



**Shrinking the Carbon and  
Water Footprint of School Food:**

**A RECIPE FOR  
COMBATING  
CLIMATE CHANGE**

*A pilot analysis of Oakland Unified School District's Food Programs*

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## Executive Summary

As schools across the nation grapple with how to feed kids healthier, more sustainable food on tight budgets, an inspiring story from Oakland Unified School District provides a roadmap for change. The following case study shows how the district was able to significantly reduce its carbon and water footprint by replacing a share of its meat, poultry and cheese purchases with plant-based proteins. These actions also saved the district money and improved students' access to healthful food. If institutions across the country made similar menu shifts, we could achieve dramatic reductions in carbon emissions and water use with no additional cost to schools. This is a rare silver bullet solution that can address many challenges simultaneously.

Overconsumption of animal foods is unhealthy for us and unsustainable for our planet. Animal products are the most resource-intensive foods in our diet, requiring massive water and energy inputs. Studies show that we cannot avert the worst impacts of climate change or protect future water supplies unless we make food production more sustainable, waste less food, and reduce meat and dairy consumption in favor of plant-forward meals.<sup>1</sup> Eating fewer animal products and more plant-based foods is also better for our health and has the potential to save billions of dollars on healthcare costs by reducing the risk

of diet related diseases such as heart disease, cancer, and diabetes.<sup>2,3</sup>

The adoption of plant-forward menus by a growing numbers of school districts, hospitals, business campuses, restaurants and universities generates clear climate benefits. However these benefits have rarely been quantified or recognized by food service distributors, sustainability managers, climate change advocates or policy makers. This case study addresses that gap. Friends of the Earth (FOE) partnered with Oakland Unified School District (OUSD) to assess the full carbon and water footprint of its food procurement over a two-year period (comparing the baseline 2012-2013 school year to 2014-2015). The study tracked reductions in carbon and water footprints that occurred as a result of shifts toward less and better meat, and more vegetables and legumes. The findings confirm the importance of adding institutional meat and cheese reduction strategies to the arsenal of public policy and private sector initiatives aimed at affordably reducing GHG emissions.

### More Plant-based Foods: Better for Health, the Environment and School Budgets

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#### KEY FINDINGS: Low-carbon Meals: A Cost-effective Climate Mitigation Strategy

Our analysis found that over a two-year period Oakland Unified School District:

- ◆ Reduced its purchases of animal products by nearly 30 percent while increasing purchases of better meat from Mindful Meats, a company that sources meat from spent dairy cows raised **organically and humanely** in Northern California.<sup>4</sup>
- ◆ Reduced the carbon footprint (kg CO<sub>2</sub>-eq) of its entire food service by 14 percent from (0.70 to 0.61kg CO<sub>2</sub>-eq per meal served). This translates into roughly 600,000 Kg of CO<sub>2</sub> saved per year—the equivalent of driving 1.5 million miles less per year or covering all of OUSD's roofs with solar panels with NO additional cost.<sup>5</sup>
- ◆ Reduced embedded **water** use by nearly 6 percent—saving a total of 7 gallons per meal or a total of 42 million gallons of water per year—a substantial reduction that is equivalent to filling 840,000 bathtubs or taking 2.3 million fewer showers.<sup>6,7</sup>
- ◆ Saved \$42,000 by decreasing the amount **spent** per meal by 1 percent.
- ◆ Increased purchases of **fruits, vegetables and legumes** by approximately 10 percent.
- ◆ Increased **student satisfaction** with local, regional, fresh and tasty meals.<sup>8</sup>
- ◆ Served reduced meat or plant-based meals that **met or exceeded USDA** meal pattern requirements.

based proteins—is the single most important contribution the foodservice industry can make toward environmental sustainability.”<sup>9</sup> It is also better for our health. On average, Americans eat 50 percent more meat than is recommended by U.S. Dietary Guidelines for Americans and only 20 percent get the suggested amounts of fruits and vegetables.<sup>10,11</sup>

Furthermore, evidence is mounting that meat reduction can save institutional food service money. A pilot analysis of Health Care Without Harm’s ‘Balanced Menus: Less Meat Better Meat’ program found that four San Francisco Bay Area hospitals generated an estimated food service savings of \$400,000 per year.<sup>12</sup> The Maricopa County Jail saved an estimated \$817,000 in one year by switching from meat to all plant-based foods.<sup>13</sup>

### Resources for Healthy Climate Conscious Menus

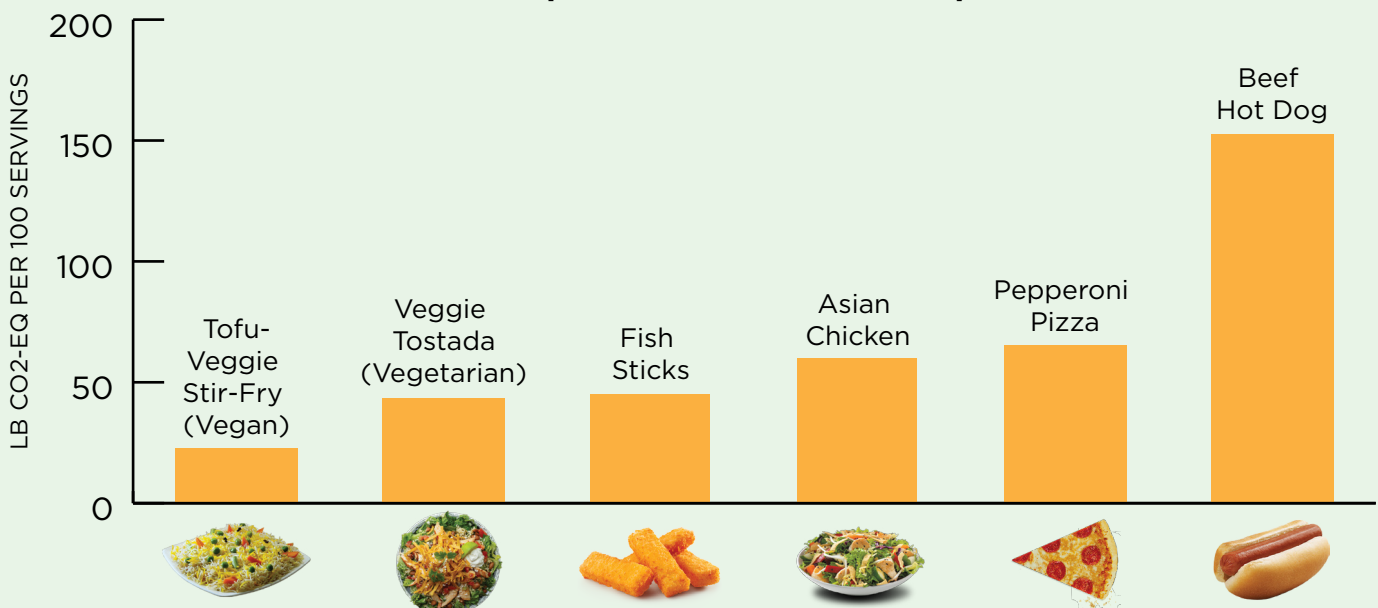
Food service directors face complex demands and requirements, and serving kids tasty and nutritious food is and must remain their number one priority. The OUSD case study shows that plant-forward menu planning is feasible and can support the mandate for healthier and more delicious food, particularly when cafeteria facilities allow for cooking from scratch. There are a range of resources and organizations ready to assist school districts in shifting to climate conscious menus, including kitchen staff training

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and recipe development. Given that climate-friendly food must taste good, Meatless Mondays and the Humane Society have developed many scalable recipes to help school chefs prepare delicious plant-based meals that meet USDA nutrition requirements.<sup>14</sup>

Resources for Creating Climate-Conscious Menu Options	
◆	<a href="#">Meatless Mondays K-12 toolkit</a> and <a href="#">school food recipe book</a>
◆	<a href="#">Bring Food Forward</a>
◆	<a href="#">Menus of Change</a>
◆	<a href="#">Lean and Green Kids</a>
◆	<a href="#">Coalition for Healthy School Food</a>

**Carbon Footprint of Different Menu Options<sup>38</sup>**



Source: Friends of the Earth recipe analysis using Heller, M. C. and Keoleian, G. A. (2014)

## USDA and Food Service Companies Should Increase Plant-based Food Offerings

In order to make low-carbon foods more affordable and accessible for public schools, large distributors and food service companies must develop more protein-rich, plant-based products, as well as those that contain less meat overall (like blended mushroom-beef burgers and beef-bean chili). In addition, the US Department of Agriculture should offer more of these foods, expand its successful Department of Defense Fresh Program and allow high protein grains, such as quinoa and amaranth, to count toward the protein requirement.<sup>15</sup>

## The Climate Community Must Recognize Meat and Dairy Reduction as a Climate Mitigation Strategy

In the US, cities and states are leading the way on climate mitigation. Yet shifting institutional food purchasing has rarely been tapped as a climate mitigation strategy. We hope this report inspires more public institutions to serve less and better meat and more plant-based foods as a cost-effective way to achieve environmental and public health goals. Unlike costly and complex mitigation methods—like building renewable energy capacity—reducing demand for resource-intensive animal foods is a relatively simple, cost-neutral or cost-saving strategy. Furthermore, conventional climate mitigation measures will ultimately be ineffective if we don't dramatically reduce meat and dairy consumption.

If every California K-12 school food service accomplished a carbon footprint reduction similar to that of Oakland Unified School District, it would amount to reducing roughly 80 million kg of CO2 emissions, equivalent to eliminating the emissions from 17,000 cars that drive almost 200 million miles per year. If every school district in the nation took similar action, the GHG reductions would be akin to driving nearly 1.6 billion fewer miles or taking 150,000 cars off the road every year.

## Growing Momentum

Oakland Unified School District's success lends momentum to a growing movement among schools and colleges across the US. Hundreds of school districts nationwide have adopted Meatless Mondays, and a growing number of sustainable food procurement standards like the Good Food Purchasing Program are emphasizing the importance of reducing animal foods.<sup>16</sup> Furthermore, OUSD's participation in the California Thursdays® program has shown how serving local and regional plant-based foods and less and better meat can be both cost-effective and environmentally beneficial.<sup>17</sup>

We hope this powerful story of Oakland Unified School District inspires more school districts and other institutions across California and the nation to follow suit. Through the food it serves, schools have the unique ability to shape healthy and sustainable diets for the benefit of current and future generations. When it is possible to reduce environmental harm, improve consumption of healthy food and save money, all while increasing student satisfaction and meeting federal school meal requirements, what are we waiting for?

### FOOD SHIFTS MATTER

Over 2 years, Oakland Unified School District reshaped its menu with fewer animal foods and more protein-rich legumes and vegetables. This shift generated considerable **water** and **climate** benefits, and **cost savings**:

