baked refined grain products, or whole grain flour is substituted for refined flour in existing recipes, the added cost of serving these new foods is strictly a food cost; labor costs may not increase at all.

But the rule includes other provisions that are likely to increase both food and labor costs. One is the requirement that schools offer more vegetables, from a variety of vegetable subgroups, than schools tend to offer today. Some schools may choose to meet those targets by offering vegetables in school salad bars. It is not difficult to imagine that the cost of installing and maintaining a salad bar could increase the overall cost of school meal production. Similarly, to meet the proposed rule's calorie and fat requirements, schools may find it necessary to rely less on pre-purchased entrees, and hire more central kitchen or cafeteria workers to prepare healthier meals from scratch.

SLBCS–II data show that the cost of purchasing food accounted for 45.6 percent of SFA reported costs, on average. Labor accounted for an additional 44.5 percent of reported SFA costs. The remaining 9.9 percent of reported costs are attributable to "supplies, contract services, capital expenditures, indirect charges by the school district, *etc.*" [36] Labor costs are broadly defined in the SLBCS–II to include the costs of foodservice administrative tasks such as planning, budgeting, and management, and foodservice equipment maintenance.[37] Some of these tasks are detailed in section III.C.1. These tasks include training food preparation staff, servers, and cashiers. They also include the work of individuals who plan menus and prepare recipes.

For purposes of this analysis, we assume that the relative contributions of food and labor to the total cost of preparing reimbursable school meals will remain fixed at the levels observed in the SLBCS–II. As a result, we estimate that labor costs increase on a nearly dollar for dollar basis with estimated food costs.[38] We estimate that the proposed rule may increase schools' food costs by about 12 percent. Although labor costs relative to food costs have held steady over many years,[39] this approach may overstate labor costs. We explore the potential effect of labor costs growing at a somewhat lower rate in section III.B.5.

Food and Labor Cost Summary: Table 10 summarizes the estimated increase in food and labor costs associated with the proposed rule through FY 2016.[40] (The final two rows of Table 10 also include the estimated administrative costs to State agencies.) Overall, we estimate that the proposed rule would increase the total cost of reimbursable school meals by $6.8 billion over five years; the cost of food would increase by $3.4 billion, and the cost of labor would increase by $3.3 billion. In the first year of full implementation (FY 2015),[41] the combined cost of food and labor is expected to be about 12 percent higher under the proposed rule than under existing requirements. The estimated additional cost of *food* for a reimbursable lunch increases from about 3.4 cents in 2012 to 7.7 cents in 2016; the equivalent increase in food costs for a reimbursable breakfast grows from 18.8 cents to 26.1 cents. These rates roughly double—to 15.1 cents and 51.6 cents—when the estimated cost of labor is included.

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[32] IOM 2009, p. 110.

[33] *Ibid.*

[34] IOM 2009, p. 148.

[35] *Ibid.*

[36] USDA 2008, p. 3–5.

[37] USDA 2008, p. 3–9.

[38] The estimates contained in this analysis assume labor costs equal to food costs multiplied by (44.5/45.6), the ratio of reported labor to food costs in the SLBCS–II.

[39] Labor costs as a share of the total costs of preparing school meals were found to be 43.8 percent in FNS's SY 1992–1993 School Lunch and Breakfast Cost Study I, and 44.5 percent in the SY 2005–2006 School Lunch and Breakfast Cost Study II (a statistically insignificant difference). Food costs as a percent of total costs grew slightly from 45.6 percent in SY 1992–1993 to 48.3 percent in SY 2005–2006. But this change, too, is statistically insignificant. USDA 2008, p. 9–2.

[40] For purposes of this analysis, the new standards are assumed to take effect at the start of SY 2012–2013. Because the 2012–2013 school year begins in July 2012, there is just a small cost in Federal FY 2012. Note that these figures assume no effect on student participation. We discuss the possible effects of the proposed rule on student participation in section III.F. We examine the effect of alternate participation assumptions in section III.B.5.

[41] Two years after implementation of the rule, all grains servings offered to meet meal pattern requirements must be whole grain rich. If the rule is implemented in SY 2012–2013, then the 100 percent whole grain requirement takes effect in SY 2014–2015 or FY 2015.

Table 10: Food and Labor Cost Summary

	Fiscal Year					
	2012	**2013**	**2014**	**2015**	**2016**	**Total**
Food Costs						
Lunch						
Total Cost (millions)	$29.5	$206.6	$248.8	$403.5	$434.7	**$1,323.2**
Per Meal	0.034	0.037	0.045	0.072	0.077	
Breakfast						
Total Cost (millions)	$62.3	$419.9	$456.1	$565.4	$593.5	**$2,097.1**
Per Meal	0.188	0.194	0.207	0.253	0.261	
Lunch + Breakfast						
Total Cost (millions)	$91.8	$626.5	$704.9	$968.9	$1,028.2	**$3,420.4**
Per Meal	0.077	0.081	0.091	0.123	0.129	
Food + Labor Costs						
Lunch						
Total Cost (millions)	$58.3	$408.3	$491.6	$797.4	$859.0	**$2,614.5**
Per Meal	0.068	0.074	0.088	0.142	0.151	
Breakfast						
Total Cost (millions)	$123.0	$829.7	$901.2	$1,117.1	$1,172.7	**$4,143.7**
Per Meal	0.371	0.383	0.409	0.499	0.516	
Lunch + Breakfast						
Total Cost (millions)	$181.3	$1,237.9	$1,392.8	$1,914.5	$2,031.7	**$6,758.2**
Per Meal	0.153	0.161	0.179	0.243	0.256	
Food + Labor + State Administrative Costs						
Lunch + Breakfast						
Total Cost (millions)	$181.5	$1,246.8	$1,401.9	$1,923.8	$2,041.3	**$6,795.2**
Per Meal	0.153	0.162	0.180	0.245	0.257	

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3. Food Cost Drivers

Table 11 provides a breakdown in the estimated food costs of the proposed rule by seven broad food categories. Consistent with the *Dietary Guidelines,* the proposed rule will require schools to offer more fruits, vegetables, and whole grains than they currently offer today.

Changes in school demand also impact food producers. The figures in Table 11 indicate that the economic costs and benefits of the proposed rule may not be shared equally by producer groups.

TABLE 11—ESTIMATED FOOD COSTS BY FOOD CATEGORY

[Dollars in millions]

Food group	Fiscal year					
	2012	2013	2014	2015	2016	Total
Milk	−$4.4	−$29.0	−$29.8	−$30.5	−$31.3	−$125.1
Meat or Meat Alternate	3.1	22.5	24.9	27.6	30.5	108.6
Fruit Juice	0.0	0.0	0.0	0.0	0.0	0.0
Fruit (non-juice)	42.3	286.1	301.4	317.1	334.1	1,281.0
Vegetables	75.6	515.2	547.8	581.2	617.5	2,337.3
Refined Grains	−116.0	−787.5	−964.7	−1,766.5	−1,869.1	−5,503.8
Whole Grains	91.2	619.3	825.3	1,840.0	1,946.5	5,322.3

TABLE 11—ESTIMATED FOOD COSTS BY FOOD CATEGORY—Continued

[Dollars in millions]

Food group	Fiscal year					
	2012	2013	2014	2015	2016	Total
Total Cost of Proposal	91.8	626.5	704.9	968.9	1,028.2	3,420.4

Milk: This impact analysis estimates that the amount of milk served to students may not change after implementation of the proposed rule.[42] However, the rule does require schools to serve only low-fat or fat-free milk in the school meals programs. Because the per-unit cost of low-fat and fat-free milk is less than the average per-unit cost of the mix of milk products now served in schools, the cost of serving milk under the proposed rule is reduced.

Fruit Juice: The estimate assumes that schools may satisfy the rule's increased fruit requirement entirely through additional servings of whole or cut-up fruit, not fruit juice. We expect that schools may have to encourage consumption of additional whole or cut-up fruit in order to satisfy this requirement. The cost estimate assumes that the amount of fruit juice served to students may not increase above the levels assumed in the baseline estimate. As a result, the relative share of whole or cut-up fruit to fruit juice servings offered to (and taken by) students may increase after implementation of the rule.

Grains: The proposed rule initially requires that half of grains offered to students be whole grain rich. Beginning in SY 2014–2015, the rule requires that all grains served be whole grain rich. This change is reflected in the large changes in both the whole and refined grains figures between FY 2014 and FY 2016.

Note that the total amount of grain products served under the proposed rule may be less than the amount served in the baseline (the per-meal amount taken in SNDA–III). The effect of this net reduction in total grains served is reflected in figures for fiscal years 2012 to 2014, where the cost decrease for refined grains exceeds the cost increase for whole grains. Throughout the estimation period, we assume that the unit cost of whole grains exceeds the unit cost of comparable refined grain products. Despite this, the net reduction in total grain products served through FY 2014 more than offsets the increased unit cost of whole grains. After FY 2014, when the rule's 100 percent whole grain rich requirement takes effect, the higher relative cost of whole grains to refined grains exceeds the savings from the net reduction in grain products served.

4. Comparison of FNS and IOM Cost Estimates

IOM prepared its own food cost estimate for its recommended meal pattern changes. The methodology behind that estimate is discussed in *School Meals: Building Blocks for Healthy Children* (IOM 2009). While IOM relies on SLBCS–II and SNDA–III, the same primary sources used by FNS, to estimate unit costs and baseline quantities served, its methodology differs from ours in several ways.

Perhaps the most significant difference is in the establishment of baselines. We used all records on the SNDA–III dataset to estimate baseline quantities of food served and student take rates. IOM limited its analysis to a set of six representative baseline menus selected from the SNDA–III dataset. IOM selected one 5-day lunch menu and one 5-day breakfast menu for each of three age-grade groups (elementary, middle, and high school) at random from a subset that excluded practices identified as uncommon.[43] The goal of both methodologies is to estimate a baseline food cost representative of all schools that participate in the Federal school meals programs. We have not attempted to isolate and quantify the effect of this methodological difference on our cost estimates.

Another important difference between the IOM and FNS estimates is our use of different student take rates in preparing food cost estimates for the recommended meal patterns. We computed take rates from SNDA–III and applied them, largely unchanged, to the food group serving requirements of the proposed rule.[44] We do not increase take rates in anticipation of greater demand for better meals, nor reduce take rates in anticipation of a decline in student acceptance of new vegetable varieties, whole grains, or low fat milk relative to the starchy vegetables, refined grains, and higher fat milk on current school menus.[45] IOM modified observed take rates from SNDA–III where the expert judgment of committee members and school meal practitioners deemed it appropriate.[46] Additional differences in FNS and IOM take rates can be attributed to IOM's use of six representative school menus in its analysis; IOM computed its take rates from those schools alone. FNS take rates are computed from all schools on the SNDA–III dataset.

IOM estimated that food costs would increase by 4 to 9 percent for lunch, depending on student take rates for fruits and vegetables. For breakfast, IOM estimated an increase in food costs of 18 to 23 percent. Both of these ranges are based on unadjusted SY 2005–2006 prices from the SLBCS–II. In addition, both are for the requirements recommended for the first year of implementation, not including the more stringent whole grain requirement recommended for later introduction. The comparable FNS figures are 3 percent for lunch and 26 percent for breakfast.

5. Uncertainties

We made several simplifying assumptions in developing this cost estimate, reflecting gaps in available data and evidence. The most significant simplifications are discussed in Table 12. In most cases, our primary estimate reflects conservative assumptions, to avoid understating the costs of the proposal. In this section, we describe the impact of several alternative assumptions on the estimate. The cost impacts of these alternatives are presented in Table 14.

[42] *See* section III.B.5. for an examination of the cost implications of altering this assumption.

[43] IOM excluded menus that did not offer a reduced fat or fat free unflavored milk, offered only one entree, offered 15 or more entree options, offered juice drinks rather than 100% fruit juice, or offered dessert every day. IOM 2009, p. 307

[44] FNS caps individual school take rates at the food group category to 100 percent.

[45] As discussed elsewhere in this impact analysis, our take rate assumptions are intended to avoid understating the cost of the proposed rule given the uncertain response of both students and school foodservice workers to the new meal pattern requirements. We test the cost implications of adopting different take rates in section III.B.5.

[46] IOM 2009, p. 136.

TABLE 12—SIMPLIFYING ASSUMPTIONS

Item	Explanation and implications of simplifying assumptions
Take Rates	For each of several food groups, we used SNDA–III data to compute average "take rates" equal to the percentage of food servings taken by students for each serving offered to them. Take rates under current program rules vary by school, grade level, and menu planning system. They are, at best, a rough predictor of student behavior under the proposed rule, which imposes a single food-based meal planning system across all schools, and requires schools to offer a mix of foods somewhat different than many students are accustomed to. We apply these take rates to generate a primary cost estimate. But, recognizing the uncertainty of these take rates, the cost implications of different take rate assumptions are examined in the uncertainties section of the impact analysis.
Student Participation	The cost estimate assumes no change in student participation following introduction of the rule's new meal pattern requirements. However, we recognize that participation may increase due to better meals or decrease when favorite school foods are replaced with unfamiliar or less appealing options. We chose not to estimate a participation effect given the uncertainty about how schools may incorporate new foods into their menus, and what changes schools may make to a la carte and other non-NSLP/SBP "competitive" foods, factors known to affect NSLP/SBP participation. Schools have a financial interest in preserving the revenue stream that comes with serving Federally-reimbursable school meals. It is also unclear whether participation effects, if any, may prove temporary or permanent. We estimate the cost of the rule under an assumption of increased and reduced student participation in the uncertainties section.
USDA Foods	We include USDA Foods (formerly USDA commodities) in both the quantity and value of food served in its baseline and proposed cost estimates. This treatment of USDA Foods is consistent with the SLBCS–II which includes the value of USDA Foods in its computation of the cost of producing a school meal. We assume that USDA Foods will contribute comparably to the overall cost of preparing school meals under current and proposed program rules. We believe it is reasonable to ignore the value of USDA Foods in computing the estimated cost increase of the proposal.
Whole Grains	We apply a single take rate to both whole grain rich and refined grain products. A less conservative approach would have applied a lower take rate to whole grain foods, at least when offered singly, rather than as part of a combination entree. Further, this take rate is the same take rate observed in SNDA–III where the relative share of whole grain rich products is lower than the 50 percent share that schools must offer in the first two years of implementation, and much lower than the 100 percent share that must be offered thereafter. Testimony before the IOM expert committee by University of Minnesota Professor Leonard Marquart documented steps SFAs can take to phase in whole grains in a manner that promotes high take rates.
Labor Rates	We assume that the relative contributions of food and labor to the total cost of preparing reimbursable school meals will remain fixed at the levels observed in the SLBCS–II study. The study found that the cost of purchasing food accounted for 45.6 percent of SFA reported costs on average, while labor accounted for 44.5 percent of reported costs. We therefore estimate that labor costs may increase on a nearly dollar for dollar basis with estimated food costs. Our assumption leads to a substantial increase in estimated labor costs, one that assumes schools may rely less on prepared foods and more on on-site preparation. We re-estimate the cost of the proposed rule assuming a smaller increase in labor costs in the uncertainties section.
Macronutrient Requirements and Calories.	The cost estimate developed in this impact analysis is based entirely on the cost of adding or deleting foods from particular food groups. The cost estimate accounts for current price differences in whole grains compared to refined grain products, low fat milk compared to 2 percent or whole milk, whole fruit compared to fruit juice, and vegetables by subcategory. But it does not account directly for differences in the costs of comparable combination entrees with different levels of sodium, fat, or calories. SNDA–III found that school lunches offered to students in SY 2004–2005 provided, on average, about 11 percent of calories from saturated fat. The proposed rule would limit this to 10 percent—a relatively modest reduction. Our cost estimate does take into account the added cost of more fruits and vegetables. It also takes into account the cost of shifting away from starchy vegetables, which reduces the relative share of french fries in the proposed rule estimate. Finally, the estimate accounts for the replacement of higher fat content milk with low fat and skim milk. All of these steps implicitly incorporate the cost of offering lower calorie and lower fat content meals into our estimate. We make an explicit assumption that a reduction in sodium can be achieved at minimal cost, at least over the short term, when proposed sodium requirements are only partially phased-in. This is one of the very few assumptions that, if wrong, tend to understate the cost of the proposed rule. But, given the decision to err on the side of overstating costs when making most other assumptions, we believe that the upside risk to an error on this assumption is small.

FNS and IOM Food Group Take Rates: For all food groups, we assume that observed (baseline) take rates from SNDA–III will continue to characterize student behavior after implementation of the proposed rule's meal requirements.[47] These take rates are weighted averages across schools that operated under nutrient-based, traditional food-based, and enhanced-food based systems in SY 2004–2005, calculated as follows:

Take rate = number of servings taken [1]/ (Servings offered [2]/meal * number of meals [3])

[1] Based on SNDA–III analysis of observed meals taken by students.

[2] Based on SNDA–III analysis of school menus/recipes.

[3] Based on SNDA–III observations of daily meal counts.

Data are not available to assess how student behavior across all schools may change in response to menus that simply offer more fruits, vegetables, and whole grains. One approach to model that response would be to apply take rates from schools that offered higher than average amounts of these foods in SY 2004–2005, but this occurred in a relatively small subset of schools sampled in SNDA–III; conclusions drawn based on their behavior may be

[47] We cap individual food group take rates at 100 percent in our proposed rule cost estimate.

misleading. In addition, upon implementation of the rule, schools may attempt to influence student behavior by developing appealing new menu items, or by taking other steps to encourage increased consumption of the fruits, vegetables, low-fat milk products, and whole grains emphasized by the rule. Because of these unknowns, FNS adopted a static take-rate assumption in developing its primary cost estimate.

IOM departed from observed take rates in developing its assumptions for its own cost estimate, drawing on expert opinion from school meal practitioners about likely student behavior. IOM's assumed take rates, "which are based on data from SNDA–III but are adjusted to consider the recommended Meal Requirements, represent estimates that the committee considers realistic." [48]

Tables 13a and 13b compare the take rates applied by IOM and by FNS in developing their respective cost estimates.[49]

TABLE 13a—IOM AND FNS BREAKFAST TAKE RATES AFTER IMPLEMENTATION OF IOM RECOMMENDATIONS AND FNS PROPOSED RULE

Food group	IOM Breakfast take-up rates			FNS Breakfast take rates		
	Elementary	Middle	High	Elementary	Middle	High
Fluid Milk	98%	92%	96%	90%	81%	81%
Meat/Meat Alternate	62% or more	68% or more	62% or more	85%	84%	82%
Fruit	70%	70%	75%	84%	82%	77%
Grain	100%	100%	100%	89%	81%	83%

TABLE 13b—IOM AND FNS LUNCH TAKE RATES AFTER IMPLEMENTATION OF IOM RECOMMENDATIONS AND FNS PROPOSED RULE

Food group	IOM Lunch take-up rates			USDA Lunch take rates		
	Elementary	Middle	High	Elementary	Middle	High
Fluid Milk	98%	97%	88%	91%	81%	78%
Meat/Meat Alternate	100%	100%	100%	91%	91%	90%
Fruit	80%	80%	60%	70%	58%	50%
Vegetables	55%	60%	65%	85%	83%	86%
Grain	65%–100%	65%–100%	70–100%	86%	86%	79%

Subsections a through c, below, explain three alternative applications of IOM take rate assumptions.

a. Fruit and Vegetable Take Rates—Use IOM Estimates

In Table 14, Section A, we substitute the fruit and vegetable take rates used by IOM to model student behavior after implementation of new meal patterns for the take rates used in FNS's primary cost estimate under the proposed rule.[50] IOM applied lower take rates than FNS for vegetables, but applied higher take rates for fruit. The reduced cost estimate presented in Table 14, Section A simply substitutes the post-implementation fruit and vegetable take rates assumed by IOM for the post-implementation take rates assumed by FNS. The net result of using IOM's assumptions would reduce the estimated cost of implementing the proposed rule by $3.5 billion.

b. IOM Fruit and Vegetable Take Rates with Labor Cost Adjustment

The effect of using IOM's vegetable take rates is to reduce the change in food cost for lunch in implementing the proposed rule to zero. Under our approach, labor costs are assumed to remain fixed, relative to food costs, at the ratio estimated in the SLBCS–II. As a result, the figures in Table 14, Section A assume no increase in the labor costs of preparing lunches under the proposed rule. However, the work required to prepare lunches (and breakfasts) that meet the new food group, macronutrient, and calorie requirements could increase even if the costs of purchasing food for those meals is about equal under current and proposed rules.

Table 14, Section B reflects estimated food costs using IOM's estimated fruit and vegetable take rates, and the labor costs estimated by FNS for its primary estimate (from Table 6). This revised estimate assumes that the relationship between food and labor costs diverges from the relationship observed in SLBCS–II and the net effect of this assumption would reduce the estimated cost of implementing the proposed rule by $1.8 billion.

c. Using All IOM Take Rates

As described in section III.B.4, IOM and FNS took different approaches to anticipating students' response to the proposed meal pattern changes. IOM relied on observed take rates from SNDA–III as well as the best judgment of school foodservice practitioners. While some of IOM's take rates are higher than the ones used in our primary estimate, others are lower. The net effect of substituting IOM post-implementation take rates for FNS post-implementation take rates for all food groups (milk, meat, meat alternate, fruit/fruit juice, vegetables, and grain products) is displayed in Table 14, Section C. The net effect is a cost estimate that differs from our primary estimate by about 10 percent, a reduction in our primary cost estimate of $676 million.[51]

d. Cost of Whole Grains—Reduction over Time

The proposed rule requires schools to replace refined grains with whole grain rich foods. In the first two years of

[48] IOM 2009, p. 307

[49] *See* IOM 2009, pp. 309–315, for all of IOM's food group take rate assumptions. Note that some of IOM's assumed take rates are presented as ranges. For the cost estimate in Table 12, FNS uses the midpoint of these ranges.

[50] IOM take rates appear in tables L–1 through L–6 of IOM's School Meals report. IOM 2009, pp. 309–315.

[51] It is worth recognizing that the differences between IOM's estimate and our primary estimate also reflect differences in baseline assumptions. We did not alter our baseline take rates for this test.

implementation, whole grain rich products must make up half of all grain products offered to students. By the third year, schools must offer only whole grain rich products. At present, whole grain rich products cost more than similar refined grain products. The primary cost estimate developed above assumes that the relative price of whole grain rich to refined grain products will remain constant at FY 2009 levels throughout the five year forecast period. Part of the price difference, however, may be due to low supply of whole grain products in the market—in turn influenced by current low demand by schools. As IOM explains:

> Of greater concern is the relative lack of available whole grain-rich processed products on the market and acceptable in the school meals program. Hence some cost increases would be expected for the less available processed whole grain-rich products in the market. Several new whole grain products are being introduced through the USDA Foods program; over time, the availability of whole grain-rich products is expected to expand.[52]

The difference in price between whole grain rich and refined grain products may diminish over time. Table 14, Section D provides estimates of the cost of the proposed rule under the assumption that the difference in price between whole grain rich and refined grain products will disappear entirely at a rate of one-third per year from FY 2013 to FY 2015. The net result of this assumption would reduce the estimated cost of implementing the proposed rule by $2.5 billion.

e. Change in Participation—2 Percent Increase

As discussed in Table 12 above, we assumed that student participation would not change following the introduction of new meal requirements. Table 14 Sections E and F model the effects of altering that assumption.

Section E estimates the effect of a two percent increase in student participation on the cost of the rule relative to our primary cost estimate in Table 6. The dollar figures in Section E are the estimated cost to schools of preparing all meals served under our baseline assumption plus an additional 2 percent. Per meal costs for all of these additional meals are taken from Table 10. The additional meals are eligible for USDA reimbursement at the appropriate free, reduced price, or paid rates. However, the figures shown in Section E are not offset by these increased Federal reimbursements. The net cost to schools, after accounting for Federal reimbursements, would be lower. Because these costs reflect the provision of improved meals to additional children, we would expect a commensurate increase in the benefits resulting from addition of more fruits, vegetables, and whole grains to the diets of participating children. This participation assumption would result in a $1.4 billion increase over the cost of our primary estimate.

f. Change in Participation—2 Percent Decrease

Table 14, Section F models the effect of a two percent decrease in participation upon implementation of the new rule. A reduction in participation reduces the cost of compliance with the rule, relative to the primary cost estimate in Table 6.[53] Again, because the cost reduction reflects the provision of improved meals to fewer children, we would expect a proportionate decrease in the rule's benefits for participating children. The net effect of this assumption would be to decrease the cost of implementing the final rule by $1.4 billion.

g. Lower Rate of Increase in Labor Costs Than Food Costs

Our primary cost estimate assumes that the ratio of labor to food costs will remain fixed at the ratio observed in the SLBCS–II. Because we estimate a substantial increase in school food costs, our fixed labor to food cost assumption leads to a substantial increase in labor costs.

Some increase in labor costs is likely. Schools may find it necessary to prepare more meals on site to incorporate added vegetables and whole grains, and to reduce levels of sodium and fat. In addition, schools are likely to incur additional expense to train foodservice workers on the new meal requirements. However, commercial suppliers can be expected to develop and introduce healthier products for the school market ahead of implementation of a final rule; other products may be introduced after implementation. Schools may find that new training replaces some training planned in existing budgets.

It is also uncertain that more expensive foods are proportionately more expensive to prepare than less expensive foods. Long-term stability in the relationship between food and labor costs is unremarkable if the primary factor driving both is an increase in the number of participants and meals served. Though the limited data available shows that this ratio remained stable between SY 1992–1993 and SY 2005–2006—a period that included program changes under the School Meals Initiative—there are reasons to suspect that this relationship may not hold in response to a sudden increase in food costs unrelated to the number meals served.

Table 14, Section G models an increase in labor costs that is 75 percent of the level in our primary estimate, to reflect a shift in the balance between food and labor costs under the proposed rule. This assumption would result in an $834 million decrease of our primary cost estimate of implementing the proposed rule.

h. Extent of School Compliance With New Requirements

Results from SNDA–III indicate that most schools do not fully comply with the current nutrition requirements for meals served and reimbursed through the school lunch and breakfast programs. Although a large majority of schools (more than 80 percent) served lunches in SY 2004–2005 that met requirements for protein, calcium, and iron, and more than 70 percent served lunches that met requirements for vitamins A and C, fewer than half met minimum calorie requirements, just 30 percent met the standard for saturated fat, and only 21 percent met the standard for total fat. Overall, while most schools met most of the requirements for a nutritious school meal, just 7 percent of schools served reimbursable lunches that met every requirement.[54]

Despite the challenge of meeting these requirements, it is relatively uncommon for schools to serve meals for Federal reimbursement that lack required food group or meal components. FNS' study of improper payments in the school meal programs found no point-of-sale error in identifying reimbursable lunches at 45 percent of schools in SY 2005–2006, and high error rates (more than 20 percent) in just 2 percent of schools. These errors were somewhat more prevalent in breakfast service, but still far below the level of noncompliance with nutrient standards.[55]

Taken together, these results indicate that schools make a relatively successful effort to comply with food group and meal component requirements, but serve too many high fat options in satisfaction of those requirements.

[52] IOM 2009, p. 8–22

[53] This reduction in cost comes at the expense of reduced Federal meal reimbursements.

[54] USDA 2007, vol. I, p169. For breakfast, schools tend to perform better, though just 30 percent offered meals that met the SMI standard for calories; *see* p. 204.

[55] USDA 2007b, vol. I, p. 116. The comparable rates for breakfast were 48 percent with no error, and 11 percent with error rates above 20 percent.

The proposed rule is intended to facilitate meeting most micro- and macronutrient targets by focusing on a set of food group requirements. This plays to the strengths of the current system which tends to produce meals that satisfy food item or meal component requirements, but is less successful at monitoring the nutrient content of those foods. The cost estimate we developed above is the cost of serving more fruits and vegetables, substituting whole grains for refined grains, and limiting the fat content of fluid milk, as required by the proposed rule's food group requirements; the estimate assumes, we believe reasonably, that schools may comply with those food level changes.

Although schools are expected to satisfy most nutrient requirements through compliance with the rule's proposed food group standards, IOM recognized the need to retain four separate nutrient targets for saturated fat, *trans* fat, calories, and sodium. While schools may have difficulty meeting those requirements, at least in the short term, they may eventually meet them within the same food group requirements that are effective on initial implementation of the rule. For this reason, we believe that less than full compliance with these four nutrient standards offers little cost savings to schools.

We estimate that a committed effort by schools to serve meals consistent with the proposed rule's food-based requirements may increase costs as summarized in Table 6. Nevertheless, it remains possible that some schools may find it operationally difficult, or too costly, to prepare and serve meals that satisfy the new food group and subgroup requirements of the rule. If some schools fall short of the proposed food group requirements in the initial years after implementation by not serving enough of certain foods, the aggregate cost of the rule may be lower than estimated.

The nature of noncompliance with the proposed rule, if observed, is likely to resemble compliance with current standards as illustrated by SNDA–III. That is, most schools can be expected to work toward and achieve compliance with most provisions of the rule. We would expect some variation across schools in the degree to which individual food group requirements are met, given differences in current menus, what students in different schools are accustomed to eating, and variations in school policy on a la carte foods, other non-program choices, implementation of offer versus serve, *etc.* But it is also possible that some schools may be unable to make any changes to current menus, at least initially. Those schools' compliance with the proposed rule may depend on current differences in the content of school menus relative to the new standards.

Table 14, Section H presents an estimate of the cost of the rule under the alternate assumption that some schools fail to meet the proposed rule's food group requirements. This alternate estimate looks to SNDA–III's school-level compliance rates with current nutrient standards to model compliance with proposed rule food group requirements. Specifically, the estimate assumes:

1. Initial (FY 2012 and FY 2013) school-level compliance with the proposed standard for the meat group is equal to the average of the observed school-level rates of compliance with the SMI standards for protein and iron,
2. Initial school-level compliance with the proposed fruit and vegetable group standards matches the average of the observed school-level rates of compliance with SMI standards for vitamins A and C,
3. Initial school-level compliance with the fluid milk standard equals the average of the observed school-level rates of compliance with the SMI standards for protein and vitamin A,
4. Initial school-level compliance with the grains standard equals the average of the observed school-level rates of compliance with SMI standards for iron, protein, and vitamin A.

In each case, school-level compliance means the percent of schools that serve meals that meet the current or proposed requirements. For schools that do not initially comply with a proposed food group standard, we assume that they may serve the same amount from that food group in fiscal years 2012 and 2013 that they did prior to implementation of the rule. In that way, we assume a distribution of food level compliance rates based on actual recent performance. This recognizes that some schools are much closer to meeting particular food group standards than other schools. The alternative estimate assumes that these schools' average rate of compliance may rise to 100 percent, in equal increments, over the FY 2014 through 2016 period.

This assumption of less than full compliance would reduce the five year cost of the rule by $743 million.

i. Cost Attributable to Noncompliance With Existing Meal Requirements

In subsection h, we point to results from SNDA–III that show most schools fall short on at least some SMI nutrient standards for lunch and breakfast.

The cost estimate developed in this impact analysis measures the difference in the cost of serving meals that comply with the proposed rule's requirements, and the current cost of serving meals consistent with the findings of SNDA–III. Note that in concept, some portion of that cost difference could represent the cost for schools to reach existing nutrition requirements. Arguably, any cost incurred to reach existing standards should not be considered a cost of the proposed rule.

We note, however, that an assessment of the cost to schools of changing meals to achieve current nutrition requirements is sharply limited by a lack of specific relevant data . Existing requirements for school meals consist of a limited number of food item requirements *and* a range of nutrient standards. Most schools that do not meet current standards are missing one or more *nutrient* standards—most commonly, those for total fat, saturated fat, and calories.

The proposed rule, as IOM recommended, moves more fully to a set of *food-based* standards—requiring increases in particular kinds of foods (such as fruits and vegetables), and replacement of other foods with different types (whole-grain versus refined grain products, and low fat versus full fat dairy). The proposed rule includes only four stand-alone nutrient requirements (for sodium, saturated fat, calories and *trans* fat).

The estimates presented in this analysis address the cost of providing more fruits and vegetables and replacing some or all high refined grains with whole grains—changes that could be modeled using school food purchase and cost data. In contrast, many of the kinds of changes needed to meet current standards, such as changing from frying to baking, and replacing full-fat milk with lower-fat varieties, would cost little. And for some nutrients, relatively small changes may be sufficient to reach current standards. For example, while SNDA–III shows that few schools met current requirements for total fat and saturated fat at lunch, on average schools were relatively close to meeting them. So, while just 21 percent of schools served lunches with no more than 30 percent of calories from total fat, the mean percent of energy from total fat across all schools was only 33.8 percent. For saturated fat, just 30 percent of schools met the 10 percent of total calories standard, but the mean percent of calories across all schools was just 10.9 percent. If reductions in those measures can be achieved with modest changes in menus and preparation methods, then the cost to meet them

would represent a small part of the overall cost of moving to the proposed rule's standards. At the same time, it is plausible to envision changes to meet existing standards, for vitamins A and C for example, that would cost nearly as much as the proposed rule's food group standards for fruits and vegetables.

Second, the cost of compliance with existing rules relies as much on assumptions about student acceptance of certain foods and menus as it does on the cost per nutrient. This too can be illustrated with SNDA–III data. School compliance with current SMI standards is far lower in high schools than in elementary schools for almost all nutrients. Because "offer versus serve" (OVS) is required in high schools, meals served to high school students better reflect student preferences than meals served to elementary school students, as roughly one in five elementary schools do not use OVS.[56] Given a choice, the SNDA data indicates that students tend to select foods that do not satisfy current nutrient standards. That does not mean that schools cannot offer a mix of foods that students accept, but it may take a more comprehensive and costly change in school menus to gain that acceptance.

For these reasons, we do not know the likely order of magnitude of the estimated cost to reach current standards.

Table 14 below assumes that State administrative costs are not impacted by any of the alternate assumptions (a–h) listed above.

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[56] SNDA–III found that 78 percent of elementary schools and 93 percent of middle schools used OVS in SY 2004–2005. These percentages are the same for lunch and breakfast. USDA 2007, vol. I, Table II.11A, p. 52.

Table 14: Cost of Proposed Rule under Alternate Assumptions

	Fiscal Year					
	2012	2013	2014	2015	2016	Total
Section A. Fruit and Vegetable Take Rates - Use IOM Estimates						
Food Costs	$49.3	$332.4	$360.7	$449.6	$475.0	**$1,667.0**
Labor Costs	48.1	324.4	352.0	438.7	463.6	**1,626.8**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$97.6**	**$665.7**	**$721.7**	**$897.6**	**$948.2**	**$3,330.7**
Section B. IOM Fruit and Vegetable Take Rates with Labor Cost Adjustment						
Food Costs	$49.3	$332.4	$360.7	$449.6	$475.0	**$1,667.0**
Labor Costs	89.6	611.4	687.9	945.6	1,003.4	**3,337.9**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$139.0**	**$952.7**	**$1,057.6**	**$1,404.4**	**$1,488.1**	**$5,041.8**
Section C. Using All IOM Take Rates						
Food Costs	$83.7	$560.2	$624.8	$884.2	$925.5	**$3,078.4**
Labor Costs	81.7	546.7	609.8	862.9	903.2	**3,004.2**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$165.5**	**$1,115.7**	**$1,243.6**	**$1,756.4**	**$1,838.3**	**$6,119.6**
Section D. Cost of Whole Grains – Reduction Over Time						
Food Costs	$91.8	$557.3	$532.7	$475.5	$506.8	**$2,164.1**
Labor Costs	89.6	543.8	519.8	464.0	494.6	**2,111.9**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$181.5**	**$1,109.9**	**$1,061.6**	**$948.8**	**$1,011.1**	**$4,313.0**
Section E. Change in Participation - 2 Percent Increase						
Food Costs	$115.8	$787.6	$874.1	$1,150.2	$1,217.8	**$4,145.6**
Labor Costs	113.0	768.6	853.1	1,122.5	1,188.4	**4,045.6**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$228.9**	**$1,565.1**	**$1,736.2**	**$2,282.0**	**$2,415.9**	**$8,228.1**
Section F. Change in Participation – 2 Percent Decrease						
Food Costs	$67.7	$465.4	$535.7	$787.6	$838.6	**$2,695.1**
Labor Costs	66.1	454.2	522.8	768.6	818.4	**2,630.1**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$134.0**	**$928.5**	**$1,067.5**	**$1,565.6**	**$1,666.7**	**$5,362.2**
Section G. Lower Rate of Increase in Labor Costs than Food Costs						
Food Costs	$91.8	$626.5	$704.9	$968.9	$1,028.2	**$3,420.4**
Labor Costs	67.2	458.6	515.9	709.2	752.6	**2,503.4**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$159.1**	**$1,093.9**	**$1,229.9**	**$1,687.4**	**$1,790.4**	**$5,960.7**
Section H. Less than Full Compliance with the Proposed Rule						
Food Costs	$68.1	$464.9	$586.8	$896.1	$1,028.2	**$3,044.1**
Labor Costs	66.4	453.7	572.7	874.4	1,003.4	**2,970.7**
State Admin	0.1	8.9	9.0	9.3	9.6	**36.9**
Total	**$134.6**	**$927.5**	**$1,168.5**	**$1,779.8**	**$2,041.3**	**$6,051.8**

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C. Administrative Impact

1. School Food Authorities (SFA)

An initial increase in administrative staff time for training and implementation is anticipated at the SFA level. Most of these impacts will be limited to the transition to the rule's new requirements as a result of:

- Training staff on the required components of reimbursable lunches and breakfasts;
- Changes to menus and portion size may necessitate revisions to menus and recipes currently used by SFAs;
- Changes to food purchasing and commodity food use (for example, increasing purchases for fresh fruit and vegetables, whole grain products, and lower sodium products), as well as changes in the methods of preparation of food, may be necessary for many schools;
- Changes in SFA financial structure, as SFAs may need to review finances in order to determine how to deal with any cost changes associated with the proposed requirements;
- Forging new relationships with local farmers to supply fresh produce

appealing to the tastes of school children; and

• Modifying a la carte foods and other foods at school to maintain NSLP and SBP participation rates.

The proposed rule also increases the length of State reviews of SFAs through the Coordinated Review Effort (CRE) by incorporating the requirements of School Meals Initiative (SMI) reviews, and increases their frequency to once every three years. SFAs that previously held separate CREs and SMIs may experience a decrease in burden, because they will undergo just one CRE every three years, rather than two reviews (one CRE and one SMI) every five years.

The proposed rule incorporates the provision of training and technical assistance by SAs to the SFAs. SFAs must, in turn, adjust their current training agenda to include the new requirements, as no funding has been provided in the proposed rule to accommodate new training.

FNS expects these additional burdens on SFA staff time and budgets may be offset by other benefits. For instance, new age/grade groupings would require school districts to offer different portion sizes instead of the same portions to all ages/grades. While this could be an additional burden to some SFAs, it could also reduce plate waste with use of more appropriate age/grade groupings. Moreover, it is expected that, as food service workers gain experience and become comfortable with the new requirements, administrative efforts associated with implementation may decline. Therefore, although an initial administrative impact is anticipated, FNS does not expect any significant long-term increase in administrative burden.

2. State Agencies

State Child Nutrition Agencies (SAs) play a key role in the implementation of school meal programs through their agreements and partnership with local SFAs. FNS anticipates that SAs that administer the school meals programs will work closely with SFAs to meet the requirements of the proposed rules, and to remove barriers that may hinder compliance.

Many changes associated with implementation of the proposed rule may result in an increased burden and additional required level of effort from States, such as:

• *Training and technical assistance:* SAs may provide training and technical assistance to SFAs on new calorie and meal pattern requirements, age/grade groupings, and revised nutrient requirements. Moving to a single, food-based menu planning system may simplify the meal service for some schools and will likely streamline the meal planning process, but may require initial training to accomplish.

Although SAs may meet most of this demand by modifying current training and technical assistance efforts, we recognize that SAs may incur additional costs assisting SFAs with the transition to the proposed requirements. Our cost estimate provides for an additional 80 hours per SA in each of fiscal years 2012 and 2013, for a total of $0.2 million.

• *Systems assistance:* SAs may assist SFAs with any changes in the meal planning process occurring as a result of this rule. This is included in our $0.2 million estimate for training and technical assistance.

• *Food procurement and preparation:* More fruits, vegetables, whole grains, and foods that are lower in sodium may be necessary to align meals with the proposed meal patterns. SAs may also review SFA contracts with food service management companies (FSMCs). We have not estimated this cost, but expect that it may be small.

• *Monitoring and compliance:* SAs may be required to conduct CREs more frequently, once every 3 years for each SFA; nutrient analysis will be required for all SFAs and will become an additional component of each CRE (although separate SMIs will be eliminated); nutrient-based menus will be eliminated and only food-based menu planning will be permitted; menus will be reviewed from a two-week period preceding the review date; and a breakfast meal will be reviewed as part of each CRE.[57]

SAs are currently required to conduct a CRE for each SFA once every 5 years; to conduct a nutrient analysis via SMI review for only those SFAs with food-based menu planning systems (although approximately 30 percent of these SFAs elect to conduct the nutrient analysis themselves); to review menus from a one-week period preceding the review date; and to review a breakfast meal only in the case of a follow-up CRE (which is only conducted in those cases in which problems are noted in the initial CRE). Total costs for each SA to complete a CRE include costs for staff labor, travel (including transportation, accommodations, and meals/incidental expenses), and possible printing costs for those SAs that provide CRE results to SFAs and FNS in hard copy rather than electronically.

Limited discussion with a small number of SA and FNS Regional Office officials suggest that a typical CRE or SMI review costs about $2,000 in 2010, with about half of that cost used for staff travel. Because travel is a largely fixed cost, SAs that previously conducted separate CRE and SMI reviews should realize some savings once SMIs are ended and the nutrient analysis is made part of the CRE. That may help offset some of the cost of increased CRE frequency. A mid-sized State that now conducts 100 CRE reviews might incur annual expenses of $200,000. Under the proposed rule, that SA could expect to conduct ⅔ more CRE reviews, or roughly 167 per year. If we assume conservatively that the SA realizes no savings from elimination of SMI reviews, its review costs would increase by $134,000 per year—an upper-bound estimate. If all SAs incurred this same expense, the total cost would be roughly $8 million per year by FY 2013.

3. USDA/FNS

FNS will assist State Agencies by providing nutrition education, training, guidance, and technical assistance to facilitate their work with local school food professionals. This may include developing training standards, materials, updated measures for nutrition analysis, and revisions to the food buying guide.

While we expect a small increase in administrative burden for FNS under the proposed rule because of the need to provide additional training and technical assistance to SAs, and to support their role in the CRE process, this may largely be met by adapting existing efforts to the new requirements.

D. Food Service Equipment

Changes in meal pattern requirements as a result of the proposed rule may cause some SFAs to require different, or additional, equipment than that which they currently possess. For example, some SFAs may need to replace fryers with ovens or steamers. In FY 2009, FNS solicited requests from SFAs for food service equipment grants, awarding $100 million in 2009 American Recovery and Reinvestment Act (ARRA) Equipment Grants and an additional $25 million in one-time funds included in the FY 2010 Agriculture Appropriations Act. In response to its solicitation, FNS received a total of approximately $600 million in grant requests from SFAs. The strong response to these grant programs indicates that schools could make productive use of an even greater

[57] FNS estimated in 1994 that extending the SFA review cycle from four to five years would decrease costs associated with this effort by 20 percent. (June 10, 1994, **Federal Register** Vol. 59, No. 111, p. 30234) A similar, but opposite, effect might be expected from shortening the cycle from five to three years.

investment in kitchen equipment. However, much of that demand is associated with the routine need to replace equipment that is nearing the end of its useful life—a cost that is appropriately covered by USDA meal reimbursements and other sources of food service revenue. Although some schools may need additional upgrades to prepare meals that meet the proposed rule's standards, we do not have the data necessary to assess that need or to estimate the associated cost. The $125 million in kitchen equipment grants distributed to schools through ARRA funds and the FY 2010 appropriation should have addressed much of the most pressing need. For these reasons, we do not include additional incremental equipment costs as a result of the proposed rule in our estimate.

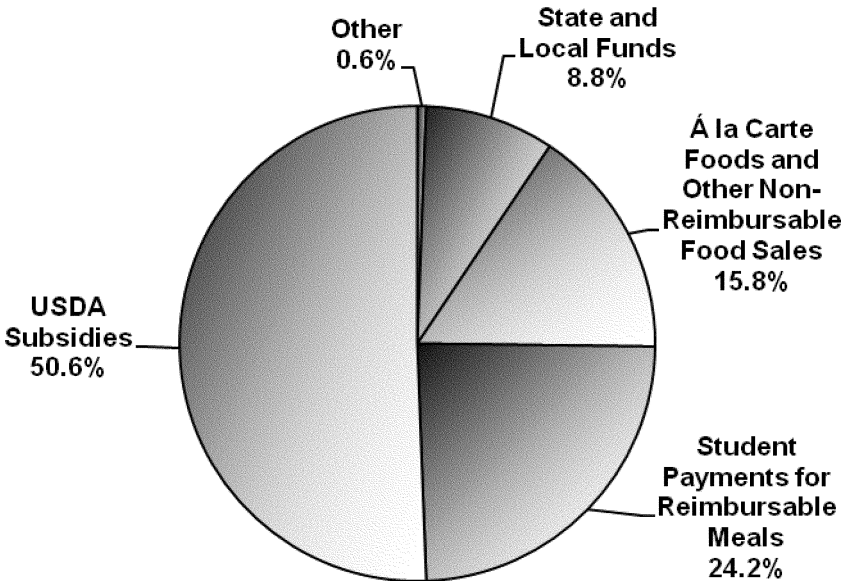
E. Implementation of Proposed Rule—SFA Resources

We estimate that the proposed rule may raise the average cost of producing and serving school lunches by almost 7 cents and school breakfasts by 37 cents on initial implementation. By FY 2015, when the 100 percent whole grain rich requirement takes effect, the cost per lunch may be 14 cents higher than our baseline estimate; the cost per breakfast may be 50 cents higher than our baseline.

Not all schools will face the same cost changes. Schools with menus that already emphasize fruits, non-starchy vegetables, and whole grains may need to make fewer changes, and the costs of implementation in those schools may be lower than average. Because the per-meal costs of complying with the proposed requirements are much higher for breakfast than for lunch, the overall costs of implementation in schools that serve more school breakfasts relative to lunches may be higher than the costs faced by schools that do not serve breakfast.

SFAs have a variety of funding sources used to cover the cost of preparing and serving school meals. The SLBCS–II found that about half of average SFA revenues are provided by Federal reimbursements (cash and donated foods), about one-quarter by payments from participating families, and the remainder from other sources (*See* Figure 3).

Figure 3: Composition of SFA Revenues[58]



Covering the increased costs estimated to implement the proposed rule may be challenging for many schools. However, some schools are already making substantial progress using available resources. USDA's HealthierUS Schools Challenge (HUSSC) recognizes elementary schools that meet voluntary school meal and physical activity standards. HUSSC school meal standards exceed NSLP requirements on several levels, including requirements for a variety of vegetables each week, including dark green and orange vegetables and legumes; a variety of whole fruits, and limits on fruit juice; and whole grain and low fat milk requirements. USDA has certified more than 840 HUSSC schools since 2004. HUSSC schools have demonstrated an ability to operate cost-effective school meals programs that emphasize many of the same foods required by the proposed rule. These schools receive no financial assistance from USDA beyond the meal reimbursements and USDA Foods available to other schools that participate in the Federal school lunch and breakfast programs.

Most schools will have a number of options and flexibilities within available revenue streams and operational approaches that can help to balance costs and resources.

Federal Reimbursements: As noted above, about half of all SFA revenues are from Federal reimbursements. These payments are adjusted annually for changes in food and labor costs by statute.[59] SLBCS–II found that in 2005–

[58] USDA 2008, p. xii.

[59] The Healthy, Hunger-Free Kids Act of 2010 increases the Federal subsidy for reimbursable school lunches by 6 cents on implementation of final regulations to update the school meal patterns. All SFAs in compliance with the regulations would be eligible for the increased reimbursement. Further guidance on how SFAs may fulfill this legislative

Continued

06, for most reimbursable lunches and in most SFAs, reported lunch production costs were less than the Federal free lunch subsidy by a small amount, with the difference greatest in SFAs that produce more meals, resulting in a lower per-meal cost.

Student Payments: School districts have the discretion to set student payments for "paid meals" and à la carte foods at levels of their choosing, so long as the resulting revenues are paid into the non-profit school food service account. Some currently set prices for these meals and foods at levels that do not cover the full cost of production, with Federal payments for free and reduced-price meals covering the difference. Schools will likely face additional incentives to adjust their pricing policies so that adequate revenue is generated to cover the cost of production.[60]

State and Local Funds: A limited but nonetheless substantial portion of meal production costs are paid from State and local government sources. The contributions of these entities may need to increase to cover costs.

Operational Changes: Like other service businesses, schools may need to consider changes to their operations to increase efficiency and meet the requirements of the proposed rule. As noted above, several hundred HUSSC schools have demonstrated an ability to operate cost-effective school meals programs that meet many of the proposed rule's requirements. These schools may offer models for others as implementation moves forward.

F. Impact on Participation

As noted in Table 12, the cost estimate in this analysis assumes no net change in student participation following introduction of the rule's new meal pattern requirements. This assumption reflects uncertainties in a number of areas, including how schools will reflect the new requirements in menus, the acceptance of those changes by students, and potential changes in prices for reimbursable paid meals to provide additional revenue. These factors are discussed below.

1. Acceptance of Meals

Any revision to the content of school meals or the method of preparation may have an effect on the acceptance of school meals. Concerns are often raised that students may react negatively to changes designed to improve nutrition. USDA launched the School Meals Initiative for Healthy Children (SMI) in 1995 to help schools improve the nutritional quality of NSLP and SBP meals. The SMI offers an opportunity to examine how students react to substantial changes in school meal patterns.

As a result of the SMI many school food service directors reported making changes in procurement and preparation practices (Abraham, 2002). For example, they reported increased purchases of low-fat/reduced-fat foods (81 percent) and fresh fruits and vegetables (75 percent). The majority reported no change in food waste. However, to the extent that there was change in the amount of food wasted, more respondents reported a reduction rather than an increase in food waste (with the exception of cooked vegetables). School food service directors report that the SMI has generally had a neutral-to-positive impact on program performance.

SNDA–III found that "[c]haracteristics of NSLP lunches offered, including percent of calories from fat, whether dessert or French fries were frequently offered, and average number of fresh fruits and vegetables offered per day, were generally not significantly associated with NSLP participation."[61] This suggests that changes in meal patterns that enhance nutrition can be well received by students. Furthermore, the increased emphasis on a healthy school nutrition environment in recent years, and greater awareness of the importance of healthy eating habits in schools, may help to support student acceptance of changes in program meals.

There is also a strong and growing school nutrition effort and infrastructure already in place. For example, Team Nutrition is an FNS initiative to support healthier meals through training and technical assistance for food service, nutrition education for children and their caregivers, and school and community support for healthy eating and physical activity. Similarly, in 2004 Congress required school districts to establish local wellness policies; through these policies, schools have made changes to their school nutrition environments, improved the quality of foods offered, and students are provided with more nutritious, healthy choices. In the context of these initiatives, implementation of the proposed rule will not be an isolated endeavor, but rather may build upon a range of ongoing local, State and Federal efforts to promote children's nutrition and health.

2. Impact of Price on Participation

FNS estimates that the average cost of preparing school meals may increase by 12 percent. SFAs may raise student prices for reimbursable paid meals to compensate for some of this increase in cost. All else being equal, increased paid meal prices may reduce NSLP paid-meal participation. Mathematica®, Inc. modeled the effect of paid meal prices on student participation as part of the SNDA–III study.[62] All else equal, students who were not income-eligible for free or reduced-price meals were less likely to participate in the program when the full price of the meals was higher. For lunch, the model estimates a 0.11 percent decrease in participation for each 1 cent increase in paid lunch prices.[63] For breakfast, the model estimates a 0.12 percent decrease in participation per 1 cent increase in price.

The model's predicted student participation rate was 54 percent in schools that charged $2.00 for an NSLP lunch, compared to 59 percent in schools that charged $1.50. The study also predicts lower breakfast participation in schools that charged higher prices. Predicted participation was 10.3 percent in schools that charged $0.70 for an SBP breakfast versus 7.2 percent in schools that charged $1.00. Since meals meeting the new requirements will be improved in nutritional content it is not clear how this factor would balance against the effects of higher meal prices. Although price changes may be a necessary option for some SFAs, FNS expects that efforts designed to maintain participation would be concurrently implemented.

G. Benefits

As noted in the preamble to this proposed rule, NSLA requires that

requirement will be forthcoming and may be addressed in a subsequent rulemaking.

[60] The Healthy, Hunger-Free Kids Act of 2010, requires SFAs to gradually raise non-Federal revenues for reimbursable paid lunches, if necessary, until those revenues equaled the difference between the Federal reimbursements for free and paid lunches, to address the disparity in SFA revenue between paid and free lunches discussed above. Raising paid meal prices represents one approach by which schools may derive increased revenue, but is not a requirement of the law. Further guidance on how SFAs may fulfill this legislative requirement will be forthcoming and may be addressed in a subsequent rulemaking.

[61] For breakfast, the study estimated that projected participation rates "were higher in schools that offered a greater percentage of calories from fat in the SBP breakfast; however, these differences were not statistically significant at conventional levels." USDA 2007, vol. II, pp. 113 and 127.

[62] USDA 2007, vol. II, pp. 116–117, 123–124.

[63] This relationship between price and participation applies to prices in the range of $1.50 to $2.00 in SY 2004–2005 dollars. A much bigger price increase might trigger a bigger reduction in participation.

schools serving lunches and breakfasts under its program authority ensure that those meals are consistent with the goals of the most recent *Dietary Guidelines for Americans* and the Dietary Reference Intakes. The proposed rule, by updating program regulations consistent with *Dietary Guidelines* goals and aligning the regulations with the requirements placed on schools under the statute, will ensure that school meal nutrition requirements reflect current nutrition science, increase the availability of key food groups, better meet the nutritional needs of children, and foster healthy eating habits.

In so doing, it also provides a clear means of meeting the statutory requirements through a food-based meal pattern designed with the particular circumstances and challenges of school food service in mind, to ensure that it is feasible for school foodservice operators and does not jeopardize student and school participation in the meal programs. A related benefit of the proposal is that it simplifies meal requirements to create a single, food-based approach to meal planning. This approach helps to simplify menu planning and monitoring, and streamline training and technical assistance needs.

Once implemented by schools, USDA projects that this rule will change the types and quantities of foods prepared, offered and served through the school meals programs (the sources of the costs described in this analysis). The proposed rule is expected to result in (1) increased servings of fruits and vegetables, (2) replacement of refined-grain foods with whole-grain rich foods, and (3) replacement of higher-fat dairy products with low-fat varieties. As documented in the IOM recommendations, each of these changes corresponds to an inconsistency between the typical diets of school-aged children in the United States and the *Dietary Guidelines/MyPyramid* recommendations. In particular, the report cited an analysis of NHANES 1999–2002 data that showed that:

- Total vegetable intake was only about 40 percent of the *MyPyramid* levels, with intake of dark green and orange vegetables less than 20 percent of *MyPyramid* levels.
- Total fruit intake was about 80 percent of the *MyPyramid* levels for children ages 5–8, with far lower levels for older children.
- Intake of whole grains was less than one-quarter of *MyPyramid* levels, although total grain intake was at or above *MyPyramid* levels.
- Intake of dairy products varied by age, with the intakes of the youngest children exceeding *MyPyramid* levels, while those of older children were below those levels. However, most dairy consumed contained 2 percent or more milk fat, while the *Dietary Guidelines* recommend fat-free or low-fat dairy products.[64]

In addition, the rule would make significant changes to the level of sodium in school meals over time. Research suggests that modest population-wide reductions in dietary salt could substantially reduce cardiovascular events and medical costs.[65] More specifically, a forthcoming study suggests that reducing dietary salt in adolescents could yield substantial health benefits by decreasing the number of teenagers with hypertension and the rates of cardiovascular disease and death as these teenagers reach young and middle age adulthood.[66]

The rule also makes substantial changes in the calorie targets for meals that are designed to promote healthful energy balance for the children served by these programs. For the first time, the rule sets maximum as well as minimum calorie targets, and creates a finer gradation of calorie levels by age. As a result, minimum calorie requirements for some groups are reduced by as much as 225 calories per lunch.[67] Implemented consistent with other requirements that ensure that lunches provide appropriate nutrient content, these changes in calorie levels can help to reduce the energy imbalance that contributes to obesity among the Nation's children, without compromising nutrition to support healthy growth and development.

This approach is fully consistent with the recommendations of the *Dietary Guidelines for Americans.* Recognizing that the *Dietary Guidelines* apply to a total diet, rather than a specific meal or portion of an individual's consumption, the intention of the proposed rule is to make changes to school meals nutrition requirements to promote diets more consistent with the *Guidelines* among program participants. Such diets, in turn, are useful behavioral contributors to health and well-being. As the report of the 2010 Dietary Guidelines Advisory Committee notes, "evidence is accumulating that selecting diets that comply with the Guidelines reduces the risk of chronic disease and promotes health."[68] The report describes and synthesizes the evidence linking diet and different chronic disease risks, including cardiovascular disease and blood pressure, as well as the effects of dietary patterns on total mortality. Children are a subpopulation of particular focus for the Committee; the report emphasizes the increasing common evidence of chronic disease risk factors, such as glucose intolerance and hypertension, among children, and explains that "[e]vidence documents the importance of optimal nutrition starting during the fetal period through childhood and adolescence because this has a substantial influence on the risk of chronic disease with age."[69]

In response, the report notes improvements in food at schools as a critical strategy to prevent obesity, and related health risks, among children. Indeed, the Committee recommends "[i]mprov[ing] foods sold and served in schools, including school breakfast, lunch, and after-school meals and competitive foods so that they meet the recommendations of the IOM report on school meals (IOM, 2009) and the key findings of the 2010 DGAC. This includes all age groups of children, from preschool through high school."[70]

The linkage between poor diets and health problems such as childhood obesity are also a matter of particular policy concern, given their significant social costs. One in every three children (31.7 percent) ages 2–19 is overweight or obese.[71] Along with the effects on our children's health, childhood overweight and obesity imposes substantial economic costs, and the epidemic is associated with an estimated $3 billion in direct medical costs.[72] Perhaps more significantly, obese children and adolescents are more likely to become obese as adults.[73] In 2008, medical spending on adults that was attributed to obesity increased to an estimated $147 billion.[74]

Because of the complexity of factors that contribute both to overall food consumption and to obesity, we are not able to define a level of disease or cost reduction that is attributable to the changes in meals expected to result from implementation of the rule. As the rule is projected to make substantial improvements in meals served to more

[64] IOM 2009, pp. 49–53.

[65] *See,* for example, Smith-Spangler, 2010; Bibbins-Domingo, 2010.

[66] Bibbins-Domingo, 2010b.

[67] The minimum calorie level for a lunch served to Grade 7 students is 825 calories under current standards (Grades 7–12); this would change to a range of 600 calories minimum, 700 calories maximum under the new standards (Grades 6–8).

[68] Dietary Guidelines Advisory Committee, p. B1–2.

[69] Dietary Guidelines Advisory Committee, pp. B1–2, B1–3.

[70] Dietary Guidelines Advisory Committee, p. B3–6.

[71] Ogden *et al.,* 2010.

[72] Trasande *et al.,* 2009.

[73] Whitaker *et al.,* 1997; Serdula *et al.,* May 1993.

[74] Finkelstein *et al.,* 2009.

than half of all school-aged children on an average school day, we judge that the likelihood is reasonable that the benefits of the rule exceed the costs, and that the proposal thus represents a cost-effective means of conforming NSLP and SBP regulations to the statutory requirements for school meals.

There are other, corollary benefits to improvement in school meals that are worthy of note. The changes could increase confidence by parents and families in the nutritional quality of school meals, which may encourage more families to opt for them as a reliable source of nutritious food for their children. Improved school meals can reinforce school-based nutrition education and promotion efforts and contribute significantly to the overall effectiveness of the school nutrition environment in promoting healthful food and physical activity choices. Finally, the new requirements provide a clearer alignment between Federal program benefits and national nutrition policy, which can help to reinforce overall understanding of the linkages between diet and health.

IV. Alternatives

In response to NSLA Section 9(a)(4) amended into law in 2004, USDA contracted with IOM to assemble an expert panel to undertake a review of the nutritional needs of children, the recommendations of the *Dietary Guidelines,* and IOM's Dietary Reference Intakes. USDA asked IOM to develop recommendations for updating NSLP and SBP meal patterns and nutrition requirements based on that review of need and nutrition science, with consideration given to operational feasibility and cost.

The USDA contract with IOM called for the creation of a panel with representatives from the fields of public health, epidemiology, pediatrics, child nutrition and child nutrition behavior, statistics, and economics. The contract also called for representatives with knowledge of cultural differences in food preference and eating habits, experience in menu planning, and experience in managing and operating a school lunch and breakfast program. IOM held workshops at which the panel heard presentations from invited speakers, and solicited public input. The panel also accepted public comment on its planned approach to the project.

The process undertaken by IOM was designed to consider different perspectives and competing priorities. The panel necessarily weighed the merits of alternatives as it developed a preferred option. USDA's commitment was to implement IOM's recommendations where feasible. This commitment is driven by the statutory requirement that schools serve meals that are consistent with the goals of the *Dietary Guidelines.*[75]

We did not consider alternatives that depart significantly from IOM's recommendations and cannot satisfy USDA's statutory obligation. Nevertheless, the proposed rule makes a few small changes to IOM's recommendations. In addition, the rule contains a handful of provisions that are not addressed by IOM. These proposed rule provisions are summarized below.

The final alternative discussed in this section is to retain the status quo.

a. Whole Grains

Proposed rule: Within two years of implementation of a final rule all grains offered to students must be whole grain rich (a minimum whole grain content of 51 percent).

IOM alternative: Within three years of implementation, the whole grain content of grain products offered to students must average at least 50 percent.

The proposed rule aligns the dates of the whole grain transition with the first intermediate sodium target for ease of program operation. The IOM alternative introduces additional administrative disruption, and delays the benefits of the stronger whole grain requirement by one year. That delay, however, also postpones the added cost of the stronger requirement. The alternative would reduce the five year cost of the proposed rule by an estimated $510 million.

b. Sodium Targets

Proposed rule: Reduce sodium content of school meals to the levels specified by IOM within ten years of a final rule. Set three intermediate sodium targets, 2 years, 4 years, and 10 years after implementation of a final rule.

IOM alternative: Reach sodium targets by 2020. Set intermediate targets every 2 years.

Given the time necessary to publish proposed and final rules, reaching IOM's recommended sodium target by 2020 would leave relatively little time for phased implementation. The proposed rule's 10-year schedule is intended to win greater student acceptance. It also allows industry and schools added time to reformulate their products and school recipes between intermediate target dates. A rapid reduction in the sodium content of school meals would likely reduce participation in the lunch and breakfast programs, and thus undermine the goal of improved student nutrition.[76] Added time may also allow the market to respond to increased demand for lower sodium foods, reducing upward pressure on prices and the costs of compliance with the rule. We have not quantified these risks to student participation or food prices.[77]

c. Offer Versus Serve at Breakfast

Proposed rule: Students may decline one item at breakfast, but they must take at least one fruit or fruit juice or non-starchy vegetable.

IOM alternative: Students may decline one item at breakfast, but they must take at least one fruit or fruit juice.

The proposed rule recognizes that some schools offer vegetables at breakfast. The cost effects of this change are minimal.

d. Require Schools To Identify Reimbursable Meals

Proposed rule: Schools are required to identify the components of the day's reimbursable meals at or near the start of the serving line.

Alternative: Schools are not required to identify the components of the day's reimbursable meals.

This provision is intended to help students select a reimbursable meal and avoid a la carte charges. The provision is also meant to educate students on the content of a balanced, healthy meal. The school revenue and cost effects of this provision are small.

e. Crediting of Specific Foods

Proposed rule: Schools may credit tomato paste based on volume served. Schools may not credit snack-type fruit or vegetable products (such as fruit leather), nor may they credit formulated grain-fruit products.

Alternative: Schools can only credit tomato paste based on its calculated whole tomato equivalent. Schools may credit snack-type fruit and vegetable products and formulated grain-fruit products.

Allowing schools to credit tomato paste based on volume served is consistent with the treatment of similar products. Disallowing the crediting of snack-type fruit or vegetable products reinforces the *Dietary Guidelines* emphasis on whole fruits and vegetables, and supports nutrition education to the extent that these foods

[75] Section 9(a)(4) and 9(f)(1) of the NSLA (42 U.S.C. 1758(a)(4) and (f)(1)).

[76] *See* the preamble to the proposed rule for a more thorough discussion of this issue.

[77] Section III.B.5 examines the effect of an arbitrary two percent drop in student participation on the cost of preparing school meals, and on Federal reimbursements to schools.

are not recognized by children as fruits or vegetables. In addition, the crediting of certain fruit snacks was based on an FDA standard of identity for canned fruit nectar which has been removed from the Code of Federal Regulations. The crediting of formulated grain-fruit products is disallowed because those products typically contain high levels of fortification, rather than naturally occurring nutrients, and are high in sugar and fat. The effect of these changes on school costs is minimal.

f. Low Fat Flavored Milk

Proposed rule: Low fat milk cannot be flavored. Only fat-free milk can be flavored.

Alternative: Schools may allow flavored low fat milk.

The proposed rule is based on the IOM recommendation. FNS considered allowing schools to offer flavored low fat milk if they could stay within the proposed rule's calorie ranges. This was potentially achievable since the calorie difference between plain low fat milk and flavored low fat milk is modest (about 30 calories). We ultimately rejected this alternative; allowing only fat-free milk to be offered in flavored form is intended to reduce students' fat intakes. The difference in cost between the proposed rule and the alternative is very small (fat-free milk is less expensive than low fat milk).

g. Phase-In Implementation of IOM Recommendations

Proposed rule: All schools are expected to implement the proposed rule beginning with school year 2012–2013, with final whole grain requirements implemented by the school year 2014–2015.

Alternative: Phase-in implementation of the rule based on LEA size. LEAs with:

- More than 25,000 students would implement by SY 2012–2013;
- 10,000 to 25,000 students would implement by SY 2013–2014; and
- Less than 10,000 schools would implement by SY 2014–2015.

Final whole grain requirements in effect two years after implementation in each cohort of LEAs.

Schools vary in the extent to which they meet current nutrition requirements for reimbursable meals. Though most are reasonably successful in meeting the food group requirements under current rules, some schools may find it operationally difficult, or too costly, to prepare, serve, and gain acceptance for meals that satisfy the new food group and subgroup requirements of the proposed rule. There is potential concern that the magnitude of the changes required could make it difficult for some schools to meet the requirements of the proposed rule by SY 2012–2013.

As an alternative, USDA could consider an approach that would phase-in the requirements of the rule so that schools that can comply most readily do so early, and those for which compliance may be more difficult would have additional time. Though we are not aware of any evidentiary basis to distinguish groups of schools that may find it more difficult to meet the proposed requirements than others, we offer as an alternative scenario the phase-in schedule adopted by Congress for the requirement to conduct direct certification under Section 104 of the Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108–265). This gave smaller LEAs more time to meet the requirements than larger ones. The cost of implementing the rule under this alternative scenario is shown in Table 15, below:

TABLE 15—COST (IN MILLIONS) OF PROPOSED RULE WITH IMPLEMENTATION PHASE-IN BASED ON LEA SIZE

	2012	2013	2014	2015	2016	Total 2012–2016
Food Costs	$31.4	$243.3	$443.2	$805.1	$918.4	$2,441.4
Labor Costs	30.6	237.4	432.5	785.6	896.3	2,382.5
State Admin	0.1	8.9	9.0	9.3	9.6	36.9
Total	62.1	489.6	884.8	1,600.0	1,824.4	4,860.9

A phase-in of the new meal standards would reduce estimated benefits as well as costs for those schools not yet phased-in. Participation in the school meals program is highest among elementary school students; participation decreases as students move to middle and high school (*see* Figure 4). One of the goals of USDA-sponsored IOM recommendations for updated meal requirements was to "foster healthy eating habits" through exposure to the school meals program.[78] But, because of the decrease in participation among older students, the school meals program has only a limited opportunity to influence the eating habits of some students. Students who are not introduced to the proposed meal requirements while still in elementary school may not benefit at all from the potential positive impact of these changes on their diets.

h. Do Not Implement IOM Recommendations

Proposed rule: With few minor exceptions, discussed above, the proposed rule adopts IOM's recommendations.

Alternative: Do not adopt the recommendations, or postpone their implementation.

By statute, schools are required to serve NSLP and SBP meals that are consistent with the goals of the *Dietary Guidelines.*[79] Given this mandate, USDA contracted with IOM to review current meal pattern and nutrition requirements and recommend changes. IOM assembled a panel of child nutrition experts and school foodservice practitioners. That panel accepted input from industry, interest groups, and representatives of the school foodservice community. The panel was charged with recommending program changes that reflect *Dietary Guidelines* goals but are also operationally practical and cost-efficient, to the extent possible. Although a different review might have generated a different set of recommendations, any proposal consistent with *Dietary Guidelines* goals would be obligated to recommend increases in the amounts and varieties of vegetables and fruits offered to students, the substitution of whole grains for refined grains, and limits on the fat content of milk. These changes are the principal cost drivers of the IOM recommendations (*see* Table 11). Alternate proposals to align program requirements with the goals of the *Dietary Guidelines* would necessarily confront these same costs, and thus

[78] IOM 2009, p. 2.

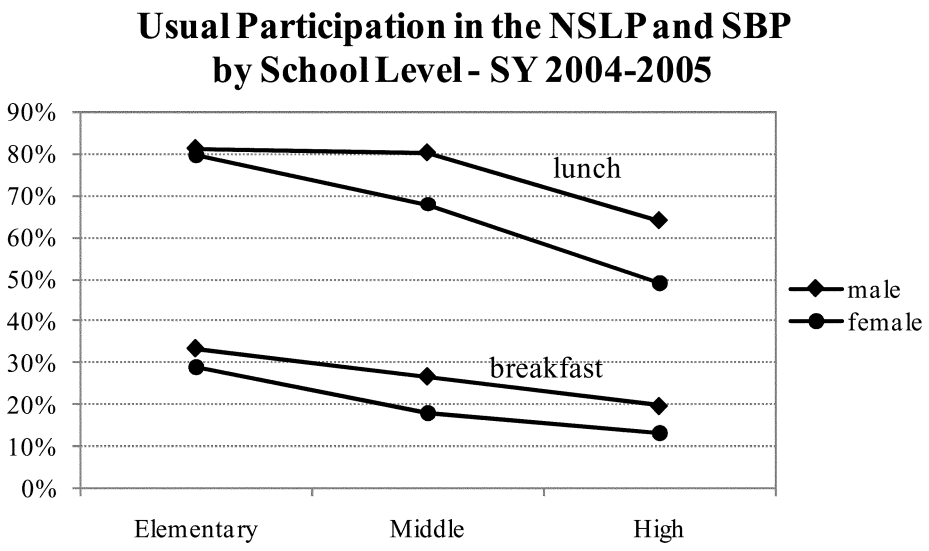
[79] Section 9(a)(4) and 9(f)(1) of the NSLA (42 U.S.C. 1758(a)(4) and (f)(1)).

would be unlikely to cost significantly less than the proposed rule.

We did not consider alternatives that would move significantly away from the objective to align school meal patterns with the goals of the *Dietary Guidelines.* Such alternatives include making no change to program rules, or delaying implementation of the proposed rule. Both of these would reduce costs relative to the proposed rule.

Taking no action would, of course, forfeit all of the benefits discussed in section III.G. Delaying implementation would have lesser, but still significant negative consequences. As noted under alternative g, students who are not introduced to the proposed meal requirements while still in elementary school may not benefit at all from delayed implementation of the rule.

Figure 4: Usual Participation Rates in the School Lunch and Breakfast Programs[80]



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VI. Appendix A

The following tables detail the major steps in the computation of food cost estimates described in the main body of the impact analysis. The tables develop both a baseline food cost estimate and an estimate under the proposed rule.

Note that the dollar values of our baseline food cost estimates are lower than the figures reported in the SLBCS–II. The primary reason that our figures differ is that we use SNDA–III rather than SLBCS–II for baseline totals of food served; we only use the SLBCS–II for unit prices.[81] We chose SNDA–III as our source for food quantities because of its information on student take rates. In order to estimate the cost of the proposed rule, we need to take the rule's food group requirements, which are expressed in terms of quantities that schools must offer to students, and estimate the quantity of food actually served. The take rates from SNDA–III allow us to do that;[82] the SLBCS–II is not designed to estimate take rates. Because of the relationship between take rates and quantities served, it would be inappropriate to mix SNDA–III take rates and SLBCS–II quantities. Because we use SNDA–III take rates to estimate the cost of serving meals under the proposed rule, we use SNDA–III quantities to estimate our baseline.

The lower scale of our baseline food cost estimate compared to the SLBCS–II should not impact our cost estimate of the proposed rule. As long as the take rates are computed from the same source for both our baseline and proposed rule estimates, the estimated cost of an incremental change in quantities offered should not be biased.

Table A–1 contains total food and labor cost estimates for the baseline and under the proposed rule. The difference is summarized in the shaded panel at the bottom of the table. That difference is the estimated cost of the rule, as presented in Table 6 in section III.A.1.

Table A–2 shows each of the major inputs into our baseline cost estimate. The first two columns are the estimated volumes of food served per meal, expressed in grams, and weighted average prices per gram. We estimate the cost per meal of prepared and processed foods without breaking them into food group ingredients. Quantities of food served per meal are from SNDA–III; unit prices are from SLBCS–II. The product of these figures give the estimated food cost per school meal served. We inflate each of the meal components by historic and projected changes in food group specific prices to estimate per meal costs through FY 2016. Inflation factors, not shown in Table A–2, are weighted averages, computed from CPI–U data from the Bureau of Labor Statistics. The next set of columns contains projections of meals served through FY 2016. Total baseline costs, in the five rightmost columns of Table A–2, are the product of the estimated costs per meal and FNS projections of the number of meals served.

Our estimate of total cost under the proposed rule is developed in Tables A–3 and A–4. Table A–3 summarizes the steps that we took to estimate a per-meal food cost in FY 2012, the year in which the rule is expected to take effect. Table A–4 takes that FY 2012 figure and projects total costs through FY 2016.

Table A–3 begins with a set of food group quantities per meal consistent with proposed rule meal pattern requirements. There is a considerable amount of work behind these numbers that cannot be summarized in a simple table. The first three columns of numbers in Table A–3 represent the quantities of food that may be served to students, by grade level, on a per-meal basis. These figures include estimated quantities by food group and for prepared and processed foods. The process that we used to develop these figures is described in detail in section III.B.2. The key steps in that process (not shown in Table A–3) are summarized as follows:

- Begin with the food group specific quantities that must be offered to students under the proposed rule.
- Multiply quantities that must be offered by anticipated student take rates to generate estimated "target" amounts that may be served.
- Assume that schools will offer the same amount of prepared and processed ("combination") foods as they reported serving in SY 2004–2005 (from SNDA–III). Estimate the amount of creditable servings of vegetables, refined grains, whole grains, and meat or meat alternate satisfied by these combination foods and subtract those creditable amounts from our food group targets.
- The differences between targeted servings and amounts satisfied by combination foods must be satisfied with non-combination single-item servings of those foods.

Some of the food group targets satisfied by single-item servings are negative; *see* the refined grain figures for all grade groups, and the meat or meat alternate figure for middle schools in Table A–3. This means that the combination foods more than satisfy the serving targets for those foods. We use the negative numbers to compute the value of that excess and subtract it from our proposed rule cost estimate.

Table A–3's fourth column of numbers is weighted average prices per unit of food served for FY 2012. Note that the prices by food group are different for lunch and breakfast; we estimate different weighted average prices based on the different mix of foods served at breakfast and lunch. Our price figures use data from the SLBCS–II, and are inflated with FNS-computed factors constructed with CPI–U data (not shown in Table A–3). The product of our food group serving targets and estimated unit prices give estimated food group component costs per meal (the three columns under the "Weighted Average Price—Dollar Cost per Meal" header). To this point, all of the figures are specific to elementary, middle, and high schools. The last column in Table A–3 uses the percent distribution of meals served by grade level to estimate an overall weighted average cost per meal by food group.

Table A–4 resembles Table A–2. It takes the weighted average prices per meal for combination foods and single-item foods for FY 2012, projects them through FY 2016 using food group specific inflation factors, then multiplies those inflated per meal figures by FNS projections of meals served. The final estimated cost of meals served under the proposed rule is displayed in the last five columns of the table.

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[81] Another small part of the difference in cost is our omission of items such as snack chips, drinks other than milk and fruit juice, condiments, and salad dressing; these items are served in addition to the foods that help satisfy the NSLP and SBP meal requirements. We exclude them from both the baseline and the proposed rule estimates under the assumption that they will contribute similarly to each estimate and will have no effect on the difference in cost.

[82] The SNDA–III dataset was designed to allow the computation of take rates by food item in order to support a nutrient analysis of school meals.

Table A-1: Cost of Proposed Rule – Summary

Cost Effect Summary

	Cost Category		Fiscal Year Costs (millions)					
			2012[1]	2013	2014	2015	2016	2012 - 2016
Current Rule	Breakfast	Food	$241.5	$1,623.5	$1,698.8	$1,777.7	$1,860.4	$7,201.9
		Labor[2]	235.7	1,584.3	1,657.8	1,734.8	1,815.5	7,028.2
	Lunch	Food	868.2	5,803.7	6,058.2	6,318.3	6,590.5	25,638.9
		Labor[2]	847.3	5,663.7	5,912.0	6,165.9	6,431.5	25,020.4
	Total		**$2,192.7**	**$14,675.2**	**$15,326.8**	**$15,996.8**	**$16,697.9**	**$64,889.4**
Proposed Rule	Breakfast	Food	$303.8	$2,043.4	$2,154.9	$2,343.1	$2,453.9	$9,299.0
		Labor[2]	296.5	1,994.1	2,102.9	2,286.6	2,394.7	9,074.7
	Lunch	Food	897.7	6,010.3	6,307.0	6,721.9	7,025.3	26,962.1
		Labor[2]	876.1	5,865.3	6,154.8	6,559.7	6,855.8	26,311.7
	Total		**$2,374.1**	**$15,913.1**	**$16,719.6**	**$17,911.2**	**$18,729.6**	**$71,647.6**
Difference	Food :		$91.8	$626.5	$704.9	$968.9	$1,028.2	$3,420.4
	Labor :		89.6	611.4	687.9	945.6	1,003.4	3,337.9
	State Agency Administration[3] :		0.1	8.9	9.0	9.3	9.6	36.9
	Total :		**$181.5**	**$1,246.8**	**$1,401.9**	**$1,923.8**	**$2,041.3**	**$6,795.2**

Notes:
1. FY 2012 is a 3 month figure. The rule is assumed to take effect at the beginning of SY 2012-2013
2. The SLBCS II estimated that labor costs are 44.5 percent of total reported SFA costs; food costs are 45.6 percent of the total. The labor costs shown here are equal to food costs multiplied by (.445/.456).

3. Added State agency administrative costs include training and technical assistance to SFAs, monitoring and compliance, and associated reporting and recordkeeping.

Table A-2: Detail of Baseline (Current Rule) Food Cost Estimate – Prices per Meal, Participation, and Total Projected Food Cost

Current Rule

Meal	Food Item	Average Meal Served[1] grams per meal	Weighted Average Price[2] dollar cost per gram	Weighted Average Price (inflated to) dollar cost per meal					Participation meals served (millions)					Total Food Cost ($ millions) for number of months				
														3	12	12	12	12
		FY2012		FY2012	FY2013	FY2014	FY2015	FY2016	FY2012	FY2013	FY2014	FY2015	FY2016	FY2012	FY2013	FY2014	FY2015	FY2016
Breakfast																		
	Grades K-12																	
	Milk	211.73	$0.0008	$0.1776	$0.1805	$0.1834	$0.1865	$0.1895	332	2,167	2,201	2,237	2,272	$58.9	$391.0	$403.8	$417.1	$430.7
	Fruit	20.36	0.0018	0.0362	0.0375	0.0389	0.0403	0.0418	332	2,167	2,201	2,237	2,272	12.0	81.3	85.6	90.2	95.0
	Fruit Juice	90.92	0.0013	0.1212	0.1260	0.1311	0.1363	0.1417	332	2,167	2,201	2,237	2,272	40.2	273.1	288.5	304.8	322.1
	Grain	51.40	0.0046	0.2361	0.2438	0.2518	0.2600	0.2685	332	2,167	2,201	2,237	2,272	78.4	528.3	554.3	581.5	610.1
	Meat/Meat Alternate	11.63	0.0042	0.0487	0.0501	0.0515	0.0530	0.0545	332	2,167	2,201	2,237	2,272	16.2	108.6	113.4	118.5	123.8
	Vegetable	1.04	0.0019	0.0019	0.0021	0.0022	0.0024	0.0025	332	2,167	2,201	2,237	2,272	0.6	4.5	4.9	5.3	5.7
	Prepared & Processed Foods	25.63	0.0041	0.1058	0.1092	0.1128	0.1164	0.1202	332	2,167	2,201	2,237	2,272	35.1	236.7	248.3	260.4	273.1
	Total K-12	**412.70**		**$0.7276**	**$0.7493**	**$0.7717**	**$0.7948**	**$0.8187**						**$241.5**	**$1,623.5**	**$1,698.8**	**$1,777.7**	**$1,860.4**
Lunch																		
	Grades K-12																	
	Milk	215.25	$0.0008	$0.1786	$0.1815	$0.1845	$0.1875	$0.1906	856	5,532	5,582	5,626	5,671	$152.9	$1,004.2	$1,029.9	$1,055.2	$1,081.2
	Fruit	59.53	0.0017	0.1024	0.1064	0.1106	0.1149	0.1194	856	5,532	5,582	5,626	5,671	87.7	588.8	617.3	646.5	677.1
	Fruit Juice	16.35	0.0015	0.0245	0.0254	0.0265	0.0275	0.0286	856	5,532	5,582	5,626	5,671	20.9	140.8	147.7	154.8	162.3
	Grain	22.72	0.0025	0.0572	0.0602	0.0634	0.0667	0.0702	856	5,532	5,582	5,626	5,671	49.0	333.2	353.9	375.5	398.4
	Meat/Meat Alternate	7.74	0.0038	0.0298	0.0306	0.0314	0.0323	0.0332	856	5,532	5,582	5,626	5,671	25.5	169.2	175.4	181.6	188.1
	Vegetable	66.66	0.0022	0.1447	0.1525	0.1607	0.1693	0.1784	856	5,532	5,582	5,626	5,671	123.9	843.6	896.9	952.6	1,011.9
	Prepared & Processed Foods	139.70	0.0034	0.4770	0.4924	0.5083	0.5247	0.5416	856	5,532	5,582	5,626	5,671	408.3	2,723.9	2,837.1	2,952.0	3,071.6
	Total K-12	**527.95**		**$1.0142**	**$1.0491**	**$1.0853**	**$1.1230**	**$1.1620**						**$868.2**	**$5,803.7**	**$6,058.2**	**$6,318.3**	**$6,590.5**

notes:

1. Average grams per meal served is calculated using SNDA-III (SY 2004-2005)
2. Price is calculated using SLBCS II data (SY 2005-2006) and inflated to FY 2012 using the Bureau of Labor Statistics CPI-U.

Table A-3: Detail of Proposed Rule Food Cost Estimate – Base Year Quantities and Prices

Proposed Rule

Meal	Food Item	Unit	Number of Units to meet Proposed Recommendations[1] units per meal			Weighted Average Price[2] dollar cost per unit FY2012	Weighted Average Price dollar cost per meal FY2012			Percent of Participants by School Grade[3]			Weighted Average Price dollar cost per meal FY2012
Breakfast			**Grades K-5**	**Grades 6-8**	**Grades 9-12**	**Grades K-12**	**Grades K-5**	**Grades 6-8**	**Grades 9-12**	**Grades K-5**	**Grades 6-8**	**Grades 9-12**	**Grades K-12**
	Milk	cup	0.9002	0.8111	0.8061	$0.2050	$0.1846	$0.1663	$0.1653	56.64%	22.08%	21.28%	$0.1764
	Fruit	cup equivalent	0.4619	0.4479	0.3877	0.3630	0.1677	0.1626	0.1407	56.64%	22.08%	21.28%	0.1608
	Fruit Juice	cup equivalent	0.3658	0.3658	0.3658	0.3317	0.1213	0.1213	0.1213	56.64%	22.08%	21.28%	0.1213
	Non Whole Grains	oz equivalent	0.5010	0.3902	0.3225	0.1624	0.0814	0.0634	0.0524	56.64%	22.08%	21.28%	0.0712
	Whole Grains	oz equivalent	0.7066	0.6598	0.6934	0.2172	0.1535	0.1433	0.1506	56.64%	22.08%	21.28%	0.1506
	Meat/Meat Alternate	oz equivalent	0.5609	0.4534	0.8605	0.2032	0.1140	0.0921	0.1749	56.64%	22.08%	21.28%	0.1221
	Vegetable	cup equivalent	0.0000	0.0000	0.0000	0.3162	0.0000	0.0000	0.0000	56.64%	22.08%	21.28%	0.0000
	Prepared & Processed Foods	gram	21.980	28.837	39.656	0.0041	0.0908	0.1191	0.1638	56.64%	22.08%	21.28%	0.1126
	Total						**$0.9132**	**$0.8682**	**$0.9690**				**$0.9151**
Lunch			**Grades K-5**	**Grades 6-8**	**Grades 9-12**	**Grades K-12**	**Grades K-5**	**Grades 6-8**	**Grades 9-12**	**Grades K-5**	**Grades 6-8**	**Grades 9-12**	**Grades K-12**
	Milk	cup	0.9092	0.8085	0.7811	$0.2023	$0.1839	$0.1635	$0.1580	56.64%	22.08%	21.28%	$0.1739
	Fruit	cup equivalent	0.2759	0.2145	0.4294	0.3494	0.0964	0.0750	0.1501	56.64%	22.08%	21.28%	0.1031
	Fruit Juice	cup equivalent	0.0658	0.0658	0.0658	0.3720	0.0245	0.0245	0.0245	56.64%	22.08%	21.28%	0.0245
	Non Whole Grains[4]	oz equivalent	-0.4667	-0.6420	-0.5173	0.0835	-0.0390	-0.0536	-0.0432	56.64%	22.08%	21.28%	-0.0431
	Whole Grains	oz equivalent	0.7126	0.6950	0.8610	0.1117	0.0796	0.0776	0.0962	56.64%	22.08%	21.28%	0.0827
	Meat/Meat Alternate[4]	oz equivalent	0.0504	-0.0775	0.1305	0.1337	0.0067	-0.0104	0.0174	56.64%	22.08%	21.28%	0.0052
	Vegetables												
	Dark Green	cup equivalent	0.0790	0.0763	0.0792	0.3713	0.0293	0.0283	0.0294	56.64%	22.08%	21.28%	0.0291
	Orange	cup equivalent	0.0809	0.0784	0.0813	0.5195	0.0420	0.0407	0.0422	56.64%	22.08%	21.28%	0.0418
	Legumes	cup equivalent	0.0847	0.0633	0.0857	0.7214	0.0611	0.0457	0.0618	56.64%	22.08%	21.28%	0.0578
	Starchy	cup equivalent	0.1552	0.1494	0.1550	0.3345	0.0519	0.0500	0.0518	56.64%	22.08%	21.28%	0.0515
	Other	cup equivalent	0.1032	0.0838	0.3020	0.3829	0.0395	0.0321	0.1156	56.64%	22.08%	21.28%	0.0541
	Prepared & Processed Foods[4]	gram	128.676	145.885	150.386	0.0034	0.4394	0.4981	0.5135	56.64%	22.08%	21.28%	0.4681
	Total						**$1.0154**	**$0.9715**	**$1.2174**				**$1.0487**

notes:
1. Quantities shown here are estimates of the amounts that will be served to students after implementation of the proposed rule. They are the amounts that must be offered to students under the proposed rule multiplied by
estimated student take-up rates.
2. Price is calculated using SLBCS II data (SY 2005-2006) and inflated to FY 2012 using the Bureau of Labor Statistics CPI-U.
3. The percentage splits of NSLP participants were calculated using SNDA
III (SY2004-2005) data.
4. The proposed rule cost estimate takes the observed quantity of prepared and processed food served from the baseline and uses that as the basis for the proposed rule estimate. That quantity of prepared and processed foods contains program-creditable amounts of vegetables, meat/meat alternate, whole grains, and refined grains. The difference between the program-creditable quantities satisfied by prepared and process foods, and the targeted quantities required by the proposed rule, are the figures shown in the vegetable, meat/meat alternate, whole grain, and refined grain rows of this table. Negative numbers in the refined grains and meat/meat alternate rows mean that prepared and processed foods from the baseline contain more than the targeted quantities required by the proposed rule. The proposed rule targets for refined grains (in all grade levels) and for meat/meat alternate (in middle school) are more than fully satisfied by prepared and processed foods. The amounts in excess of those targets are displayed as negative numbers. The methodology is described in greater detail in the regulatory impact analysis.

Table A-4: Detail of Proposed Rule Food Cost Estimate – Prices per Meal, Participation, and Total Projected Food Cost

Proposed Rule

Meal	Food Item	Weighted Average Price (inflated to) dollar cost per meal					Participation meals served (thousands)					Total Food Cost ($ millions) for number of months				
												3	12	12	12	12
		FY2012	FY2013	FY2014	FY2015	FY2016	FY2012	FY2013	FY2014	FY2015	FY2016	FY2012	FY2013	FY2014	FY2015	FY2016
Breakfast																
	Grades K-12															
	Milk	$0.1764	$0.1793	$0.1823	$0.1853	$0.1883	332	2,167	2,201	2,237	2,272	$58.6	$388.6	$401.3	$414.4	$428.0
	Fruit	0.1608	0.1667	0.1728	0.1792	0.1857	332	2,167	2,201	2,237	2,272	53.4	361.2	380.5	400.7	422.1
	Fruit Juice	0.1213	0.1262	0.1312	0.1364	0.1419	332	2,167	2,201	2,237	2,272	40.3	273.4	288.9	305.2	322.4
	Grains	0.2218	0.2291	0.2435	0.2901	0.2996	332	2,167	2,201	2,237	2,272	73.7	496.3	536.0	648.9	680.8
	Meat/Meat Alternate	0.1221	0.1256	0.1291	0.1328	0.1365	332	2,167	2,201	2,237	2,272	40.5	272.1	284.2	296.9	310.2
	Vegetable	0.0000	0.0000	0.0000	0.0000	0.0000	332	2,167	2,201	2,237	2,272	-	-	-	-	-
	Prepared & Processed Foods	0.1126	0.1162	0.1199	0.1238	0.1278	332	2,167	2,201	2,237	2,272	37.4	251.7	264.0	276.9	290.4
	Total K-12	**$0.9151**	**$0.9431**	**$0.9789**	**$1.0476**	**$1.0799**						**$303.8**	**$2,043.4**	**$2,154.9**	**$2,343.1**	**$2,453.9**
Lunch																
	Grades K-12															
	Milk	$0.1739	$0.1767	$0.1797	$0.1826	$0.1856	856	5,532	5,582	5,626	5,671	$148.9	$977.8	$1,002.8	$1,027.5	$1,052.7
	Fruit	0.1031	0.1071	0.1113	0.1156	0.1201	856	5,532	5,582	5,626	5,671	88.2	592.6	621.2	650.6	681.4
	Fruit Juice	0.0245	0.0255	0.0265	0.0275	0.0286	856	5,532	5,582	5,626	5,671	21.0	140.8	147.7	154.9	162.3
	Grains	0.0396	0.0417	0.0480	0.0743	0.0782	856	5,532	5,582	5,626	5,671	33.9	230.6	268.2	417.8	443.3
	Meat/Meat Alternate	0.0052	0.0054	0.0055	0.0057	0.0058	856	5,532	5,582	5,626	5,671	4.5	29.8	30.8	31.9	33.1
	Vegetable	0.2343	0.2469	0.2601	0.2741	0.2888	856	5,532	5,582	5,626	5,671	200.6	1,365.7	1,452.0	1,542.2	1,638.1
	Prepared & Processed Foods	0.4681	0.4832	0.4988	0.5149	0.5315	856	5,532	5,582	5,626	5,671	400.7	2,673.2	2,784.2	2,897.0	3,014.3
	Total K-12	**$1.0487**	**$1.0865**	**$1.1299**	**$1.1947**	**$1.2387**						**$897.7**	**$6,010.3**	**$6,307.0**	**$6,721.9**	**$7,025.3**

Proposed Rule

Meal	Food Item	Weighted Average Price (inflated to) dollar cost per meal					Participation meals served (thousands)					Total Food Cost ($ millions) for number of months				
												3	12	12	12	12
		FY2012	FY2013	FY2014	FY2015	FY2016	FY2012	FY2013	FY2014	FY2015	FY2016	FY2012	FY2013	FY2014	FY2015	FY2016
Breakfast																
	Grades K-12															
	Milk	$0.1764	$0.1793	$0.1823	$0.1853	$0.1883	332	2,167	2,201	2,237	2,272	$58.6	$388.6	$401.3	$414.4	$428.0
	Fruit	0.1608	0.1667	0.1728	0.1792	0.1857	332	2,167	2,201	2,237	2,272	53.4	361.2	380.5	400.7	422.1
	Fruit Juice	0.1213	0.1262	0.1312	0.1364	0.1419	332	2,167	2,201	2,237	2,272	40.3	273.4	288.9	305.2	322.4
	Grains	0.2218	0.2291	0.2435	0.2901	0.2996	332	2,167	2,201	2,237	2,272	73.7	496.3	536.0	648.9	680.8
	Meat/Meat Alternate	0.1221	0.1256	0.1291	0.1328	0.1365	332	2,167	2,201	2,237	2,272	40.5	272.1	284.2	296.9	310.2
	Vegetable	0.0000	0.0000	0.0000	0.0000	0.0000	332	2,167	2,201	2,237	2,272	-	-	-	-	-
	Prepared & Processed Foods	0.1126	0.1162	0.1199	0.1238	0.1278	332	2,167	2,201	2,237	2,272	37.4	251.7	264.0	276.9	290.4
	Total K-12	**$0.9151**	**$0.9431**	**$0.9789**	**$1.0476**	**$1.0799**						**$303.8**	**$2,043.4**	**$2,154.9**	**$2,343.1**	**$2,453.9**
Lunch																
	Grades K-12															
	Milk	$0.1739	$0.1767	$0.1797	$0.1826	$0.1856	856	5,532	5,582	5,626	5,671	$148.9	$977.8	$1,002.8	$1,027.5	$1,052.7
	Fruit	0.1031	0.1071	0.1113	0.1156	0.1201	856	5,532	5,582	5,626	5,671	88.2	592.6	621.2	650.6	681.4
	Fruit Juice	0.0245	0.0255	0.0265	0.0275	0.0286	856	5,532	5,582	5,626	5,671	21.0	140.8	147.7	154.9	162.3
	Grains	0.0396	0.0417	0.0480	0.0743	0.0782	856	5,532	5,582	5,626	5,671	33.9	230.6	268.2	417.8	443.3
	Meat/Meat Alternate	0.0052	0.0054	0.0055	0.0057	0.0058	856	5,532	5,582	5,626	5,671	4.5	29.8	30.8	31.9	33.1
	Vegetable	0.2343	0.2469	0.2601	0.2741	0.2888	856	5,532	5,582	5,626	5,671	200.6	1,365.7	1,452.0	1,542.2	1,638.1
	Prepared & Processed Foods	0.4681	0.4832	0.4988	0.5149	0.5315	856	5,532	5,582	5,626	5,671	400.7	2,673.2	2,784.2	2,897.0	3,014.3
	Total K-12	**$1.0487**	**$1.0865**	**$1.1299**	**$1.1947**	**$1.2387**						**$897.7**	**$6,010.3**	**$6,307.0**	**$6,721.9**	**$7,025.3**

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Initial Regulatory Flexibility Analysis

Proposed Rule: Nutrition Standards in the National School Lunch and School Breakfast Programs

[RIN 0584–AD59]

Agency: Food and Nutrition Service, USDA.

Background: The Regulatory Flexibility Act (RFA) requires agencies to consider the impact of their rules on small entities and to evaluate alternatives that would accomplish the objectives of the rules without unduly burdening small entities when the rules impose a significant economic impact on a substantial number of small entities. Inherent in the RFA is Congress' desire to remove barriers to competition and encourage agencies to consider ways of tailoring regulations to the size of the regulated entities.

The RFA does not require that agencies necessarily minimize a rule's impact on small entities if there are significant legal, policy, factual, or other reasons for the rule's having such an impact. The RFA requires only that agencies determine, to the extent feasible, the rule's economic impact on small entities, explore regulatory alternatives for reducing any significant economic impact on a substantial number of such entities, and explain the reasons for their regulatory choices.

Reasons That Action Is Being Considered

Section 103 of the Child Nutrition and WIC Reauthorization Act of 2004 inserted Section 9(a)(4) into the National School Lunch Act requiring the Secretary to promulgate rules revising nutrition requirements, based on the most recent *Dietary Guidelines for Americans,* that reflect specific recommendations for increased consumption of foods and food ingredients offered in school meal programs. This proposed rule amends Sections 210 and 220 of the regulations that govern the National School Lunch Program (NSLP) and the School Breakfast Program (SBP). The proposed rule implements recommendations of the National Academies' Institute of Medicine (IOM). Under contract to the United States Department of Agriculture (USDA), IOM proposed changes to NSLP and SBP meal pattern requirements consistent with the 2005 *Dietary Guidelines* and IOM's Dietary Reference Intakes. The proposed rule advances the mission of the Food and Nutrition Service (FNS) to provide children access to food, a healthful diet, and nutrition education in a manner that inspires public confidence.

Objectives of, and Legal Basis for, the Proposed Rule

Under Section 9(a)(4) and Section 9(f)(1) of the NSLA, schools that participate in the NSLP or SBP must offer lunches and breakfasts that are consistent with the goals of the most recent *Dietary Guidelines for Americans.* Current nutrition requirements for school lunches and breakfasts are based on the 1995 *Dietary Guidelines* and the 1989 RDAs. (School lunches and breakfasts were not updated when the 2000 Dietary Guidelines were issued because those recommendations did not require significant changes to the school meal patterns.) The 2005 Dietary Guidelines provide more prescriptive and specific nutrition guidance than earlier releases and require significant changes to school meal requirements.

Number of Small Entities to Which the Proposed Rule Will Apply

This rule directly regulates the 55 State education agencies and 2 State Departments of Agriculture (SAs) that operate the NSLP and SBP pursuant to agreements with USDA's Food and Nutrition Service (FNS); in turn, its provisions apply to entities that prepare and provide NSLP and SBP meals to students. While SAs are not small entities under the RFA as State populations exceed the 50,000 threshold for a small government jurisdiction, many of the service-providing institutions that work with them to implement the program do meet definitions of small entities:

- There are currently about 19,000 School Food Authorities (SFAs) participating in NSLP and SBP. More than 99 percent of these have fewer than 50,000 students.[83] About 26 percent of SFAs with fewer than 50,000 students are private. However, private school SFAs account for only 3 percent of all students in SFAs with enrollments under 50,000.[84]
- Nearly 102,000 schools and residential child care institutions participate in the NSLP. These include more than 90,000 public schools, 6,000 private schools, and about 5,000 residential child care institutions (RCCIs).[85] We focus on the impact at the SFA level in this document, rather than the school level, because SFAs are responsible for the administration of the NSLP and the SBP.
- Food service management companies (FSMCs) that prepare school meals or menus under contract to SFAs are affected indirectly by the proposed rule. Thirteen percent of public school SFAs contracted with FSMCs in school year (SY) 2004–2005.[86] Of the 2,460 firms categorized as "food service contractors" under NAICS code 72231, 96 percent employ fewer than 500 workers.[87]

Projected Reporting, Recordkeeping and Other Compliance Requirements

The analysis below covers only those organizations impacted by the proposed rule that were determined to be small entities.

School Food Authorities (SFA)/Schools

Increased Cost To Produce School Meals

It is estimated that the proposed rule will raise the average cost of producing and serving school lunches by almost 7 cents and school breakfasts by 37 cents on initial implementation. By FY 2015, when the 100 percent whole grain rich requirement takes effect, the cost per lunch will be 14 cents higher than our baseline estimate; the cost per breakfast will be 50 cents higher. Across all SFAs we estimate that the total cost of compliance will be $6.8 billion over five years. Although about 99 percent of SFAs enroll fewer than 50,000 students, they enroll only about 80 percent of all students. If they serve about 80 percent of all meals (we do not have data on meals served by SFA size) then these small entities would incur roughly 80 percent of estimated costs.

Increased costs of producing school meals as a result of the proposed rule are not expected to fall disproportionally on smaller SFAs. We estimate the cost of the proposed rule on a per meal basis. Schools that face average labor and food costs, and have menus typical of the average school will incur costs directly proportional to their size. We estimate that those costs will equal our estimated cost per meal multiplied by the number of meals served.

The most important factors that will separate schools with higher than

[83] FNS 742 School Food Verification Survey, School Year 2009–2010. This number is approximate, not all SFAs are required to submit the 742 form.

[84] *Ibid.* RCCIs include but are not limited to juvenile detention centers, orphanages, and medical institutions. We do not have information on the number of children enrolled in these institutions.

[85] FNS program data for FY 2010.

[86] U.S. Department of Agriculture, Food and Nutrition Service, Office of Research, Nutrition and Analysis, School Nutrition Dietary Assessment Study-III, Vol. I, 2007, p. 34 *http://www.fns.usda.gov/ora/MENU/Published/CNP/FILES/SNDAIII-Vol1.pdf*

[87] *Ibid.*

average per-meal costs from those with lower than average costs are not necessarily associated with the size of the SFA. For instance, schools with menus that already emphasize fruits, non-starchy vegetables, and whole grains will need to make fewer changes, and the costs of implementation in those schools may be lower than average. Also, because the per-meal cost of complying with the proposed requirements is much higher for breakfast than for lunch, the overall costs of implementation in schools that serve the most school breakfasts relative to lunches will be higher than the costs faced by schools that do not serve breakfast.

Increased Cost of Administering School Meals Programs

An initial increase in administrative staff time for training and implementation is anticipated at the SFA level. The proposed rule increases the length of State reviews of SFAs through the Coordinated Review Effort (CRE) by incorporating the requirements of School Meals Initiative (SMI) reviews, and increases their frequency to once every three years. SFAs that previously had separate CREs and SMIs may experience a decrease in burden, because they will undergo just one CRE every three years, rather than two reviews (one CRE and one SMI) every five years.

The proposed rule incorporates the provision of training and technical assistance by SAs to the SFAs. SFAs must, in turn, adjust their current training agenda to include the new requirements, as no funding has been provided in the proposed rule to accommodate new training.

In total, these administrative changes, in the form of recordkeeping and reporting burden arising from the proposed rule, are estimated to result in a net change of 8.2 hours for each of about 7,000 SFAs per year. The additional 8.2 hours of record keeping and reporting burden to SFAs per year would not rise to the level of a significant impact for RFA purposes.[88]

Increased Equipment Costs

SFAs may need to purchase new equipment to prepare and serve meals that comply with the proposed standards. For example, some SFAs may need to replace fryers with ovens or steamers. In FY 2009, FNS solicited requests from SFAs for food service equipment grants, awarding $100 million in 2009 American Recovery and Reinvestment Act (ARRA) Equipment Grants and an additional $25 million in one-time funds included in the FY 2010 Appropriations Act. In response to their solicitations for these funds, State agencies received a total of approximately $600 million in grant requests from SFAs. The strong response to these grant programs indicates a substantial demand for investment in kitchen equipment.

We do not have the data necessary to measure the remaining unmet demand in smaller SFAs or in SFAs that did not receive grants. However, much of that demand is driven by the routine need to replace equipment that is nearing the end of its useful life—a cost that is appropriately covered by USDA meal reimbursements and other sources of food service revenue. For recipient SFAs, the grants temporarily freed some of those revenue sources for other priorities. In the absence of additional Congressional action, SFAs must again turn to those sources to meet their ongoing equipment needs.

Options for Addressing Increased Costs

Most schools will have a number of options and flexibilities within available revenue streams and operational approaches that can help to balance costs and resources. The primary resources available to SFAs are listed here.

1. Federal Reimbursements: About half of all SFA revenues are from Federal reimbursements. These payments are adjusted annually for changes in food and labor costs by statute. SLBCS–II found that in 2005–06, for most reimbursable lunches and in most SFAs, reported lunch production costs were less than the Federal free lunch subsidy by a small amount, with the difference greatest in SFAs that produce more meals, resulting in a lower per-meal cost.

2. Student Payments: School districts have the discretion to set student payments for "paid meals" and à la carte foods at levels of their choosing, so long as the resulting revenues are paid into the non-profit school food service account. Some currently set prices for these meals and foods at levels that do not cover the full cost of production, with Federal payments for free and reduced-price meals covering the difference. Schools will likely face additional incentives to adjust their pricing policies so that adequate revenue is generated to cover the cost of production.

3. State and Local Funds: A limited but nonetheless substantial portion of meal production costs are paid from State and local government sources. The contributions of these entities may need to increase to cover costs.

4. Operational Changes: Like other service businesses, schools may need to consider changes to their operations to increase efficiency and meet the requirements of the proposed rule. Several hundred schools recognized as part of the HealthierUS School Challenge (HUSSC) have demonstrated an ability to operate cost-effective school meals programs that meet many of the proposed rule's requirements. These schools may offer models for others as implementation moves forward.

We recognize that small SFAs, like others, will face substantial costs and potential challenges in implementing the proposed rule. These costs are not significantly greater for small SFAs than for larger ones, as implementation costs are driven primarily by factors other than SFA size. Nevertheless, we do not discount the special challenges that may face some smaller SFAs. As a group, small SFAs may have less flexibility to adjust resources in response to immediate budgetary needs. The time between publication of the proposed and final rules offers these SFAs some opportunity, however, for advance planning.

Food Service Management Companies

FSMCs are potentially indirectly affected by the proposed rule. FSMCs that provide school meals under contract to SFAs will need to alter those products to conform to the proposed changes in meal requirements. In addition, FSMCs may find new opportunities to work with SFAs that currently do not contract for food service assistance, a "beneficial impact" of the regulation. Consistent with SBA guidance, which notes that "[t]he courts have held that the RFA requires an agency to perform a regulatory flexibility analysis of small entity impacts only when a rule directly regulates them",[89] we do not attempt to quantify the economic effect of the proposed rule on FSMCs.

Federal Rules That May Duplicate, Overlap or Conflict With the Proposed Rule

FNS is unaware of any such Federal rules or laws.

[88] SBA's "A Guide for Government Agencies" identifies several examples of significant impact: A rule that provides a strong disincentive to seek capital; 175 staff hours per year for recordkeeping; impacts greater than the $500 fine (in 1980 dollars) imposed for noncompliance; new capital requirements beyond the reach of the entity; and any impact less cost-efficient than another reasonable regulatory alternative.

[89] SBA, "A Guide for Government Agencies", p. 20.

Significant Alternatives

The proposed rule establishes a single effective date that applies to all local educational agencies (LEAs), regardless of size. Schools vary in the extent to which they meet current nutrition requirements for reimbursable meals. Though most are reasonably successful in meeting the food group requirements under current rules, some schools may find it operationally difficult, or too costly, to prepare and serve meals that satisfy the new requirements of the proposed rule by SY 2012–2013.

Though we are not aware of any evidentiary basis to distinguish groups of schools that may find it more difficult to meet the proposed requirements than others, the regulatory impact analysis considers as an alternative the phase-in adopted by Congress for the requirement to conduct direct certification under Section 104 of the Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108–265). LEAs with more than 25,000 students could be required to implement by SY 2012–2013, those with 10,000 to 25,000 students by SY 2013–2014, and those with less than 10,000 students by SY 2014–2015. Final whole grain requirements would become effective two years after implementation in each cohort of LEAs. Such an approach would give smaller LEAs more time to meet the requirements than larger ones and reduce the cost and impact of the rule during the first five years of implementation.

It would also, however, reduce the potential benefits of providing more nutritious meals to the children in those schools. Participation in the school meals program is highest among elementary school students; participation decreases as students move to middle and high school. One of the stated goals of IOM was to "foster healthy eating habits" through exposure to the school meals program. Because of the decrease in participation among older students, the school meals program has only a limited opportunity to influence the eating habits of some students. Students in smaller SFAs who are not introduced to the proposed meal requirements while still in elementary school may not benefit at all from delayed implementation of the rule. Because a phased implementation would deny some students the benefits of healthier school meals, this alternative schedule was not proposed.

List of Subjects

7 CFR Part 210

Grant programs—education, Grant programs—health, Infants and children, Nutrition, Penalties, Reporting and record keeping requirements, School breakfast and lunch programs, Surplus agricultural commodities.

7 CFR Part 220

Grant programs—education, Grant programs—health, Infants and children, Nutrition, Reporting and record keeping requirements, School breakfast and lunch programs.

Accordingly, 7 CFR Parts 210 and 220 are proposed to be amended as follows:

PART 210–NATIONAL SCHOOL LUNCH PROGRAM

1. The authority citation for 7 CFR part 210 continues to read as follows:

Authority: 42 U.S.C. 1751–1760, 1779.

2. In § 210.2:

a. Revise the definition of *Food component;*

b. Revise the definition of *Food item;*

c. Amend the definition of *Lunch* by removing the words "applicable nutrition standards and portion sizes" and adding in their place the words "meal requirements";

d. Remove the definition of *Menu item;*

e. Remove the definition of *Nutrient Standard Menu Planning/Assisted Nutrient Standard Menu Planning;*

f. Revise the definition of *School week;* and

g. Add the definition of *Whole grains.*

The revisions and additions read as follows:

§ 210.2 Definitions.

* * * * *

Food component means one of the five food groups which comprise reimbursable meals. The five food components are: Meats/meat alternates, grains, vegetables, fruits, and fluid milk.

* * * * *

Food item means a specific food offered within the five food components: Meats/meat alternates, grains, vegetables, fruits, and fluid milk.

* * * * *

School week means the period of time used to determine compliance with the meal requirements in § 210.10. The period shall be a normal school week of five consecutive days; however, to accommodate shortened weeks resulting from holidays and other scheduling needs, the period shall be a minimum of three consecutive days and a maximum of seven consecutive days. Weeks in which school lunches are offered less than three times shall be combined with either the previous or the coming week.

* * * * *

Whole grains means grains that consist of the intact, ground, cracked, or flaked grain seed whose principal anatomical components—the starchy endosperm, germ and bran—are present in the same relative proportions as they exist in the intact grain seed. Whole grain-rich products must conform to FNS guidance to count toward the grains component.

* * * * *

3. Revise § 210.10 to read as follows:

§ 210.10 Meal requirements for lunches and requirements for afterschool snacks.

(a) *General requirements.* (1) *General nutrition requirements.* Schools must offer nutritious, well-balanced, and age-appropriate meals to all the children they serve to improve their diets and safeguard their health.

(i) *Requirements for lunch.* School lunches offered to children age 5 or older must meet, at a minimum, the meal requirements in paragraph (b) of this section. Schools must follow a food-based menu planning approach and produce enough food to offer each child the quantities specified in the meal pattern established in paragraph (c) of this section for each age/grade group served in the school. In addition, school lunches must meet the dietary specifications in paragraph (f) of this section. Schools offering lunches to children ages 1 to 4 and infants must meet the meal pattern requirements in paragraph (p) of this section.

(ii) *Requirements for afterschool snacks.* Schools offering afterschool snacks in afterschool care programs must meet the meal pattern requirements in paragraph (o) of this section. Schools must plan and produce enough food to offer each child the minimum quantities under the meal pattern in paragraph (o) of this section. The component requirements for meal supplements served under the Child and Adult Care Food Program authorized under part 226 of this chapter also apply to afterschool snacks served in accordance with paragraph (o) of this section.

(2) *Unit pricing.* Schools must price each meal as a unit. Schools need to consider participation trends in an effort to provide one reimbursable lunch and, if applicable, one reimbursable afterschool snack for each child every school day. If there are leftover meals, schools may offer them to the students but cannot get reimbursement for them. Schools must identify, near or at the beginning of the serving line(s), the food items that constitute the unit-priced reimbursable school meal(s).

(3) *Production and menu records.* Schools or school food authorities, as

applicable, must keep production and menu records for the meals they produce. These records must show how the meals offered contribute to the required food components and food quantities for each age/grade group every day. Labels or manufacturer specifications for food products and ingredients used to prepare school meals must indicate zero grams of *trans* fat per serving (less than 0.5 grams). Schools or school food authorities must maintain records of the latest nutritional analysis of the school menus conducted by the State agency. Production and menu records must be maintained in accordance with FNS guidance.

(b) *Meal requirements for school lunches.* School lunches for children ages 5 and older must reflect food and nutrition requirements specified by the Secretary. Compliance with these requirements is measured as follows:

(1) *On a daily basis:* (i) Meals offered to each age/grade group must include the food components and food quantities specified in the meal pattern in paragraph (c) of this section;

(ii) Food products or ingredients used to prepare meals must contain zero grams of *trans* fat per serving or a minimal amount of naturally-occurring trans fat; and

(iii) Meals selected by each student must have the number of food components required for a reimbursable meal and include at least one fruit or vegetable.

(2) *Over a 5-day school week:* (i) Average calorie content of meals offered to each age/grade group must be within the minimum and maximum calorie levels specified in paragraph (f) of this section;

(ii) Average saturated fat content of the meals offered to each age/grade group must be less than 10 percent of total calories; and

(iii) Average sodium content of the meals offered to each age/grade group must not exceed the maximum level specified in paragraph (f) of this section.

(c) *Meal pattern for school lunches.* Schools must offer the food components and quantities required in the lunch meal pattern established in the following table:

	Lunch Meal Pattern		
	Grades K-5	Grades 6-8	Grades 9-12
Meal Pattern	Amount of Food[a] Per Week (Minimum Per Day)		
Fruits (cups)[b]	2.5 (0.5)	2.5 (0.5)	5 (1)
Vegetables (cups)[b]	3.75 (0.75)	3.75 (0.75)	5 (1)
Dark green	0.5[c]	0.5[c]	0.5[c]
Orange	0.5[c]	0.5[c]	0.5[c]
Legumes	0.5[c]	0.5[c]	0.5[c]
Starchy	1[e]	1[d]	1[d]
Other	1.25[c]	1.25[c]	2.5[c]
Grains (oz eq)[e]	9-10 (1)	9-10 (1)	12-13 (2)
Meats/Meat Alternates (oz eq)	8-10 (1)	9-10 (1)	10-12 (2)
Fluid milk (cups)[f]	5 (1)	5 (1)	5 (1)
Other Specifications: Daily Amount Based on the Average for a 5-Day Week			
Min-max calories (kcal)[gh]	550-650	600-700	750-850
Saturated fat (% of total calories)[g]	< 10	< 10	< 10
Sodium (mg)[i]	≤ 640	≤ 710	≤ 740
Trans fat	Nutrition label or manufacturer specifications must indicate zero grams of trans fat per serving.		

[a]Food items included in each group and subgroup and amount equivalents. Minimum serving is ⅛ cup.
[b]One cup of fruits and vegetables usually provides 2 servings; ¼ cup of dried fruit counts as ½ cup of fruit; 1 cup of leafy greens counts as ½ cup of vegetables. No more than half of the fruit offerings may be in the form of juice. All juice must be pasteurized, 100% full strength.
[c]Larger amounts of these vegetables may be served.
[d]A maximum of 1 cup of starchy vegetables may be served per week. Starchy vegetables include white potatoes, corn, green peas, and lima beans.
[e]At least half of grains offered must be whole grain-rich. Aiming for a higher proportion of whole grain-rich foods is encouraged. Two years post implementation of the final rule, all grains must be whole grain-rich.
[f]Fluid milk must be low-fat (1% milk fat, unflavored) or fat-free (unflavored or flavored).
[g]The average daily amount for a 5-day school week must fall within the minimum and maximum levels
[h]Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium.
[i] Sodium targets are to be reached 10 years after implementation of the final rule. Intermediate targets have been established to ensure that action to reduce the sodium content of school meals over the 10-year period maintains student participation rates.

(1) *Age/grade groups.* Schools must plan menus for students using the following age/grade groups: grades K–5 (ages 5–10), grades 6–8 (ages 11–13), and grades 9–12 (ages 14–18). If an unusual grade configuration in a school prevents the use of these established age/grade groups, students in grades K–5 and grades 6–8 may be offered the same food quantities at lunch provided that the calorie and sodium standards for each age/grade group are met. No customization of the established age/grade groups is allowed.

(2) *Food components.* Schools must offer students in each age/grade group the food components specified in paragraph (c) of this section.

(i) *Meats/meat alternates component.* Schools must offer meats/meat alternates daily as part of the lunch meal pattern. The quantity of meats/meat alternates must be the edible portion as served. This component must be served in a main dish or in a main dish and only one other food item. Schools without daily choices in this component should not serve any one meat alternate or form of meat (for example, ground, diced, pieces) more than three times in the same week. If a portion size of this component does not meet the daily requirement for a particular age/grade group, schools may supplement it with another meats/meat alternates to meet the full requirement. Schools may adjust the daily quantities of this component provided that a minimum of one ounce is offered daily and the total weekly requirement is met over a five-day period.

(A) *Enriched macaroni.* Enriched macaroni with fortified protein as defined in Appendix A to this part may be used to meet part of the meats/meat alternates requirement when used as specified in Appendix A to this part. An enriched macaroni product with fortified protein as defined in Appendix A to this part may be used to meet part

of the meats/meat alternates component or the grains component but not as both food components in the same lunch.

(B) *Nuts and seeds.* Nuts and seeds and their butters are allowed as meat alternates in accordance with program guidance. Acorns, chestnuts, and coconuts may not be used because of their low protein and iron content. Nut and seed meals or flours may be used only if they meet the requirements for Alternate Protein Products established in Appendix A to this part. Nuts or seeds may be used to meet no more than one-half (50 percent) of the meats/meat alternates component with another meats/meat alternates to meet the full requirement.

(C) *Yogurt.* Yogurt may be used to meet all or part of the meats/meat alternates component. Yogurt may be plain or flavored, unsweetened or sweetened. Noncommercial and/or non-standardized yogurt products, such as frozen yogurt, drinkable yogurt products, homemade yogurt, yogurt flavored products, yogurt bars, yogurt covered fruits and/or nuts or similar products are not creditable. Four ounces (weight) or ½ cup (volume) of yogurt equals one ounce of the meats/meat alternates requirement.

(ii) *Fruits component.* Schools must offer fruits daily as part of the lunch menu. Fruits that are fresh; frozen without sugar; canned in light syrup, water or fruit juice; or dried may be offered to meet the requirements of this paragraph. All fruits are credited based on their volume as served, except that ¼ cup of dried fruit counts as ½ cup of fruit. Only pasteurized, full-strength fruit juice may be used, and may be credited to meet no more than one-half of the fruits component.

(iii) *Vegetables component.* Schools must offer vegetables daily as part of the lunch menu. Fresh, frozen, or canned vegetables and dried legumes may be offered to meet this requirement. All vegetables are credited based on their volume as served, except that 1 cup of leafy greens counts as ½ cup of vegetables. Pasteurized, full-strength vegetable juice may be used to meet no more than one-half of the vegetable requirement. Cooked dry beans or peas may be counted as either a vegetable or as a meat alternate but not as both in the same meal. Vegetable offerings at lunch must include the following vegetable subgroups in the quantities specified in the meal pattern in paragraph (c) of this section:

(A) *Dark green vegetables.* This subgroup includes bok choy, broccoli, collard greens, dark green leafy lettuce, kale, mustard greens, romaine lettuce, spinach, turnip greens, and watercress;

(B) *Orange vegetables.* This subgroup includes acorn squash, butternut squash, carrots, pumpkin, and sweet potato;

(C) *Legumes (dry beans).* This subgroup includes black beans, black-eyed peas, garbanzo beans, green peas, kidney beans, lentils, lima beans, soy beans, split peas, and white beans;

(D) *Starchy vegetables.* This subgroup includes corn, green peas, lima beans, and white potatoes. Green peas and fresh, frozen, or canned (not dried) lima beans are considered part of this subgroup and part of the legumes subgroup, but must be counted in one subgroup only in the same meal; and

(E) *Other vegetables.* This subgroup includes all other fresh, frozen, and canned vegetables, cooked or raw, including tomatoes, tomato juice, iceberg lettuce, green beans, and onions.

(iv) *Grains component.* (A) *Enriched or whole grains.* All grains must be enriched or whole grain-rich, or made with enriched or whole grain meal or flour, in accordance with the most recent grains guidance from FNS.

(B) *Daily and weekly servings.* The grains requirement is based on minimum daily servings plus total servings over a five-day school week. Half of the grains offered during the school week must meet the whole grain-rich criteria specified in FNS guidance. Two years post implementation of the final rule all grains offered during the school week must meet the whole grain-rich criteria specified in FNS guidance. The whole grain-rich criteria may be updated to reflect additional information provided voluntarily by industry on the food label or a whole grains definition by the Food and Drug Administration. Schools serving lunch 6 or 7 days per week must increase the weekly grains quantity by approximately 20 percent (1/5th) for each additional day. When schools operate less than 5 days per week, they may decrease the weekly quantity by approximately 20 percent (1/5th) for each day less than five. The servings for biscuits, rolls, muffins, pastas, cereals, and other grains varieties are specified in program guidance.

(C) *Desserts.* Schools may count up to one grain-based dessert per day towards meeting the grains requirement as specified in the Grains/Bread Instruction issued by FNS.

(v) *Fluid milk component.* Fluid milk must be offered daily in accordance with paragraph (d) of this section.

(3) *Food components in outlying areas.* Schools in American Samoa, Puerto Rico and the Virgin Islands may serve vegetables such as yams, plantains, or sweet potatoes to meet the grains component.

(4) *Adjustments to the school menus.* Schools must adjust future menu cycles to reflect production and how often the food items are offered. Schools may need to change the foods offered given the students' selections and may need to modify the recipes and other specifications to make sure that the meal requirements are met.

(5) *Standardized recipes.* All schools must develop and follow standardized recipes. A standardized recipe is a recipe that was tested to provide an established yield and quantity using the same ingredients for both measurement and preparation methods. Standardized recipes developed by USDA/FNS are in the Child Nutrition Database. If a school has its own recipes, they may seek assistance from the State agency or school food authority to standardize the recipes. Schools must add any local recipes to their local database as outlined in FNS guidance.

(6) *Processed foods.* The Child Nutrition Database includes a number of processed foods. Schools may use purchased processed foods that are not in the Child Nutrition Database. Schools or the State agency must add any locally purchased processed foods to their local database as outlined in FNS guidance. The State agencies must obtain the levels of calories, saturated fat, and sodium in the processed foods.

(7) *Menu substitutions.* Schools should always try to substitute nutritionally similar foods.

(d) *Fluid milk requirement.* (1) *Types of fluid milk.* (i) Schools must offer students a variety of fluid milk. Milk must be fat-free or low-fat. Milk with higher fat content is not allowed. Fat-free fluid milk may be flavored or unflavored, and low-fat fluid milk must be unflavored. Lactose-free fluid milk may also be offered.

(ii) All fluid milk served in the Program must be pasteurized fluid milk which meets State and local standards for such milk. All fluid milk must have vitamins A and D at levels specified by the Food and Drug Administration and must be consistent with State and local standards for such milk.

(2) *Inadequate fluid milk supply.* If a school cannot get a supply of fluid milk, it can still participate in the Program under the following conditions:

(i) If emergency conditions temporarily prevent a school that normally has a supply of fluid milk from obtaining delivery of such milk, the State agency may allow the school to serve meals during the emergency period with an alternate form of fluid milk or without fluid milk.

(ii) If a school is unable to obtain a supply of any type of fluid milk on a continuing basis, the State agency may approve the service of meals without fluid milk if the school uses an equivalent amount of canned milk or dry milk in the preparation of the meals. In Alaska, Hawaii, American Samoa, Guam, Puerto Rico, and the Virgin Islands, if a sufficient supply of fluid milk cannot be obtained, "fluid milk" includes reconstituted or recombined fluid milk, or as otherwise allowed by FNS through a written exception.

(3) *Fluid milk substitutes.* If a school chooses to offer one or more substitutes for fluid milk for non-disabled students with medical or special dietary needs, the nondairy beverage(s) must provide the nutrients listed in the following table. Fluid milk substitutes must be fortified in accordance with fortification guidelines issued by the Food and Drug Administration. A school need only offer the nondairy beverage(s) that it has identified as allowable fluid milk substitutes according to the following chart.

Nutrient	Per cup (8 fl oz)
Calcium	276 mg.
Protein	8 g.
Vitamin A	500 IU.
Vitamin D	100 IU.
Magnesium	24 mg.
Phosphorus	222 mg.
Potassium	349 mg.
Riboflavin	0.44 mg.
Vitamin B–12	1.1 mcg.

(4) *Restrictions on the sale of fluid milk.* A school participating in the Program, or a person approved by a school participating in the Program, must not directly or indirectly restrict the sale or marketing of fluid milk (as identified in paragraph (d)(1) of this section) at any time or in any place on school premises or at any school-sponsored event.

(e) *Offer versus serve.* School lunches must offer daily the five food components specified in the meal pattern in paragraph (c) of this section. Under offer versus serve, students in senior high (as defined by the State educational agency) must be allowed to decline two items at lunch but must select at least one fruit or vegetable. Students below the senior high level may participate in offer versus serve at the discretion of the school food authority. The price of a reimbursable lunch does not change if the student does not take a food item or requests smaller portions. Schools may not require a student to take the entrée, which is a combination of foods or a single food item that is offered as the main course.

(f) *Dietary specifications.* (1) *Calories.* School lunches offered to each age/grade group must meet, on average over the school week, the minimum and maximum calorie levels specified in the following table:

	Calorie ranges for lunch		
	Grades K–5	Grades 6–8	Grades 9–12
Min-max calories (kcal) [a] [b]	550–650	600–700	750–850

[a] The average daily amount for a 5-day school week must fall within the minimum and maximum levels.
[b] Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium.

(2) *Saturated fat.* School lunches offered to all age/grade groups must, on average over the school week, provide less than 10 percent of total calories from saturated fat.

(3) *Sodium.* School lunches offered to each age/grade group must meet, on average over the school week, the levels of sodium specified in the following table:

National School Lunch Program		Sodium Reduction: Timeline & Amount		
Age/Grade Group	**Baseline: Average Current Sodium Levels in Meals As Offered[1] (mg)**	**Target 1: 2 years post implementation (mg)**	**Target 2: 4 years post implementation (mg)**	**Final Target: 10 years post implementation (mg)**
K-5	1,377 (elementary)	≤ 1,230	≤ 935	≤ 640
6-8	1,520 (middle)	≤ 1,360	≤ 1,035	≤ 710
9-12	1,588 (high)	≤ 1,420	≤ 1,080	≤ 740

[1] SNDA-III

(4) *Trans fat.* Food products and ingredients used to prepare school meals must contain zero grams of *trans* fat (less than 0.5 grams) per serving. Schools must add the *trans* fat specification and request the required documentation (nutrition label or manufacturer specifications) in their procurement contracts. Documentation for food products and food ingredients must indicate zero grams of *trans* fat per serving. Meats that contain a minimal amount of naturally-occurring *trans* fats are allowed in the school meal programs.

(g) *Compliance assistance.* The State agency and school food authority must provide technical assistance and training to assist schools in planning lunches that meet the meal pattern in paragraph (c) of this section and the calorie, saturated fat, sodium, and *trans* fat specifications established in paragraph (f) of this section. Compliance assistance may be offered during annual training, onsite visits, and/or administrative reviews.

(h) *State Agency responsibilities for monitoring dietary specifications.* (1) *Calories, saturated fat and sodium.* As part of the administrative review authorized under § 210.18 of this chapter, State agencies must conduct a nutrient analysis for the school(s) selected for review to evaluate the average levels of calories, saturated fat, and sodium of the lunches offered to students in grades K and above during the review period. The nutrient analysis must be conducted in accordance with the procedures established in paragraph (i)(3) of this section. If the results of the nutrient analysis indicate that the school lunches are not meeting the standards for calories, saturated fat, and sodium specified in paragraph (f) of this section, the State agency or school food authority must provide technical assistance and require the reviewed school to take corrective action to meet the established standards.

(2) *Trans* fat. During the administrative review, State agencies must verify that the food products or ingredients used by the reviewed school(s) contain zero grams of *trans* fat (less than 0.5 grams) per serving.

(i) *State agency's responsibilities for nutrient analyses.* (1) *Conducting the nutrient analyses.* State agencies must conduct a nutrient analysis of the reimbursable meals offered to children in grades K and above by a school selected for administrative review under § 210.18 of this chapter. The nutrient analysis must be conducted in accordance with the procedures established in paragraph (i)(3) of this section. The purpose of the nutrient analysis is to determine the average levels of calories, saturated fat, and sodium in the meals offered over a school week. Unless offered as part of a reimbursable meal, foods of minimal nutritional value (*see* appendix B to part 210) are not included in the nutrient analysis.

(2) *Software elements.* (i) *The Child Nutrition Database.* The nutrient analysis is based on the USDA Child Nutrition Database. This database is part of the software used to do a nutrient analysis. Software companies or others developing systems for schools may contact FNS for more information about the database.

(ii) *Software evaluation.* FNS or an FNS designee evaluates any nutrient analysis software before it may be used in schools. FNS or its designee determines if the software, as submitted, meets the minimum requirements. The approval of software does not mean that FNS or USDA endorses it. The software must be able to perform a weighted average analysis after the basic data is entered. The combined analysis of the lunch and breakfast programs is not allowed.

(3) *Nutrient analysis procedures.* (i) *Weighted averages.* State agencies must include all foods offered in the reimbursable meals in the nutrient analysis. Foods items are included based on the portion sizes and projected serving amounts. They are also weighted based on their proportionate contribution to the meals offered. This means that food items offered more frequently are weighted more heavily than those not offered as frequently. State agencies calculate weighting as indicated by FNS guidance and by the guidance provided by the software.

(ii) *Analyzed nutrients.* The analysis determines the average levels of calories, saturated fat, and sodium in the meals offered over a school week. It includes all food items offered by the reviewed school over a two-week period.

(4) *Comparing the results of the nutrient analysis.* Once the procedures in paragraph (i)(3) of this section are completed, State agencies must compare the results of the analysis to the calorie, saturated fat, and sodium levels established in § 210.10 or § 220.8, as appropriate, for each age/grade group to evaluate the school's compliance with the meal requirements.

(j) *State agency's responsibilities for compliance monitoring.* Compliance with the meal requirements in paragraph (b) of this section, including dietary specifications for calories, saturated fat and sodium, will be monitored by the State agency through administrative reviews authorized in § 210.18 of this chapter.

(k) *Menu choices at lunch.* (1) *Availability of choices.* Schools may offer children a selection of nutritious foods within a reimbursable lunch to encourage the consumption of a variety of foods. Children who are eligible for free or reduced price lunches must be allowed to take any reimbursable lunch or any choices offered as part of a reimbursable lunch. Schools may establish different unit prices for each reimbursable lunch offered provided that the benefits made available to children eligible for free or reduced price lunches are not affected.

(2) *Opportunity to select.* Schools that choose to offer a variety of reimbursable lunches, or provide multiple serving lines, must make all required food components available to all students, on every lunch line, in at least the minimum required amounts.

(l) *Requirements for lunch periods.* (1) *Timing.* Schools must offer lunches meeting the requirements of this section during the period the school has designated as the lunch period. Schools must offer lunches between 10 a.m. and 2 p.m. Schools may request an exemption from these times from the State agency.

(2) *Adequate lunch periods.* FNS encourages schools to provide sufficient lunch periods that are long enough to give all students adequate time to be served and to eat their lunches.

(m) *Exceptions and variations allowed in reimbursable meals.* (1) *Exceptions for disability reasons.* Schools must make substitutions in lunches and afterschool snacks for students who are considered to have a disability under 7 CFR 15b.3 and whose disability restricts their diet. Substitutions must be made on a case by case basis only when supported by a written statement of the need for substitution(s) that includes recommended alternate foods, unless otherwise exempted by FNS. Such statement must be signed by a licensed physician.

(2) *Exceptions for non-disability reasons.* Schools may make substitutions for students without disabilities who cannot consume the regular lunch or afterschool snack because of medical or other special dietary needs. Substitutions must be made on a case by case basis only when supported by a written statement of the need for substitutions that includes recommended alternate foods, unless otherwise exempted by FNS. Except with respect to substitutions for fluid milk, such a statement must be signed by a recognized medical authority.

(i) *Fluid milk substitutions for non-disability reasons.* Schools may make substitutions for fluid milk for non-disabled students who cannot consume fluid milk due to medical or special dietary needs. A school that selects this option may offer the nondairy beverage(s) of its choice, provided the beverage(s) meets the nutritional standards established under paragraph (d) of this section. Expenses incurred when providing substitutions for fluid milk that exceed program reimbursements must be paid by the school food authority.

(ii) *Requisites for fluid milk substitutions.* (A) A school food authority must inform the State agency if any of its schools choose to offer fluid milk substitutes other than for students with disabilities; and

(B) A medical authority or the student's parent or legal guardian must submit a written request for a fluid milk substitute identifying the medical or other special dietary need that restricts the student's diet.

(iii) *Substitution approval.* The approval for fluid milk substitution must remain in effect until the medical authority or the student's parent or legal guardian revokes such request in writing, or until such time as the school changes its substitution policy for nondisabled students.

(3) *Variations for ethnic, religious, or economic reasons.* Schools should consider ethnic and religious preferences when planning and preparing meals. Variations on an experimental or continuing basis in the food components for the meal pattern in paragraph (c) of this section may be allowed by FNS. Any variations must be consistent with the food and nutrition requirements specified under this section and needed to meet ethnic, religious, or economic needs.

(4) *Exceptions for natural disasters.* If there is a natural disaster or other catastrophe, FNS may temporarily allow schools to serve meals for reimbursement that do not meet the requirements in this section.

(n) *Nutrition disclosure.* To the extent that school food authorities identify foods in a menu, or on the serving line or through other communications with program participants, school food authorities must identify products or dishes containing more than 30 parts fully hydrated alternate protein products (as specified in appendix A of this part) to less than 70 parts beef, pork, poultry or seafood on an uncooked basis, in a manner which does not characterize the product or dish solely as beef, pork, poultry or seafood. Additionally, FNS encourages schools to inform the students, parents, and the public about efforts they are making to meet the meal requirements for school lunches.

(o) *Afterschool snacks.* Eligible schools operating afterschool care programs may be reimbursed for one afterschool snack served to a child (as defined in § 210.2) per day.

(1) Eligible schools mean schools that:

(i) Operate school lunch programs under the Richard B. Russell National School Lunch Act; and

(ii) Sponsor afterschool care programs as defined in § 210.2.

(2) Afterschool snacks shall contain two different components from the following four:

(i) A serving of fluid milk as a beverage, or on cereal, or used in part for each purpose;

(ii) A serving of meat or meat alternate. Nuts and seeds and their butters listed in program guidance are nutritionally comparable to meat or other meat alternates based on available nutritional data. Acorns, chestnuts, and coconuts are excluded and shall not be used as meat alternates due to their low protein content. Nut or seed meals or flours shall not be used as a meat alternate except as allowed under appendix A of this part;

(iii) A serving of vegetable(s) or fruit(s) or full-strength vegetable or fruit juice, or an equivalent quantity of any combination of these foods. All fruits and vegetables are credited based on their volume as served. Juice may not be served when fluid milk is served as the only other component;

(iv) A serving of whole-grain or enriched bread; or an equivalent serving of a bread product, such as cornbread, biscuits, rolls, or muffins made with whole-grain or enriched meal or flour; or a serving of cooked whole-grain or enriched pasta or noodle products such as macaroni, or cereal grains such as enriched rice, bulgur, or enriched corn grits; or an equivalent quantity of any combination of these foods.

(3) Afterschool snacks served to infants ages birth through 11 months must meet the requirements in paragraph (o)(3)(iv) of this section. Foods offered as meal supplements must be of a texture and a consistency that are appropriate for the age of the infant being served. The foods must be served during a span of time consistent with the infant's eating habits. For those infants whose dietary needs are more individualized, exceptions to the meal pattern must be made in accordance with the requirements found in paragraph (m) of this section.

(i) *Breastmilk and iron-fortified formula.* Either breastmilk or iron-fortified infant formula, or portions of both, must be served for the entire first year. Snacks containing breastmilk and snacks containing iron-fortified infant formula supplied by the school are eligible for reimbursement. However, infant formula provided by a parent (or guardian) and breastmilk fed directly by the infant's mother, during a visit to the school, contribute to a reimbursable snack only when the school supplies at least one component of the infant's snack.

(ii) *Fruit juice.* Juice should not be offered to infants until they are 6 months of age and ready to drink from a cup. Fruit juice served as part of the meal pattern for infants 8 through 11 months must be full-strength and pasteurized.

(iii) *Solid foods.* Solid foods of an appropriate texture and consistency are required only when the infant is developmentally ready to accept them. The school should consult with the infant's parent (or guardian) in making the decision to introduce solid foods. Solid foods should be introduced one at a time, on a gradual basis, with the intent of ensuring the infant's health and nutritional well-being.

(iv) *Infant meal pattern.* Meal supplements for infants must include, at a minimum, breastmilk or iron-fortified infant formula, or portions of both, in the appropriate amount indicated for the infant's age. For some breastfed infants who regularly consume less than the minimum amount of breastmilk per feeding, a serving of less than the minimum amount of breastmilk may be offered. In these situations, additional breastmilk must be offered if the infant is still hungry. Some infants may be developmentally ready to accept an additional food component. Meal supplements are reimbursable when schools provide all of the components in the Supplements for Infants table that the infant is developmentally ready to accept.

(4) The minimum amounts of food components to be served as meal supplements follow. Select two different components from the four listed in the Supplements for Infants table (Juice may not be served when fluid milk is served as the only other component). A serving of bread/bread alternate must be made from whole-grain or enriched meal or flour. It is required only when the infant is developmentally ready to accept it.

SUPPLEMENTS FOR INFANTS

	Birth through 3 months	4 through 7 months	8 through 11 months
Supplement (snack)	4–6 fl. oz. breastmilk [1,2] or formula [3].	4–6 fl. oz. breastmilk [1,2] or formula [3].	2–4 fl. oz. breastmilk [1,2], formula [3], or fruit juice [4]; 0–½ bread [5] or 0–2 crackers [5]

[1] It is recommended that breastmilk be served in place of formula from birth through 11 months.
[2] For some breastfed infants who regularly consume less than the minimum amount of breastmilk per feeding, a serving of less than the minimum amount of breastmilk may be offered with additional breastmilk offered if the infant is still hungry.
[3] Infant formula must be iron-fortified.
[4] Fruit juice must be full-strength and pasteurized.
[5] Bread and bread alternates must be made from whole grain or enriched meal or flour. A serving of this component must be optional.

(p) Lunches for preschoolers and infants. (1) *Requirements for preschooler's lunch pattern.* (i) *General.* Until otherwise instructed by the Secretary, lunches for children ages 1 to 4 must meet the nutrition standards in paragraph (p)(2) of this section, the nutrient and calorie levels in paragraph (p)(3) of this section, and meal pattern in paragraph (p)(4) of this section.

(ii) *Unit pricing.* Schools must price each meal as a unit. Schools need to consider participation trends in an effort to provide one reimbursable lunch for each child every day. If there are leftover meals, schools may offer them to the students but cannot receive reimbursement for them.

(iii) *Production and menu records.* Schools must keep production and menu records for the meals they produce. These records must show how the meals contribute to the required food components and quantities every day. In addition, these records must show how the lunches contribute to the nutrition standards in paragraph (p)(2) of this section and the appropriate calorie and nutrient requirements for the children served. Schools or school food authorities must maintain records of the latest nutritional analysis of the school menus conducted by the State agency.

(2) *Nutrition standards for preschoolers' lunches.* Children ages 1 to 4 must be offered lunches that meet the following nutrition standards for their age group:

(i) Provision of one-third of the Recommended Dietary Allowances (RDAs) for protein, calcium, iron, vitamin A and vitamin C in the appropriate levels for the ages/grades (*see* paragraph (p)(3) of this section).

(ii) Provision of the lunchtime energy allowances (calories) in the appropriate levels (*see* paragraph (p)(3) of this section);

(iii) The following dietary recommendations:

(A) Eat a variety of foods;

(B) Limit total fat to 30 percent of total calories;

(C) Limit saturated fat to less than 10 percent of total calories;

(D) Choose a diet low in cholesterol;

(E) Choose a diet with plenty of grain products, vegetables, and fruits; and

(F) Choose a diet moderate in salt and sodium.

(iv) The following measures of compliance:

(A) Limit the percent of calories from total fat to 30 percent of the actual number of calories offered;

(B) Limit the percent of calories from saturated fat to less than 10 percent of the actual number of calories offered;

(C) Reduce sodium and cholesterol levels; and

(D) Increase the level of dietary fiber.

(v) Compliance with the nutrition standards and the appropriate nutrient and calorie levels is determined by the State agency in accordance with the procedures in paragraph (p)(10) of this section.

(3) *Nutrient and calorie levels.* The minimum levels of nutrients and calories that lunches for preschoolers must offer are specified in the following table:

Minimum Nutrient and Calorie Levels for Lunches Traditional Food-Based Menu Planning Approach[1]	
	Group II Preschool Ages 3-4
Nutrients and Energy Allowances	School Week Averages
Energy allowances (calories)	517
Total fat (as a percentage of actual total food energy)	[2]
Saturated fat (as a percentage of actual total food energy)	[2]
RDA for protein (g)	7
RDA for calcium (mg)	267
RDA for iron (mg)	3.3
RDA for Vitamin A (RE)	150
RDA for Vitamin C (mg)	14

[1]Current regulations only specify minimum nutrient and calorie levels for lunches for children ages 3-4.
[2]The 1995 Dietary Guidelines recommend that after 2 years of age "…children should gradually adopt a diet that, by about 5 years of age, contains no more than 30 percent of calories from fat."

(4) *Meal pattern for preschoolers' lunches.* Schools must follow the traditional food-based menu planning approach to plan lunches for children ages 1–2 and ages 3–4.

(i) *Food components and quantities.* Lunches must offer the food components and quantities specified in the following meal pattern:

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Traditional Food-Based Menu Planning Approach Meal Plan for Lunches		
	Group I Ages 1-2 Preschool	**Group II Ages 3-4 Preschool**
Food Components and Food Items	**Minimum Quantities**	
Fluid milk (as a beverage)	6 fluid ounces	6 fluid ounces
Meat or Meat Alternates		
Lean meat, poultry, or fish	1 ounce	1 ½ ounces
Alternate Protein Products[1]	1 ounce	1 ½ ounces
Cheese	1 ounce	1 ½ ounces
Large egg	½	¾
Cooked dry beans and peas	¼ cup	⅜ cup
Peanut butter or other nut or seed butters	2 tablespoons	3 tablespoons
Yogurt, plain or flavored, unsweetened or sweetened	4 ounces or ½ cup	6 ounces or ¾ cup
The following may be used to meet no more than 50% of the requirement and must be used in combination with any of the above: Peanuts, soy nuts, tree nuts, or seeds, as listed in program guidance, or an equivalent quantity of any combination of the above meat/meat alternate (1 ounce of nuts/seeds = 1 ounce of cooked lean meat, poultry or fish)	½ ounce = 50%	¾ ounce = 50%
Vegetable or Fruit: 2 or more servings of vegetables, fruits or both	½ cup	½ cup
Grains/Breads (servings per week): Must be enriched or whole grain. A serving is a slice of bread or an equivalent serving of biscuits, rolls, etc., or ½ cup of cooked rice, macaroni, noodles, other pasta products or cereal grains	5 servings per week[2] – minimum of ½ serving per day	8 servings per week[2] – minimum of 1 serving per day

[1]Must meet the requirements in appendix A of this part.
[2]For the purposes of this table, a week equals five days.

BILLING CODE 3410–30–C

(ii) *Meat/meat alternate component.* The quantity of the meat/meat alternate component must be the edible portion as served. If the portion size of a food item for this component is excessive, the school must reduce that portion and supplement it with another meat/meat alternate to meet the full requirement. This component must be served in a main dish or in a main dish and only one other food item. Schools without daily choices in this component should not serve any one meat alternate or form of meat (for example, ground, diced, pieces) more than three times in the same week. Schools may adjust the daily quantities of this component provided that a minimum of one ounce is offered daily and the total weekly requirement is met over a five-day period.

(A) *Enriched macaroni.* Enriched macaroni with fortified protein as defined in appendix A to this part may be used to meet part of the meat/meat alternate requirement when used as specified in appendix A to this part. An enriched macaroni product with fortified protein as defined in appendix A to this part may be used to meet part of the meat/meat alternate component or the grains/breads component but not as both food components in the same lunch.

(B) *Nuts and seeds.* Nuts and seeds and their butters are allowed as meat alternates in accordance with program guidance. Acorns, chestnuts, and coconuts must not be used because of their low protein and iron content. Nut and seed meals or flours may be used only as allowed under appendix A to this part. Nuts or seeds may be used to meet no more than one-half of the meat/

meat alternate component with another meat/meat alternate to meet the full requirement.

(C) *Yogurt.* Yogurt may be used to meet all or part of the meat/meat alternate requirement. Yogurt may be plain or flavored, and unsweetened or sweetened. Noncommercial and/or non-standardized yogurt products, such as frozen yogurt, homemade yogurt, yogurt flavored products, yogurt bars, yogurt covered fruit and/or nuts or similar products are not creditable. Four ounces (weight) or ½ cup (volume) of yogurt equals one ounce of the meat/meat alternate requirement.

(iii) *Vegetable/fruit component.* Full strength vegetable or fruit juice may be used to meet no more than one-half of the vegetable/fruit requirement. Cooked dry beans or peas may be counted as either a vegetable or as a meat alternate but not as both in the same meal.

(iv) *Grains/breads component.* (A) *Enriched or whole grains.* All grains/breads must be enriched or whole grain or made with enriched or whole grain meal or flour.

(B) *Daily and weekly servings.* The requirement for the grain/bread component is based on minimum daily servings plus total servings over a five day period. Schools serving lunch 6 or 7 days per week should increase the weekly quantity by approximately 20 percent (⅕th) for each additional day. When schools operate less than 5 days per week, they may decrease the weekly quantity by approximately 20 percent (⅕th) for each day less than five. The servings for biscuits, rolls, muffins, and other grain/bread varieties are specified in the Food Buying Guide for Child Nutrition Programs (PA 1331), an FNS publication.

(C) *Minimums under the traditional food-based menu planning approach.* Schools must offer daily at least one-half serving of the grain/bread component to children in Group I and at least one serving to children in Group II. Schools which serve lunch at least 5 days a week shall serve a total of at least five servings of grains/breads to children in Group I and eight servings per week to children in Group II.

(D) *Offer versus serve.* Schools must offer all five required food items. At the school food authority's option, students in preschool may decline one or two of the five food items. The price of a reimbursable lunch does not change if the student does not take a food item or requests smaller portions.

(E) *Meal pattern exceptions for outlying areas.* Schools in American Samoa, Puerto Rico and the Virgin Islands may serve a starchy vegetable such as yams, plantains, or sweet potatoes to meet the grain/bread requirement.

(5) *Fluid milk requirement.* Schools must offer students in age group 1–2 years and age group 3–4 years fluid milk in a variety of fat contents. Schools may offer flavored or unflavored fluid milk and lactose-free fluid milk. All fluid milk served must be pasteurized fluid milk which meets State and local standards for such milk. All fluid milk must have vitamins A and D at levels specified by the Food and Drug Administration and must be consistent with State and local standards for such milk. Schools must also comply with other applicable milk requirements in § 210.10(d)(2), § 210.10(d)(3), and § 210.10(d)(4) of this part.

(6) *Menu choices.* FNS encourages schools to offer children a selection of foods at lunch. Choices provide variety and encourage consumption. Schools may offer choices of reimbursable lunches or foods within a reimbursable lunch. Children who are eligible for free or reduced price lunches must be allowed to take any reimbursable lunch or any choices offered as part of a reimbursable lunch. Schools may establish different unit prices for each lunch offered provided that the benefits made available to children eligible for free or reduced price lunches are not affected.

(7) *Requirements for lunch periods.* (i) *Timing.* Schools must offer lunches meeting the requirements of this section during the period the school has designated as the lunch period. Schools must offer lunches between 10 a.m. and 2 p.m. Schools may request an exemption from these times only from FNS.

(ii) *Lunch periods for young children.* With State agency approval, schools are encouraged to serve children ages 1 through 4 over two service periods. Schools may divide the quantities and/or the menu items, foods, or food items offered each time any way they wish.

(iii) *Adequate lunch periods.* FNS encourages schools to provide sufficient lunch periods that are long enough to give all students enough time to be served and to eat their lunches.

(8) *Exceptions and variations allowed in reimbursable meals.* Schools must comply with the requirements in § 210.10(m) of this part.

(9) *Nutrition disclosure.* If applicable, schools must follow the provisions on disclosure of Alternate Protein Products in § 210.10(n) of this part.

(10) *State agency's responsibilities for monitoring lunches.* As part of the administrative review authorized under § 210.18(g)(2) of this chapter, State agencies must evaluate compliance with the meal pattern requirements (food components and quantities) in paragraph (d) of this section. If the meals for preschoolers do not meet the requirements of this section, the State agency or school food authority must provide technical assistance and require the reviewed school to take corrective action. In addition, the State agency may take fiscal action as authorized in § 210.18(m) and § 210.19(c) of this part.

(11) *Requirements for the infant lunch pattern.* (i) *Definitions.* (A) *Infant cereal* means any iron-fortified dry cereal, specially formulated and generally recognized as cereal for infants, that is routinely mixed with breastmilk or iron-fortified infant formula prior to consumption.

(B) *Infant formula* means any iron-fortified formula intended for dietary use solely as a food for normal, healthy infants. Formulas specifically formulated for infants with inborn errors of metabolism or digestive or absorptive problems are not included in this definition. Infant formula, when served, must be in liquid state at recommended dilution.

(ii) *Feeding lunches to infants.* Lunches served to infants ages birth through 11 months must meet the requirements in paragraph (k)(5) of this section. Foods included in the lunch must be of a texture and a consistency that are appropriate for the age of the infant being served. The foods must be served during a span of time consistent with the infant's eating habits. For those infants whose dietary needs are more individualized, exceptions to the meal pattern must be made in accordance with the requirements found in § 210.10(m) of this part.

(iii) *Breastmilk and iron-fortified formula.* Either breastmilk or iron-fortified infant formula, or portions of both, must be served for the entire first year. Meals containing breastmilk and meals containing iron-fortified infant formula supplied by the school are eligible for reimbursement. However, infant formula provided by a parent (or guardian) and breastmilk fed directly by the infant's mother, during a visit to the school, contribute to a reimbursable lunch only when the school supplies at least one component of the infant's meal.

(iv) *Solid foods.* For infants ages 4 through 7 months, solid foods of an appropriate texture and consistency are required only when the infant is developmentally ready to accept them. The school should consult with the infant's parent (or guardian) in making the decision to introduce solid foods. Solid foods should be introduced one at a time, on a gradual basis, with the

intent of ensuring the infant's health and nutritional well-being.

(v) *Infant meal pattern.* Infant lunches must include, at a minimum, each of the food components indicated in Lunch Pattern for Infants table in the amount that is appropriate for the infant's age. For some breastfed infants who regularly consume less than the minimum amount of breastmilk per feeding, a serving of less than the minimum amount of breastmilk may be offered. In these situations, additional breastmilk must be offered if the infant is still hungry. Lunches may include portions of breastmilk and iron-fortified infant formula as long as the total number of ounces meets, or exceeds, the minimum amount required of this food component. Similarly, to meet the component requirements for vegetables and fruits, portions of both may be served. Infant lunches are reimbursable when schools provide all of the components in the Lunch Pattern for Infants table that the infant is developmentally ready to accept.

Lunch Pattern for Infants		
Birth through 3 months	**4 through 7 months**	**8 through 11 months**
4-6 fluid ounces of formula[1] or breastmilk[2,3]	4-8 fluid ounces of formula[1] or breastmilk[2, 3]; and 0-3 tablespoons of infant cereal[1, 4]; and 0-3 tablespoons of fruits or vegetables or both[4].	6-8 fluid ounces of formula[1] or breastmilk[2, 3]; and 2-4 tablespoons of infant cereal[1]; and/or 1-4 tablespoons of meat, fish, poultry, egg yolk, cooked dry beans or peas; or ½ - 2 ounces of cheese, or 1-4 ounces (volume) of cottage cheese; or 1-4 ounces (weight) of cheese food or cheese spread; and 1-4 tablespoons of fruits or vegetables or both.

[1]Infant formula and dry infant cereal must be iron-fortified.
[2]Breastmilk or formula, or portions of both, may be served; however, it is recommended that breastmilk be served in place of formula from birth through 11 months.
[3]For some breastfed infants who regularly consume less than the minimum amount of breastmilk per feeding, a serving of less than the minimum amount of breastmilk may be offered, with additional breastmilk offered if the infant is still hungry.
[4]A serving of this component is required only when the infant is developmentally ready to accept it.

5. In § 210.18:

a. Revise paragraphs (a), (b)(2)(ii), (c), (g)(2), (i)(3)(ii), and (m); and

b. Remove paragraph (h)(2) and redesignate paragraph (h)(3), (h)(4), (h)(5), and (h)(6) as paragraphs (h)(2), (h)(3), (h)(4), and (h)(5).

The revisions read as follows:

§ 210.18 Administrative reviews.

(a) *General.* Each State agency must follow the requirements of this section to conduct administrative reviews of school food authorities serving meals under parts 210 and 220 of this chapter.

(b) * * *

(2) * * *

(i) * * *

(ii) *Performance Standard 2—Meal Requirements.* Reimbursable lunches meet the meal requirements in § 210.10 of this chapter, as applicable to the age/grade group reviewed. Reimbursable breakfasts meet the meal requirements in § 220.8 of this chapter, as applicable to the age/grade group reviewed.

* * * * *

(c) *Timing of reviews.* State agencies must conduct administrative reviews of all school food authorities participating in the NSLP and/or SBP at least once during a 3-year review cycle. For each State agency, the first 3-year review cycle will start the school year that begins on July 1, 2012 and ends on June 30, 2013. Administrative reviews and follow-up reviews must be conducted as follows:

(1) *Administrative reviews.* At a minimum, State agencies must conduct administrative reviews of all school food authorities at least once during each 3-year review cycle, provided that each school food authority is reviewed at least once every 4 years. The on-site portion of the administrative review must be completed during the school year in which the review was begun.

(2) *Exceptions.* FNS may, on an individual school food authority basis, approve written requests for 1-year extensions to the 3-year review cycle specified in paragraph (c)(1) of this section if FNS determines this 3-year cycle requirement conflicts with efficient State agency management of the Programs.

(3) *Follow-up reviews.* The State agency is encouraged to conduct first follow-up reviews in the same school year as the administrative review. The first follow-up review must be conducted no later than December 31 of the school year following the administrative review. Subsequent follow-up reviews must be scheduled in accordance with paragraph (i)(5) of this section.

* * * * *

(g) * * *

(2) *Performance Standard 2 (Reimbursable lunches meet the meal requirements in § 210.10 of this chapter, as applicable to the age/grade group reviewed. Reimbursable breakfasts meet the meal requirements in § 220.8 of this chapter, as applicable to the age/grade group reviewed*). When reviewing meals, the State agency must:

(i) For the day of the review, observe the serving line(s) to determine whether all food components and food quantities required under § 210.10, as applicable, and § 220.8, as applicable, are offered.

(ii) For the day of the review, observe a significant number of the Program meals counted at the point of service for each type of serving line to determine whether the meals selected by the students contain the food components and food quantities required for a reimbursable meal under § 210.10, as applicable, and § 220.8, as applicable. If visual observation suggests that quantities offered are insufficient or excessive, the State agency must require the reviewed school(s) to provide documentation demonstrating that the required amounts of each food component were available for service for each day of the review period.

(iii) Review menu and production records for a minimum of ten operating days (specified by the State agency); such review must determine whether all food components and food quantities required under § 210.10, as applicable, and § 220.8, as applicable, of this chapter have been offered.

(iv) Conduct a nutrient analysis of the meals for students in age/grade groups K and above to determine whether the meals offered meet the calorie, sodium, and saturated fat requirements in § 210.10 and § 220.8 of this chapter, as applicable. The State agency must conduct the nutrient analysis in accordance with the procedures established in § 210.10(i) of this part. Until instructed by the Secretary, a nutrient analysis for the meals offered to preschoolers is not required. The State agency must also review nutrition labeling or manufacturer specifications for products or ingredients used to prepare school meals to verify they contain zero grams (less than 0.5 grams) of *trans* fat per serving.

* * * * *

(i) * * *

(3) * * *

(ii) For Performance Standard 2—10 percent or more of the total number of Program lunches or Program breakfasts observed in a school food authority are missing one or more of the food components required under parts 210 and 220.

* * * * *

(m) *Fiscal action.* Fiscal action for violations identified during an administrative review or any follow-up reviews must be taken in accordance with the provisions in § 210.19(c) of this part.

(1) *Performance Standard I violations.* A State agency is required to take fiscal action for all violations of the critical areas of Performance Standard 1. The State agency may limit fiscal action from the point corrective action occurs back through the beginning of the review period for errors identified under paragraphs (g)(1)(i)(A), (g)(1)(i)(B) and (g)(1)(i)(C) of this section, provided corrective action occurs.

(2) *Performance Standard 2 violations.* A State agency is required to take fiscal action for violations of the critical areas of Performance Standard 2 as follows:

(i) For food component violations cited under paragraph (g)(2) of this section, the State agency must take fiscal action and require the school food authority and/or school reviewed to take corrective action for the missing component. If a corrective action plan is in place, the State agency may limit fiscal action from the point corrective action occurs back through the beginning of the review period for errors identified under paragraph (g)(2) of this section.

(ii) For repeated violations involving vegetable subgroups and milk type cited under paragraph (g)(2) of this section, the State agency must take fiscal action provided that:

(A) Technical assistance has been given by the State agency;

(B) Corrective action has been previously required and monitored by the State agency; and

(C) The school food authority remains in noncompliance with the meal requirements established in parts 210 and 220 of this chapter.

(iii) For violations involving food quantities and whole grains cited under paragraph (g)(2) of this section and for violations of calorie, saturated fat, sodium, and *trans* fat requirements cited under paragraph (g)(2)(iv) of this section, the State agency has discretion to apply fiscal action provided that:

(A) Technical assistance has been given by the State agency;

(B) Corrective action has been previously required and monitored by the State agency; and

(C) The school food authority remains in noncompliance with the meal requirements established in parts 210 and 220 of this chapter.

* * * * *

6. In § 210.19:

a. Remove paragraph (a)(1) and redesignate paragraphs (a)(2), (a)(3), (a)(4), (a)(5), and (a)(6) as paragraph (a)(1), (a)(2), (a)(3), (a)(4), (a)(5); and

b. Revise paragraphs (c) introductory text, (c)(1) and (c)(6) to read as follows:

§ 210.19 Additional responsibilities.

* * * * *

(c) *Fiscal action.* State agencies are responsible for ensuring Program integrity at the school food authority level. State agencies must take fiscal action against school food authorities for Claims for Reimbursement that are not properly payable, including, if warranted, the disallowance of funds for failure to take corrective action to comply with the meal requirements in parts 210 and 220 of this chapter. In taking fiscal action, State agencies must use their own procedures within the constraints of this Part and must maintain all records pertaining to action taken under this section. The State agency may refer to FNS for assistance in making a claim determination under this part.

(1) *Definition.* Fiscal action includes, but is not limited to, the recovery of overpayment through direct assessment or offset of future claims, disallowance of overclaims as reflected in unpaid Claims for Reimbursement, submission of a revised Claim for Reimbursement, and correction of records to ensure that unfiled Claims for Reimbursement are corrected when filed. Fiscal action also includes disallowance of funds for failure to take corrective action to meet the meal requirements in Parts 210 and 220 of this chapter.

* * * * *

(6) *Exceptions.* The State agency need not disallow payment or collect an overpayment when any review or audit reveals that a school food authority is approving applications which indicate that the households' incomes are within the Income Eligibility Guidelines issued by the Department or the applications contain Supplemental Nutrition Assistance Program or TANF case numbers or FDPIR case numbers or other FDPIR identifiers but the applications are missing the information specified in paragraph (1)(ii) of the definition of *Documentation* in § 245.2 of this chapter.

* * * * *

§ 210.21 [Amended]

7. In § 210.21, amend paragraph (e) by removing the phrase "paragraph

(m)(1)(ii) of this section" and adding in its place the phrase "§ 210.10(d)(4)) of this chapter."

8. Revise § 210.30 to read as follows:

§ 210.30 State agency and Regional office addresses.

School food authorities and schools desiring information about the Program should contact their State educational agency or the appropriate FNS Regional Office at the address or telephone number listed on the FNS Web site (*http://www.fns.usda.gov/cnd*).

9. In Appendix B to part 210:

a. Amend paragraph (b)(1) by removing from the fourth sentence the words ", and the public by notice in the **Federal Register** as indicated below under paragraph (b)(3) of this section;"

b. Amend paragraph (b)(2) by removing the words "as indicated under paragraph (b)(3) of this section" from the last sentence.

c. Remove paragraph (b)(3) and redesignate paragraph (b)(4) as paragraph (b)(3); and

d. Revise the first sentence of newly redesignated paragraph (b)(3) to read as follows:

* * * * *

Appendix B to Part 210—Categories of Foods of Minimal Nutritional Value.

(b) * * *

(3) Written petitions should be sent to the Chief, Nutrition Promotion and Training Branch, Child Nutrition Division, FNS, USDA, 3101 Park Center Drive, Room 632, Alexandria, Virginia 22302.* * *

* * * * *

PART 220—SCHOOL BREAKFAST PROGRAM

10. The authority citation for 7 CFR part 220 continues to read as follows:

Authority: 42 U.S.C. 1773, 1779.

11. In § 220.2:

a. Amend the definition of *Breakfast* by removing the word "nutritional" and adding in its place the word "meal",

b. Remove the definition of *Menu item* and the definition of *Nutrient Standard Menu Planning/Assisted Nutrient Standard Menu Planning;*

c. Revise the definition of *School week;* and

d. Add the definition of *Whole grains* and placing the definition in alphabetical order.

The revisions and additions read as follows:

§ 220.2 Definitions.

* * * * *

School week means the period of time used to determine compliance with the meal requirements in § 220.8. The period must be a normal school week of five consecutive days; however, to accommodate shortened weeks resulting from holidays and other scheduling needs, the period must be a minimum of three consecutive days and a maximum of seven consecutive days. Weeks in which school breakfasts are offered less than three times must be combined with either the previous or the coming week.

* * * * *

Whole grains means grains that consist of the intact, ground, cracked, or flaked grain seed whose principal anatomical components—the starchy endosperm, germ and bran—are present in the same relative proportions as they exist in the intact grain seed. Whole grain-rich products must conform to FNS guidance to count toward the grains component.

* * * * *

12. Revise § 220.8 to read as follows:

§ 220.8 Meal requirements for breakfasts.

(a) *General.* School food authorities must ensure that participating schools provide nutritious, well-balanced, and age-appropriate breakfasts to all the children they serve to improve their diet and safeguard their health. School breakfasts offered to children age 5 and older must meet, at a minimum, the meal requirements in paragraph (b) of this section. Schools must follow a food-based menu planning approach and produce enough food to offer each child the quantities specified in the meal pattern established in paragraph (c) of this section for each age/grade group served in the school. In addition, school breakfasts must meet the dietary specifications in paragraph (f) of this section. Schools offering breakfasts to children ages 1 to 4 and infants must meet the meal pattern requirements in paragraph (n) of this section.

(b) *Meal requirements for school breakfasts.* School breakfasts for children ages 5 and older must reflect food and nutrition requirements specified by the Secretary. Compliance with these requirements is measured as follows:

(1) On a daily basis:

(i) Meals offered to each age/grade group must include the food components and food quantities specified in the meal pattern in paragraph (c) of this section;

(ii) Food products or ingredients used to prepare meals must contain zero grams of *trans* fat per serving or a minimal amount of naturally-occurring trans fat; and

(iii) Meals selected by each student must have the number of food components required for a reimbursable meal and include at least one fruit or vegetable.

(2) Over a 5-day school week:

(i) Average calorie content of the meals offered to each age/grade group must be within the minimum and maximum calorie levels specified in paragraph (f) of this section;

(ii) Average saturated fat content of the meals offered to each age/grade group must be less than 10 percent of total calories;

(iii) Average sodium content of the meals offered to each age/grade group must not exceed the maximum level specified in paragraph (f) of this section.

(c) *Meal pattern for school breakfasts.* A school must offer the food components and quantities required in the breakfast meal pattern established in the following table:

	School Breakfast Program		
	Grades K-5	Grades 6-8	Grades 9-12
Meal Pattern	Amount of Food[a] Per Week (Minimum Per Day)		
Fruits (cups)[b]	5 (1)	5 (1)	5 (1)
Vegetables (cups)[bc]	0	0	0
Dark green	0	0	0
Orange	0	0	0
Legumes	0	0	0
Starchy	0	0	0
Other	0	0	0
Grains[d] (oz eq)	7-10 (1)	8-10 (1)	9-10 (1)
Meats/Meat Alternates (oz eq)	5 (1)	5 (1)	7-10 (1)
Fluid milk[e](cups)	5 (1)	5 (1)	5 (1)
Other Specifications: Daily Amount Based on the Average for a 5-Day Week			
Min-max calories (kcal)[fg]	350-500	400-550	450-600
Saturated fat (% of total calories)[f]	< 10	< 10	< 10
Sodium (mg)[h]	≤ 430	≤ 470	≤ 500
Trans fat	Nutrition label or manufacturer specifications must indicate zero grams of trans fat per serving.		

[a]Food items included in each group and subgroup and amount equivalents. Minimum serving is ⅛ cup.
[b]One cup of fruits and vegetables usually provides 2 servings; ¼ cup of dried fruit counts as ½ cup of fruit; 1 cup of leafy greens counts as ½ cup of vegetables. No more than half of the fruit offerings may be in the form of juice. All juice must be pasteurized, 100% full-strength.
[c]For breakfast, ½ cup of non-starchy vegetables may be considered equivalent to ½ cup fruits.
[d]Upon implementation, at least half of grains offered must be whole grain-rich. Aiming for a higher proportion of whole grain-rich foods is encouraged. Two years post implementation, all grains must be whole grain-rich.
[e]Fluid milk must be low-fat (1% milk fat or less, unflavored) or fat-free (unflavored or flavored).
[f]The average daily amount for a 5-day school week must fall within the minimum and maximum levels.
[g]Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, trans fat, and sodium.
[h] Sodium targets are to be reached 10 years after implementation of the final rule. Intermediate targets have been established to ensure that action to reduce the sodium content of school meals over the 10-year period maintains student participation rates.

(1) *Age/grade groups.* Schools must plan menus for students using the following age/grade groups: Grades K–5 (ages 5–10), grades 6–8 (ages 11–13), and grades 9–12 (ages 14–18). If an unusual grade configuration in a school prevents the use of the established age/grade groups, students in grades K–5 and grades 6–8 may be offered the same food quantities at breakfast provided that the calorie and sodium standards for each age/grade group are met. No customization of the established age/grade groups is allowed.

(2) *Food components.* Schools must offer students in each age/grade group the food components specified in meal pattern in paragraph (c). Food component descriptions in § 210.10 of this chapter apply to this Program. A serving of non-starchy vegetables may be offered in place of fruits at breakfast. Only pasteurized full-strength fruit and vegetable juice may be used, and may be credited to meet no more than one-half of the fruits component.

(3) *Food components in outlying areas.* Schools in American Samoa, Puerto Rico and the Virgin Islands may serve a vegetable such as yams, plantains, or sweet potatoes to meet the grains component.

(4) *Production and menu records.* Schools or school food authorities, as applicable, must keep production and menu records for the meals they produce. These records must show how the meals offered contribute to the required food components and food quantities for each age/grade group every day. Labels or manufacturer specifications for food products and ingredients used to prepare school meals must indicate zero grams of *trans* fat per serving (less than 0.5 grams). Schools or school food authorities must maintain records of the latest nutritional analysis of the school menus conducted by the State agency. Production and menu records must be maintained in accordance with FNS guidance.

(d) *Fluid milk requirement.* A serving of fluid milk as a beverage or on cereal or used in part for each purpose must be offered for breakfasts. Schools must offer students a variety of fluid milk. Milk must be fat-free or low-fat. Milk with higher fat content is not allowed. Fat-free fluid milk may be flavored or unflavored, and low-fat fluid milk must be unflavored. Lactose-free fluid milk may also be offered. Schools must also comply with other applicable fluid milk

requirements in § 210.10(d)(1), § 210.10(d)(2), § 210.10(d)(3), and § 210.10(d)(4) of this chapter.

(e) *Offer versus serve.* School breakfasts must offer daily the four food components specified in the meal pattern in paragraph (c) of this section. At the option of the school food authority, each school may allow students to decline food items they do not intend to consume. Under offer versus serve, the student may decline one item at breakfast but must select at least one fruit serving, or one vegetable serving (if a vegetable is offered in place of fruit). The price of a reimbursable breakfast does not change if a student does not take a food item or requests smaller portions.

(f) *Dietary specifications.* (1) *Calories.* School breakfasts offered to each age/grade group must meet, on average over the school week, the minimum and maximum calorie levels specified in the following table:

CALORIE RANGES FOR BREAKFAST

	Grades K–5	Grades 6–8	Grades 9–12
Minimum-maximum calories (kcal)[a b]	350–500	400–550	450–600

[a] The average daily amount for a 5-day school must fall within the minimum and maximum levels.
[b] Discretionary sources of calories (solid fats and added sugars) may be added to the meal pattern if within the specifications for calories, saturated fat, *trans* fat, and sodium.

(2) *Saturated fat.* School breakfasts offered to all age/grade groups must, on average over the school week, provide less than 10 percent of total calories from saturated fat.

(3) *Sodium.* School breakfasts offered to each age/grade group must meet, on average over the school week, the levels of sodium specified in the following table:

		Sodium Reduction: Timeline & Amount		
Age/Grade Group	**Baseline: Average Current Sodium Levels As Offered[1] (mg)**	**Target 1: 2 years post implementation (mg)**	**Target 2: 4 years post implementation (mg)**	**Final Target: 10 years post implementation (mg)**
School Breakfast Program				
K-5	573 (elementary)	≤ 540	≤ 485	≤ 430
6-8	629 (middle)	≤ 600	≤ 535	≤ 470
9-12	686 (high)	≤ 640	≤ 570	≤ 500

[1]SNDA-III

(4) *Trans fat.* Food products and ingredients used to prepare school meals must contain zero grams of *trans* fat (less than 0.5 grams) per serving. Schools must add the *trans* fat specification and request the required documentation (nutrition label or manufacturer specifications) in their procurement contracts. Documentation for food products and food ingredients must indicate zero grams of *trans* fat per serving. Meats that contain a minimal amount of naturally-occurring *trans* fats are allowed in the school meal programs.

(g) *Compliance assistance.* The State agency and school food authority must provide technical assistance and training to assist schools in planning breakfasts that meet the meal pattern in paragraph (c) of this section and the calorie, saturated fat, sodium, and *trans* fat specifications established in paragraph (f) of this section. Compliance assistance may be offered during annual training, onsite visits, and/or administrative reviews.

(h) *State Agency responsibilities for monitoring dietary specifications.* (1) *Calories, saturated fat, and sodium.* As part of the administrative review authorized under § 210.18 of this chapter, State agencies must conduct a nutrient analysis for the school(s) selected for review to evaluate the average levels of calories, saturated fat, and sodium of the breakfasts offered during the review period. The nutrient analysis must be conducted in accordance with the procedures established in section 210.10(i) of this chapter. State agencies must also review nutrition labeling or manufacturer specifications for products or ingredients used to prepare school meals to verify they contain zero grams of *trans* fat per serving. If the results of the review indicate that the school breakfasts are not meeting the standards for calories, saturated fat, sodium, or *trans* fat levels specified in paragraph (f) of this section, the State agency or school food authority must provide technical assistance and require the reviewed school to develop a corrective action plan.

(2) *Trans fat.* During an administrative review, State agencies must verify that the food products or ingredients used by the reviewed school(s) contain zero grams of *trans* fat (less than 0.5 grams) per serving.

(i) *State agency responsibilities for nutrient analysis.* State agencies must conduct a nutrient analysis of all foods offered in a reimbursable breakfast by a school selected for administrative review to determine the average levels of calories, saturated fat, and sodium in the meals offered over a school week. The analysis must be conducted in accordance with the procedures established in § 210.10(i) of this chapter.

(j) *State agency's responsibilities for compliance monitoring.* Compliance with the meal requirements in paragraph (b) will be monitored by the State agency through administrative reviews authorized in § 210.18 of this chapter.

(k) *Menu choices at breakfast.* The requirements in § 210.10(k) of this chapter apply to this Program.

(l) *Exceptions and variations allowed in reimbursable meals.* The requirements in § 210.10(m) of this chapter apply to this Program.

(m) *Nutrition disclosure.* The requirements in § 210.10(n) of this chapter apply to this Program.

(n) *Breakfasts for preschoolers and infants.* (1) *Nutrition standards for breakfasts for children age 1 to 4.* Until otherwise instructed by the Secretary, breakfasts for preschoolers, when averaged over a school week, must meet the nutrition standards and the appropriate nutrient and calorie levels in this section. The nutrition standards are:

(i) Provision of one-fourth of the Recommended Dietary Allowances (RDA) for protein, calcium, iron, vitamin A and vitamin C in the appropriate levels (*see* paragraph (n)(2) of this section);

(ii) Provision of the breakfast energy allowances (calories) for children in the appropriate levels (*see* paragraph (n)(2) of this section);

(iii) The following dietary recommendations:

(A) Eat a variety of foods;

(B) Limit total fat to 30 percent of total calories;

(C) Limit saturated fat to less than 10 percent of total calories;

(D) Choose a diet low in cholesterol;

(E) Choose a diet with plenty of grain products, vegetables, and fruits; and

(F) Choose a diet moderate in salt and sodium.

(iv) The following measures of compliance:

(A) Limit the percent of calories from total fat to 30 percent of the actual number of calories offered;

(B) Limit the percent of calories from saturated fat to less than 10 percent of the actual number of calories offered;

(C) Reduce sodium and cholesterol levels; and

(D) Increase the level of dietary fiber.

(v) School food authorities must follow the traditional food-based menu planning approach to plan breakfasts for preschoolers and provide daily the food components and quantities specified in paragraph (n)(3) of this section.

(vi) Schools must keep production and menu records for the breakfasts they produce. These records must show how the breakfasts contribute to the required food components and food quantities every school day. In addition, these records must show how the breakfasts contribute to the nutrition standards in paragraph (n)(1) of this section and the appropriate calorie and nutrient levels in paragraph (n)(2) of this section over the school week. Schools or school food authorities must maintain records of the latest nutritional analysis of the school menus conducted by the State agency.

(2) *Nutrient and calorie levels for breakfasts for preschoolers.* Under the traditional food-based menu planning approach, the required levels are:

Minimum Nutrient and Calorie Levels for School Breakfasts Traditional Food-Based Menu Planning Approach

	Age 2[1]	Ages 3-4
Nutrients and Energy Allowances	**School Week Averages**	
Energy allowances (calories)	325	388
Total fat (as a percentage of actual total food energy)	2	2
Saturated fat (as a percentage of actual total food energy)	2	2
RDA for protein (g)	4	5
RDA for calcium (mg)	200	200
RDA for iron (mg)	2.5	2.5
RDA for Vitamin A (RE)	100	113
RDA for Vitamin C (mg)	10	11

[1]Nutrient and calorie levels start at age 2 because the "Dietary Guidelines for Americans" apply to ages 2 and older.
[2]The 1995 "Dietary Guidelines for Americans" recommend that after 2 years of age "children should gradually adopt a diet that, by about 5 years of age, contains no more than 30 percent of calories from fat."

(3) *Meal pattern for preschoolers.* (i) *Food items.* Schools must offer these food items in at least the portions required for each age group:

(A) A serving of fluid milk as a beverage or on cereal or used partly for both;

(B) A serving of fruit or vegetable or both, or full-strength fruit or vegetable juice; and

(C) Two servings from one of the following components or one serving from each component:

(*1*) Grains/breads; and/or

(*2*) Meat/meat alternate.

(ii) *Quantities for the traditional food-based menu planning approach.* At a minimum, schools must offer the food items in the quantities specified for the appropriate age/grade group in the following table:

Traditional Food-Based Menu Planning Approach Meal Plan for Breakfasts		
	Ages 1-2	**Ages 3-4**
Food Components and Food Items	**School Week Averages**	
Fluid milk (as a beverage, on cereal, or both)	4 fluid ounces	6 fluid ounces
Juice/Fruit/Vegetable: Fruit and/or vegetable; or full-strength fruit or vegetable juice	¼ cup	½ cup
Select one serving from each of the following components, two from one component, or an equivalent combination:		
Grains/Breads		
Whole grain or enriched bread	½ slice	½ slice
Whole grain or enriched bread product, such as biscuit, roll, muffin	½ serving	½ serving
Whole grain, enriched or fortified cereal	¼ cup or ⅓ ounce	⅓ cup or ½ ounce
Meat or Meat Alternates		
Meat/poultry or fish	½ ounce	½ ounce
Alternate protein products[1]	½ ounce	½ ounce
Cheese	½ ounce	½ ounce
Large egg	½	½
Peanut butter or other nut or seed butters	1 tablespoon	1 tablespoon
Cooked dry beans and peas	2 tablespoons	2 tablespoons
Nuts and/or seeds (as listed in program guidance)[2]	½ ounce	½ ounce
Yogurt, plain or flavored, unsweetened or sweetened	2 ounces or ¼ cup	2 ounces or ¼ cup

[1]Must meet the requirements in appendix A of this part.
[2]No more than 1 ounce of nuts and/or seeds may be served in any one breakfast.

(iii) *Offer versus serve.* Schools must offer all four required food items. At the school food authority's option, students in preschool may decline one of the four food items. The price of a reimbursable breakfast does not change if the student does not take a menu item or requests smaller portions.

(iv) *Exceptions and variations allowed in reimbursable breakfasts.* Schools must follow the requirements in § 210.10(m) of this chapter.

(4) *Fluid milk requirement.* A serving of fluid milk as a beverage or on cereal or used in part for each purpose must be offered for breakfasts. Schools must offer students in age group 1–2 and age group 3–4 fluid milk in a variety of fat contents. Schools may offer flavored or unflavored fluid milk and lactose-free fluid milk. All milk served in the Program must be pasteurized fluid milk which meets State and local standards for such milk. All fluid milk must have vitamins A and D at levels specified by the Food and Drug Administration and must be consistent with State and local standards for such milk. Schools must also comply with other applicable milk requirements in § 210.10(d)(2), § 210.10(d)(3), and § 210.10(d)(4) of this chapter.

(5) *Additional foods.* Schools may offer additional foods with breakfasts to children over one year of age.

(6) *Menu choices at breakfast.* Schools must follow the requirements in § 210.10(l) of this chapter.

(7) *Exceptions and variations allowed in reimbursable meals.* Schools must follow the requirements in § 210.10(m) of this chapter.

(8) *Nutrition disclosure.* Schools must follow the requirements in § 210.10(n) of this chapter.

(9) *State agency's responsibilities for monitoring breakfasts.* As part of the administrative review authorized under § 210.18(g)(2)of this chapter, State agencies must evaluate compliance with the meal pattern requirements (food components and quantities) in paragraph (n)(3) of this section. If the meals do not meet the requirements of this section, the State agency or school food authority must provide technical assistance and require the reviewed

school to take corrective action. In addition, the State agency must take fiscal action as authorized in § 210.18(m) and 210.19(c) of this chapter.

(10) *Requirements for the infant breakfast pattern.* (i) *Feeding breakfasts to infants.* Breakfasts served to infants ages birth through 11 months must meet the requirements described in paragraph (n)(11)(iv) of this section. Foods included in the breakfast must be of a texture and a consistency that are appropriate for the age of the infant being served. The foods must be served during a span of time consistent with the infant's eating habits. For those infants whose dietary needs are more individualized, exceptions to the meal pattern must be made in accordance with the requirements found in § 210.10(m) of this chapter.

(ii) *Breastmilk and iron-fortified formula.* Either breastmilk or iron-fortified infant formula, or portions of both, must be served for the entire first year. Meals containing breastmilk and meals containing iron-fortified infant formula supplied by the school are eligible for reimbursement. However, infant formula provided by a parent (or guardian) and breastmilk fed directly by the infant's mother, during a visit to the school, contribute to a reimbursable breakfast only when the school supplies at least one component of the infant's meal.

(iii) *Solid foods.* For infants ages 4 through 7 months, solid foods of an appropriate texture and consistency are required only when the infant is developmentally ready to accept them. The school should consult with the infant's parent (or guardian) in making the decision to introduce solid foods. Solid foods should be introduced one at a time, on a gradual basis, with the intent of ensuring the infant's health and nutritional well-being.

(iv) *Infant meal pattern.* Infant breakfasts must have, at a minimum, each of the food components indicated, in the amount that is appropriate for the infant's age. For some breastfed infants who regularly consume less than the minimum amount of breastmilk per feeding, a serving of less than the minimum amount of breastmilk may be offered. In these situations, additional breastmilk must be offered if the infant is still hungry. Breakfasts may include portions of breastmilk and iron-fortified infant formula as long as the total number of ounces meets, or exceeds, the minimum amount required of this food component. Similarly, to meet the component requirement for vegetables and fruit, portions of both may be served.

(A) *Birth through 3 months.* 4 to 6 fluid ounces of breastmilk or iron-fortified infant formula—only breastmilk or iron-fortified formula is required to meet the infant's nutritional needs.

(B) *4 through 7 months.* Breastmilk or iron-fortified formula is required. Some infants may be developmentally ready for solid foods of an appropriate texture and consistency. Breakfasts are reimbursable when schools provide all of the components in the meal pattern that the infant is developmentally ready to accept.

(*1*) 4 to 8 fluid ounces of breastmilk or iron-fortified infant formula; and

(*2*) 0 to 3 tablespoons of iron-fortified dry infant cereal.

(C) *8 through 11 months.* Breastmilk or iron-fortified formula and solid foods of an appropriate texture and consistency are required.

(*1*) 6 to 8 fluid ounces of breastmilk or iron-fortified infant formula; and

(*2*) 2 to 4 tablespoons of iron-fortified dry infant cereal; and

(*3*) 1 to 4 tablespoons of fruit or vegetable.

(v) *Infant meal pattern table.* The minimum amounts of food components to serve to infants, as described in paragraph (n)(11)(iv) of this section, are:

Breakfast Pattern for Infants		
Birth through 3 months	**4 through 7 months**	**8 through 11 months**
4–6 fluid ounces of formula[1] or breastmilk[2,3]	4–8 fluid ounces of formula[1] or breastmilk[2,3]; and 0–3 tablespoons of infant cereal[1,4]	6–8 fluid ounces of formula[1] or breastmilk[2,3]; and 2–4 tablespoons of infant cereal[1]; and 1–4 tablespoons of fruit or vegetable or both.

[1]Infant formula and dry infant cereal must be iron-fortified.
[2]Breastmilk or formula, or portions of both, may be served; however, it is recommended that breastmilk be served in place of formula from birth through 11 months.
[3]For some breastfed infants who regularly consume less than the minimum amount of breastmilk per feeding, a serving of less than the minimum amount of breastmilk may be offered, with additional breastmilk offered if the infant is still hungry.
[4]A serving of this component is required only when the infant is developmentally ready to accept it.

14. Paragraph 220.13 is amended as follows:

a. Amend paragraph (f)(2) by removing the words "§ 210.30" wherever it appears and adding in its place the words "§ 210.29"; and

b. Revise paragraph (f)(3) to read as follows:

§ 220.13 Special responsibilities of State agencies.

* * * * *

(f) * * *

(3) For the purposes of compliance with the meal requirements in § 220.8, the State agency must follow the provisions specified in § 210.18(g)(2) of this chapter, as applicable.

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Appendix A to Part 220 [Amended]

15. Amend Appendix A to part 220 by removing section I. Formulated Grain-Fruit Products in its entirety, and by removing the Roman numeral "II." from the words "II. Alternate Protein Products".

Dated: January 3, 2011.

Kevin Concannon,

Under Secretary, Food, Nutrition, and Consumer Services.

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