



A Healthier Recreation Concession Pilot Project Evaluation

Township of Zorra

Evaluation Report
Oxford County Public Health
August 2016

About Oxford County

Located in the heart of southwestern Ontario, Oxford County has a population of approximately 111,700 people across eight municipalities that are “growing stronger together” through a partnership-oriented, two-tier municipal government incorporated as the County of Oxford.

Oxford County is emerging as a leader in sustainable growth through the [Future Oxford Community Sustainability Plan](#) and County Council’s commitment to achieving [100% renewable energy](#) by 2050 and becoming a [zero waste](#) community. Situated in one of Ontario’s richest areas for farmland, agriculture forms a cornerstone of the County’s economy, which boasts 55,000 jobs in a rapidly expanding commercial and industrial sector bolstered by its location at the crossroads of Highways 401 and 403. The County offers a thriving local arts, culture and culinary community, as well as conservation parks, natural areas and more than 100 kilometres of scenic trails.

The Oxford County Administration Building is located in Woodstock. Visit www.oxfordcounty.ca or follow our social media sites at www.oxfordcounty.ca/social. Oxford County’s Strategic Plan is at www.oxfordcounty.ca/strategicplan.

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Summary

Recreational spaces are key community settings that can promote healthy food provision while simultaneously supporting physical activity, community cohesiveness and healthy living. This report documents efforts that go far beyond educating patrons about healthy eating to creating supportive environments that make it easier for patrons to make healthier food and beverage choices.

Financial loss and potential food waste are two commonly identified barriers to the introduction of healthy food choices in many recreation facilities. This collaborative pilot project with two rural recreation facilities in the Township of Zorra documents the complex mix of factors that impact adoption and implementation of healthy food choices in many recreation facilities and sets the stage for monitoring future improvements.

Each of the participating recreation facilities experienced difficulties in implementing the changes as intended in the first year. Overall, a financial loss was incurred; however, it is not possible to determine if this was a decline from the previous year, if this was due to the implementation of the project, or if this is a usual event at either recreation facility. Using 2016 results as a baseline, Public Health recommends that Zorra strengthen implementation efforts in 2017 to apply the intended multi-component approach and determine if sales of healthier foods can be improved and financial loss can be curbed as was demonstrated elsewhere within Oxford County. A more feasible healthier food environment can be achieved by:

- strategic product purchasing and menu planning to increase availability of healthy food and beverages
- decreasing availability of traditional (i.e., unhealthy) food and beverages
- ensuring competitive pricing of healthier food and beverages and
- effectively using product placement and promotional strategies.

Continued conversation among recreation leaders throughout Oxford County is encouraged to build supportive communities where the healthy choice is the easy choice within recreation facilities.

A Healthier Recreation Concession Pilot Project Evaluation

Background and Rationale

The two major health behaviours that are most important to families in Oxford County including the Township of Zorra (Zorra) are healthy eating and active living.¹ In its efforts to assist decision makers and service providers to meet the current and future needs of the Township, the Zorra Strategic Plan² acknowledges the need to establish a sustainable and healthy community.

Creating healthy recreation food environments is a focus of Oxford County Public Health & Emergency Services (Public Health) to improve healthy eating behaviours among residents. Mandated nutrition standards exist within child care and school settings in Ontario to promote healthy eating; however, there are no standards for food environments in a number of other public community spaces such as recreation facilities. Having mandated nutrition standards helps ensure that the food and beverages sold meet the nutritional requirements that contribute to healthy growth and development, and the prevention of diet-related chronic diseases.

Food environments include the physical, social, economic, cultural, and political factors that impact the accessibility, availability and adequacy of food within a community or region.³ The Ontario Public Health Standards,⁴ Healthy Kids Strategy Report,⁵ the Ontario Society for Nutrition Professionals in Public Health,⁶ Nutrition Resource Centre⁷ and the Dietitians of Canada⁸ identify and support recreation spaces as a key setting to target for the continued promotion of healthy eating and increased access to healthy food and beverages.

Recreation facilities are a gathering place and community hub for people of all ages. They are key community settings that can promote healthy food provision as they aim to support physical activity, community cohesiveness and healthy living. These facilities are also considered a consumer food environment, characterized by availability, price, variety and quality of food along with on-site promotions and marketing.³ After the conclusion of the provincial *Eat Smart! Awards of Excellence* program in 2009 targeting healthier recreation food provision, public

health agencies began to plan similar efforts at the local and regional level to create healthier food environments in recreational facilities.⁹

All elements of food procurement need to be considered when improving recreation food environments, including food and beverage sales (vending machines, canteens/concessions, restaurants, catering), meetings, recreation programs, fundraising and advertising on site.¹⁰ This work goes beyond educating patrons about healthy eating, to actually making it easier for patrons to make healthier food and beverage choices.¹⁰

Healthier Recreation Concession Pilot Project

To improve healthy eating behaviours among residents, Public Health sought to address the food environment at local recreational facilities. The objective of this pilot project was to introduce, promote and evaluate healthier food and beverage sales at local recreation facilities in Oxford County. Our long term goal is to normalize consumption of nutrient dense food and beverage within public recreation spaces, and work towards the implementation of a municipal policy that enforces standards for food environments in recreational facilities.

In 2014, planning was undertaken for a pilot project to assess the feasibility and potential for effectiveness of changing menus at local recreation centres. Figure 1 demonstrates the timeline and preliminary work leading up to pilot project initiation in Oxford County.

Figure 1: Planning and project timeline



The first step was to conduct a Healthy Lifestyles phone survey of local residents with the help of EKOS Research Associates. The results of this survey confirmed that the public may be

supportive of changing the food environment at recreational facilities and provided suggestions for potential concession menu changes. Next, a community consultation was held with parents, youth, municipal operators, recreation managers and directors to gather detailed opinions about how to improve food provision in recreation facilities.

In early 2015, Public Health launched a Food & Sports webpage, www.oxfordcounty.ca/foodandsports, written by a Registered Dietitian to provide a credible medium for population-wide nutrition education. Staff then launched a complementary **Food for Thought** poster campaign to continue the conversation around fueling the body optimally for physical activity. The purpose of the campaign was to educate patrons about the disconnect that existed between physical activity and food and beverage options within the recreational setting. Posters were displayed at county-wide recreation sites as part of this campaign in early 2015.

In the spring of 2015, Public Health facilitated separate stakeholder focus groups for municipal operators, recreation associations (parents and volunteers) and site users (patrons) to assess readiness and potential barriers with regards to working together to improve food environments in recreational facilities.¹¹ Additional outreach included presenting a pilot project proposal (e.g., promotional materials, in-kind contributions and supplies from Public Health) to interested stakeholders as a follow-up to the focus groups. One municipal council, one community-based recreation advisory committee and one-to-two recreation contacts from each municipality were contacted at this time from those who expressed interest.

Feedback collected from stakeholders demonstrated some hesitation toward the initiative. Specifically, they feared that healthier items would not sell because of low consumer demand, which would then cause high levels of food waste and increased financial loss due to perishability of healthy food options. Some stakeholders also noted that the amount of work required to initiate healthy changes would be too much of a burden for many recreation facilities.¹¹ It was also identified that concessions are often viewed as a non-essential business for many municipalities. Specifically, it was noted that small concession operations do not generate enough revenue to provide funding for other municipal services or recreation core programming. Based on this feedback, it was proposed that those operators offering a concession as a customer service for the public, work with Public Health to ensure that the mix of available food and beverages promote healthier eating behaviours. Two townships, Zorra and

Blandford-Blenheim participated in implementation and evaluation pilots in their respective recreation facilities.

This report documents the collaborative pilot project that took place at one rural arena (Thamesford) and one community centre (Embro) from September 2015 to March 2016. Zorra and Public Health worked together to launch and promote a healthier menu at both facilities. Strategies used to establish a healthier food environment at these sites included increasing the availability of healthy food and beverages, decreasing the availability of traditional (i.e., unhealthy) food and beverages, competitive pricing, product placement and promotional strategies. Throughout the pilot period, sales and costs for food and beverage items were monitored to determine the popularity of menu items.

Just prior to the pilot implementation period, Zorra had also decided to add healthier options to their vending machines. In 2016, the Township removed all candy machines from the recreation centre foyers following advocacy efforts put forward by public health staff to the Zorra Recreation Advisory Committee. Public Health reached out to this committee during the pilot's preliminary planning phase. This change was made during the pilot period, independent of the concession pilot project, to further improve the recreation food environment in Zorra.

Menu Development and Project Initiation Process

Preliminary meetings between two representatives from Public Health (a Registered Dietitian and a Public Health Nurse) and the site operator were held to discuss the menu, food and beverage suppliers, purchasing processes and deadlines. Primary considerations for menu changes included increasing nutrient density of products, product costs and limiting risk for food waste (e.g., focusing on non-perishable and freezer items when possible due to small concession business operations). For example, shelf stable milk (of equal nutritional value to perishable milk) was one product suggested as a means to mitigate potential perishability losses due to low product turnover within the concession. Though the Registered Dietitian provided suggestions about menu pricing, additional supply needs and product type and quantity, the operator had ultimate authority over these decisions.

The pilot menu for both concessions introduced new healthy food and beverages (same items for both concessions), increased the nutrient density of some of the prior menu items and maintained some of the traditional menu items.

Public Health was unable to incorporate into the pilot evaluation a comparison of the 2015/16 concession sales to the previous seasons in Zorra, as Zorra had previously used a third party for concession operations and 2014/15 sales data was unavailable. In 2015/16, a great deal of change occurred in the way that the concession facilities were managed; the Township of Zorra decided to move away from a third party concession operation and back to an in-house, municipally run concession operation. It may also be important to note that since pilot implementation, Zorra has hired a dedicated recreation and facilities program coordinator responsible for concession operations in addition to other duties which may also aid in future implementation efforts. .

The internal operation model used for this pilot required the municipality to reconnect with a past food supplier or activate a new service account with a new supplier. The previous food supplier was no longer operating; therefore, the municipality sought to create a new account with a local supplier (Sysco) to support the concession. After holding discussions with their sales representative, the Registered Dietitian determined their products met the needs of the healthier recreation concession pilot project and subsequently encouraged the operator to move forward with setting up the new account.

A number of data sources were considered during the menu development process. Those included were: successful healthy menu items currently being sold in recreation facilities in other Ontario regions (when evaluation reports were available), Ontario Student Nutrition Program guidelines,¹² Ontario's School Food and Beverage Policy,¹³ and a specific focus on healthy food and beverage suggestions from our Oxford County residents' phone survey.¹¹ As per Registered Dietitian guidance and professional opinion, product brands under consideration were analyzed for key nutrients of interest. Improvements included lower fat, sodium, and sugar contents and/or products with increased fibre; protein and calcium contents; and overall macronutrient (carbohydrate, protein and fat) distribution considerations. These products were then categorized as healthy or traditional (unhealthy) items for evaluation purposes.

A range of nutritional factors are considered when making improvements to food provision in any environment. Categorizing a food as healthy versus unhealthy is not simple. Figure 2 represents an interpretation of the range from traditional menu items (low nutrient density) commonly sold in recreation settings in Ontario, to the gold standards of nutrition (high nutrient density). Any step towards the right on the arrow can be viewed as a positive shift toward increased nutrient density. For example, regular potato chips were replaced with Baked Lay's

chips which provide lower fat and lower sodium content per serving than regular chips and representing a shift from a traditional to a healthier option on the nutrient quality spectrum (see Figure 2). It should be noted that, although the nutrient densities of some menu items were improved (i.e., from “traditional” to “healthier” on the spectrum), for the purposes of this evaluation, items were classified into two categories based on best overall nutritional fit at the discretion of the Registered Dietitian: healthy (“traditional” and “healthier” on the spectrum) and unhealthy (“healthy” and “healthiest” on the spectrum). For a detailed description of product specifications, see Appendix A.

Figure 2: Recreation food and beverage nutrient quality spectrum



After menu item suggestions were categorized nutritionally, the food supplier was contacted by the Registered Dietitian to check product brand availability. An approximate cost analysis and final suggested product list was provided to the operator to approve. Once cost estimates were approved by the operator, a phone meeting was arranged with the sales representative from the food supplier to complete the final purchase order for new menu initiation.

Menu price suggestions were made based on the previous year’s concession menu prices and other local recreation concession menu prices. Competitive pricing was used to further promote the sale of the healthier menu items. Prices were increased by \$0.25 to \$0.75 cents for unhealthy menu items and prices were reduced slightly (while still set to profit) for healthy menu items. This was done to ensure that healthier options were more affordable than the unhealthy options in accordance with suggested literature and best practices.^{3,14-22}

Once the order was delivered, product placement was also considered during concession set-up. Healthy options were placed in more visible areas. For example, healthy options at the height of an adult’s eye level within the front of the fridge and healthy snacks items were placed on most visible kiosk shelves in accordance with best practices.^{15-17,19,23} Menu board signage

was updated to include new menu items, and smoothie cup sleeves were posted in visible locations near the blenders to promote the new smoothie options.

However, a number of uncertainties occurred during the pilot period that challenged implementation fidelity. For example, anecdotal evidence indicates that the products may not have remained in the preferred locations for the full pilot period. Additionally, the concession staff responsible for organizing the incoming product varied after the initial set-up date and new staff may not have understood the importance of healthy product placement as a key component of pilot implementation. As a result, Public Health cannot conclude that healthy product placement remained consistent throughout the pilot period. It should also be noted that other food suppliers contacted the operator prior to Public Health's engagement with the primary supplier. Consequently, the operator made some unhealthy purchases that were ultimately included on the new menu at both concessions.

Pilot Project Evaluation

The purpose of this pilot was to provide an opportunity to introduce, promote and evaluate healthy food and beverage sales and uptake within recreation facilities. As sales data was only available for the 2015/16 season, it was not possible to assess if the healthier recreation concession menu achieved the same level of overall sales as the traditional menus offered in previous seasons at either Zorra facility. Therefore, the questions we sought to answer included:

- What sales were achieved at the concessions after the introduction of the new menu items?
- What recommendations can be proposed to further increase the purchasing of healthy food and beverages items in recreation settings?

Methods

Employees used a sales tally sheet to tabulate items sold at each concession. The tally sheet included space to fill out information about the location of the concession, as well as the date and number of hours either concession was open. Food and beverage items were listed on the

left side of the tally sheet and staff recorded the number of sales units sold for each item on the right side of the sheet.

Tally sheets were modified after a review of the initial trial period revealed that items such as sports drinks were being tallied under the cola section of the sheet. Therefore, results for cola are likely overestimated, while results for sports drinks are likely underestimated.

The concession operator provided Public Health with the completed tally sheets and expense invoices for each concession on a monthly basis. It was important to collect expense data from each concession so that the operator could gain a better understanding of the profitability of the different items.

Sales and expense information were entered and tracked in separate custom tabulated Excel databases (e.g., sales database and expense database). In total, four databases were created to account for the two Zorra facilities participating in this pilot. The sales database tracked daily sales (by units and dollars) for each menu item, with different tabs representing the various months in which the pilot operated. An additional tab tracked the total number of menu items sold (by units and dollars) for each month of the pilot, and tracked menu items sold (by units and dollars sold) for the various classifications of interest (e.g., healthy items, unhealthy items, miscellaneous).

The expense database tracked each menu item that was purchased, with each tab representing the various months in which the pilot operated. Other information that was tracked in the database also included the total amount of orders and the total number of units purchased for each item.

In addition to tracking sales and expense data, Public Health originally planned to evaluate marketing and promotional efforts (staff t-shirts, cup sleeves and posters) used throughout the pilot to determine their impact on increasing healthy food purchasing or consumption at the concessions. However, due to logistic issues encountered with these efforts, it was later decided not to evaluate these methods during this particular pilot period.

Results

This section highlights sales and expense data tabulated in the Excel databases discussed above. Results are categorized under the following headings: Embro, Thamesford, Unknown and Total. The Unknown category represents sales tally sheets that were completed without an arena classification.

Total Summary

As depicted in Table 1, the Embro site had higher overall sales than the Thamesford site. Yet, the Thamesford site incurred higher food and beverage costs in comparison to the Embro site. Individually, the Embro site operated in a positive gross profit, whereas the Thamesford site operated in a negative gross profit (i.e., total food and beverage costs were higher than total sales). In total, the two combined arenas operated at a negative gross profit. Negative gross profit is not unusual at recreation concession stands,¹¹ however, as no data is available for previous years, it is not possible to assess if the negative gross profit was unique to this implementation year or an indicator of a decline in sales.

Table 1. Summary of concession sales, food and beverage costs and gross profits, 2015/16

	Embro (\$)	Thamesford (\$)	Unknown (\$)	Total (\$)
Sales	5,228.50	4,281.75	355.75	9,866.00
Food and beverage costs	4,453.08	7,022.65	N/A	11,475.73
Gross profit	775.42	(2,740.90)	N/A	(1609.73)

Monthly Summary

Figure 1 provides a monthly breakdown of sales for the two arenas. The months with the highest sales for both concessions combined and individually were December and January. The sum of the sales for both arenas (combination of figures from Unknown sales and both arenas) at the end of the pilot was nearly \$10,000.

Figure 2 shows a summary of food and beverage costs for both concessions individually and combined. The concession at the Thamesford site incurred its highest food and beverage costs in November and January, while the concession at the Embro site incurred its highest food and beverage costs in December and January. The sum of the food and beverage costs for both concessions at the end of the pilot was nearly \$11,500. For a detailed description of sales, and food and beverage costs for both concessions, see Appendix B and Appendix C.

Figure 1. Monthly sales summary, 2015/16

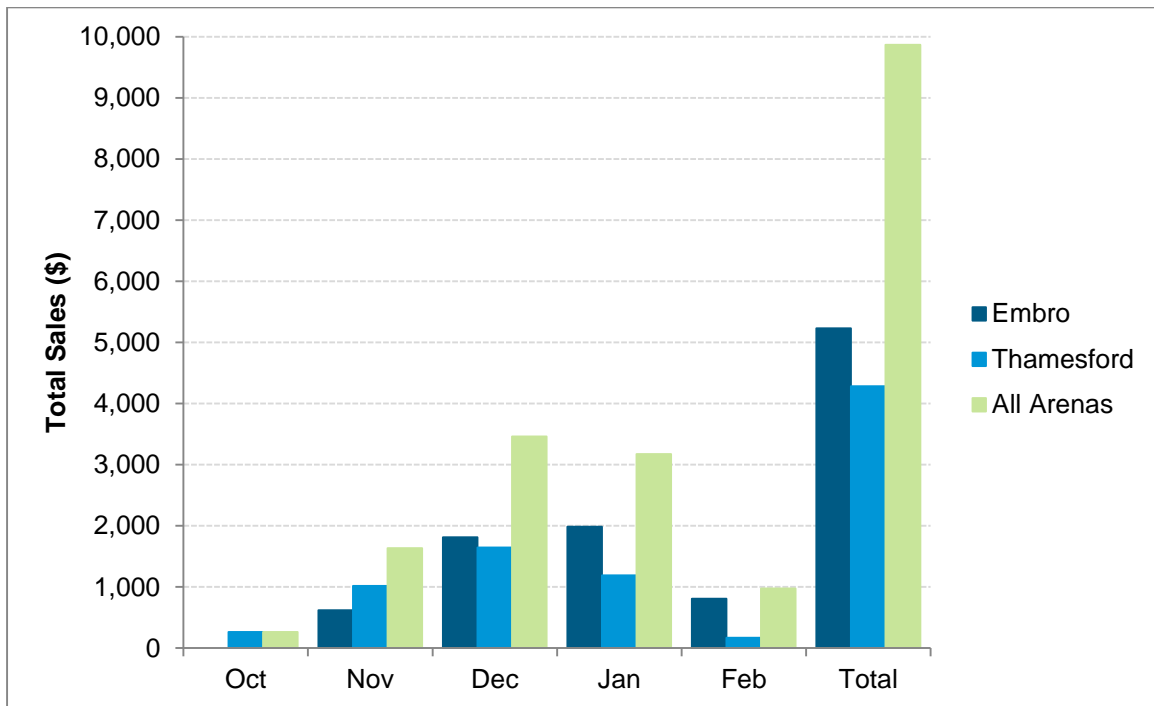
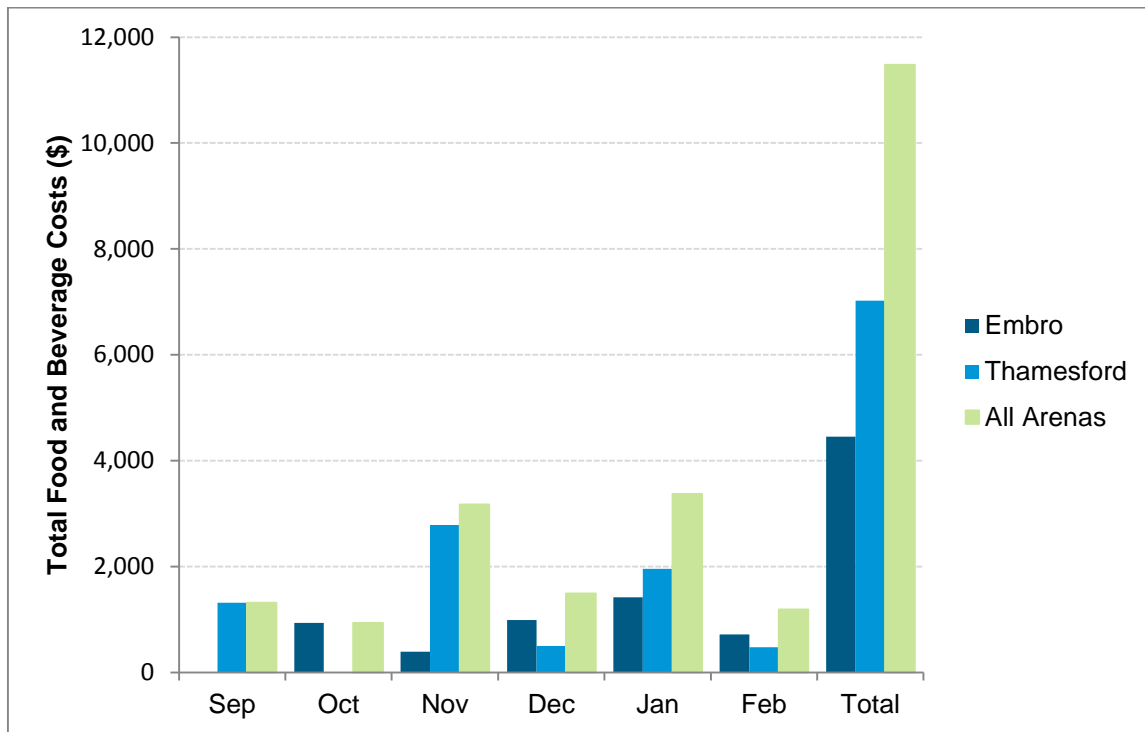


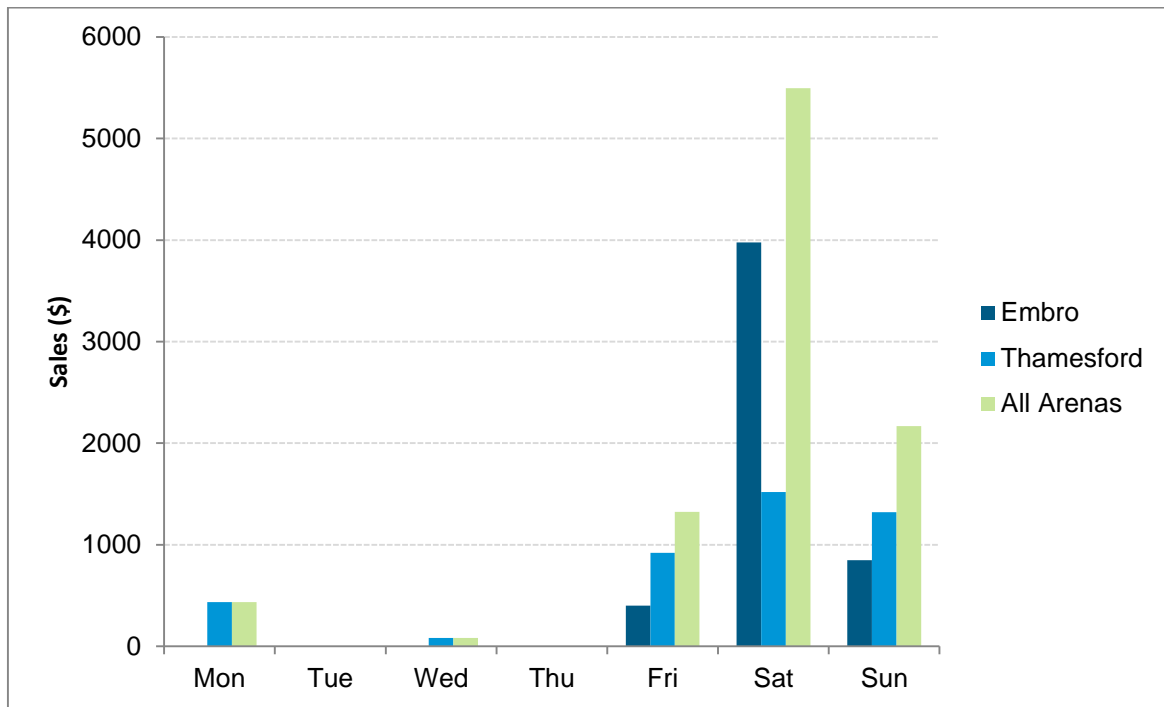
Figure 2. Monthly food and beverage costs summary, 2015/16



Daily Summary

As depicted in Figure 3, both concessions did not operate on Tuesdays and Thursdays, while only Thamesford operated on Mondays and Wednesdays. Saturdays had the highest sales for both Embro and Thamesford and accounted for nearly \$5,500 in sales when figures for both concessions were combined. Conversely, of the days in which the concessions were open, Wednesdays and Fridays were the days with the lowest gross sales for Thamesford and Embro respectively. For a detailed description of daily concession sales totals and averages, see Appendix D and Appendix E.

Figure 3. Daily sales totals, 2015/16



Sales Summary: Food and Beverage Classifications and Sales in Units

The following tables highlight the total units sold by their particular food and beverage classification (i.e., healthy units, unhealthy units and miscellaneous). An additional table also highlights unit sales for the different smoothie flavours that were available during the pilot. Note, items followed by a number in the items column indicate the number of different products (i.e., flavours or varieties) that fell under that particular item on the tally sheet.

Table 2 shows the unit sales for each concession. The healthy items with the most unit sales included water, juice, chocolate milk and smoothies. In contrast, the healthy items with the least unit sales were cheese, yogurt and white milk.

Table 2. Healthy unit sales summary, 2015/16

Items	Embryo	Thamesford	All Arenas
Water	82	59	141
Juice (2 items)	41	39	80
Chocolate Milk	55	22	77
Smoothies (3 items)	13	37	50
Strawberry Milk	16	17	33
Granola Bars	12	12	24
Cheese	4	5	9
Yogurt	4	3	7
White Milk	2	3	5

Table 3 displays smoothie sales by flavour for each concession. The berry bliss flavour sold the most units and the chocolate banana-flavoured smoothie sold the fewest units.

Table 3. Smoothies unit sales summary, 2015/16

Smoothie flavour	Embryo	Thamesford	All Arenas
Berry Bliss	13	16	29
Orange Mango	6	14	20
Chocolate Banana	3	7	10

Table 4 shows the unhealthy items with the most and least unit sales for each concession. The items with the most unit sales included fries, colas and chocolate bars. In contrast, the unhealthy items with the least unit sales were sport drinks, baked chips and deep fried pickles.

Table 4. Unhealthy unit sales summary, 2015/16

Items	Embro	Thamesford	All Arenas
Fries	455	436	891
Colas (7 items)	330	195	525
Chocolate Bars (3 items)	187	129	316
Hot Dogs	94	136	230
Candy	122	6	128
Onion Rings	60	54	114
Sport drinks (3 items)	45	58	103
Baked Chips (3 items)	55	43	98
Deep Fried Pickles	29	30	59

As mentioned above, the tally for sports drinks are likely underestimated and the tally for colas are likely overestimated given that sport drinks were tallied as colas at the beginning of the pilot.

Table 5 shows miscellaneous items that were sold at the concession. The majority of these unit sales were for hot beverages, whereas gum and Halls had the least amount of unit sales.

Table 5. Miscellaneous unit sales summary, 2015/16

Items	Embro	Thamesford	All Arenas
Hot Beverages* † (3 items)	638	466	1104
Gum	18	13	31
Halls	8	10	18

Notes:

* One size only

† Included tea, coffee and hot chocolate for Thamesford and coffee and hot chocolate for Embro

Sales Summary: Food and Beverage Classifications and Sales in Dollars

The following tables highlight item sales, in dollars, and by their particular food and beverage classification (e.g., healthy, unhealthy, miscellaneous). An additional table also highlights smoothie sales, in dollars, for each of the different flavours that were available during the pilot.

Table 6 shows the healthy items with the most and least sales according to dollars sold. The healthy items with the most sales included smoothies, water and chocolate milk. In contrast, the healthy items with the least sales were granola bars, white milk and cheese.

Table 6. Healthy item sales summary, in dollars, 2015/16

Items	Embro (\$)	Thamesford (\$)	All Arenas (\$)
Smoothies (3 items)	60.50	101.75	162.25
Water	82.00	59.00	141.00
Chocolate Milk	96.25	38.50	134.75
Juice (2 items)	70.00	39.00	109.00
Strawberry Milk	28.00	29.75	57.75
Yogurt	15.00	11.25	26.25
Granola Bars	12.00	12.00	24.00
White Milk	3.50	5.25	8.75
Cheese	3.00	3.75	6.75

Table 7 highlights smoothie sales by flavour. The berry bliss smoothie was the highest grossing smoothie, followed by the orange mango and chocolate banana smoothies, respectively.

Table 7. Smoothie sales summary, in dollars, 2015/16

Items	Embro (\$)	Thamesford (\$)	All Arenas (\$)
Berry Bliss	36.75	44.00	79.75
Orange Mango	16.50	38.50	55.00
Chocolate Banana	8.25	19.25	27.50

Table 8 summarizes unhealthy items sold. As shown below, fries, colas, hot dogs and chocolate bars consisted of the most popular items sold. In contrast, the unhealthy items with the least sales were candy, deep fried pickles and baked chips.

Table 8. Unhealthy item sales summary, in dollars, 2015/16

Items	Embro (\$)	Thamesford (\$)	All Arenas (\$)
Fries	1,706.30	1,635.00	3,341.25
Colas (7 items)	742.50	434.25	1,176.75
Hot Dogs	258.50	374.00	632.50
Chocolate Bars (3 items)	374.00	258.00	632.00
Onion Rings	225.00	202.50	427.50
Sport Drinks (3 items)	123.75	159.50	283.25
Candy	244.00	12.00	256.00
Deep Dried Pickles	108.75	112.50	221.25
Baked Chips	68.75	53.75	122.50

As shown in Table 9, hot beverages accounted for the majority of the sales in the miscellaneous category; gum and Halls (cough drops) provided the concession with a small portion of added sales (10%).

Table 9. Miscellaneous item sales summary, in dollars, 2015/16

Items	Embro (\$)	Thamesford (\$)	All Arenas (\$)
Hot Beverages*†(3 items)	957.00	699.00	1656.00
Gum	36.00	26.00	62.00
Halls	12.00	15.00	27.00

Notes:

* One size only

† Included tea, coffee and hot chocolate for Thamesford and coffee and hot chocolate for Embro

Discussion

The results from the introduction of healthier recreational concession menus at both the Embro and Thamesford recreation facilities showed that there was an interest in the consumption of healthy menu items. Given that this was the first introduction of healthier menu items at either site, challenges during this pilot were expected. A complex mix of factors affected the adoption and implementation of healthy food choices in the recreation facilities and the quality of available sales data affected Public Health’s ability to fully evaluate the implementation of the pilot. However, regardless of the limitations of this project, it is anticipated that the documentation of the results will help set the stage for future implementation and monitoring efforts geared towards creating healthier food environments in recreation facilities in Zorra.

The evaluation results indicated that unhealthy menu items at both arenas resulted in the majority of sales. This was influenced by a number of factors. For example, as part of the plan to deter patrons from purchasing unhealthy food choices, the price of unhealthy food and beverage items were increased prior to the start of the pilot; thus, possibly explaining why unhealthy items showed higher overall revenues, in dollars, than healthy items (Table 10). Sales of healthy menu items at either site may also have been affected by the purchase of unhealthy menu items prior to pilot implementation. These purchase errors contributed to unnecessary healthy food and beverage costs and delays in healthy food availability at the concessions. In addition, the lack of on-site promotional efforts to encourage purchasing of the new healthy foods may have contributed to the results.

Table 10. Top 12 Item Sales, in dollars, 2015/16

Items	Category	Sales (\$)
Fries	Unhealthy	3341.25
Hot Beverages*† (3 items)	Miscellaneous	1656.00
Colas (7 items)	Unhealthy	1176.75
Hot Dogs	Unhealthy	632.50
Chocolate Bars (3 items)	Unhealthy	632.00
Onion Rings	Unhealthy	427.50
Sport Drinks (3 items)	Unhealthy	283.25
Candy	Unhealthy	256.00
Deep Fried Pickles	Unhealthy	221.25
Smoothies (3 items)	Healthy	162.25
Water	Healthy	141.00
Chocolate Milk	Healthy	134.75

Notes:

* One size only

† Included tea, coffee and hot chocolate for Thamesford and coffee and hot chocolate for Embro

See Appendix F for total sales summary

Additional limitations hindered Public Health's ability to obtain accurate sales data for each pilot site. One such limitation included the use of the tally tracking system. This method of tracking was incomplete during this pilot, as some important information regarding dates, times and locations were not recorded. As a result, Public health was unable to accurately identify most popular sales days and months or determine exact profits for particular items at each site. Another valuable piece of information that was not collected for this pilot was labour cost estimations. This information would have been useful to determine overall net profits.

Public Health identified requirements to improve the rigor of the implementation and evaluation processes to enhance the future success of this type of project. The evaluation could be improved by implementing an electronic Point of Sale (PoS) system for data collection (i.e., date of sale, menu item and price information per unit sold) purposes. The implementation and success of the pilot could be improved by increasing promotional efforts (ensuring staff T-shirts

are worn daily, marketing materials are visible and on-site activities are launched) and providing on-going purchasing support to help minimize risk of food waste and ensuring the timely organization of sales invoice data to aid in mitigating the aforementioned limitations.

Public Health also reviewed the research literature to determine the most effective strategies to continue to promote healthy food purchasing in recreation settings, findings suggest using a multi-component approach that involves changes to the consumer food environment.^{3,5,15,16,19,24,25} As such, recommendations to further increase the purchasing of healthy food and beverage items in recreation settings include:

- strategic menu changes and pricing in favour of promoting healthy options,
- strategic promotional activities,
- streamlining operational expenses, and
- engaging key stakeholders and advocating for policy changes.

Strategic Menu Changes and Pricing

The literature supports increasing availability and variety of healthy options within recreation settings as a useful strategy to increase the purchase of healthy food.^{5,14-16,17,19,20,22,23,26} When items are perishable, we recommend ordering one variety or flavour of a healthy product at a time and continuing to consider non-perishable healthy options when possible. Engaging with a Registered Dietitian during initial planning can be helpful when assessing the nutritional quality of menu items to determine which healthy options should be introduced. Scientific literature recommends decreasing the availability of unhealthy food and beverage items as another effective environmental strategy to decrease unhealthy food and beverage purchases within recreation settings.^{14,25} The Registered Dietitian can also make suggestions to further improve the nutritional quality of existing menu items.

There is vast scientific evidence to support the use of competitive pricing strategies to help curb purchasing toward healthy food and beverages in a variety of settings.^{3,14-17,19-22,28} It is recommended that pricing shifts continue to be evaluated in the future to determine if there is a certain threshold pricing that elicits positive purchasing behaviour change which would favour increasing healthy food sales and/or decreasing unhealthy food sales.

Strategic Promotional Activities

Product placement is an effective strategy to promote healthy food and beverage purchasing in recreation facilities and other community settings.^{16,20-23,28} As part of a multi-component intervention to further encourage healthy choice selection, Public Health recommends the continued use of strategic product placement to ensure healthy menu choices are more visible than less nutrient dense options.

Part of the consumer food environment within recreation settings and other community spaces includes information provided to the consumer. These may occur through promotional signage and general prominence of healthy versus unhealthy options on site.^{3,24} Using promotional materials and marketing supports such as posters, brochures, electronically sent messages, point of purchase nutrition information and other signage on-site has been shown to have some positive impact on increasing the purchase of healthy food and beverages.^{5,14-18,23,26,29} We were unable to evaluate the three marketing-related promotional supports (staff t-shirts, cup sleeves and posters) for their impact on increasing healthy food purchasing or consumption on site during this pilot project. In the future, it would be beneficial to evaluate these marketing efforts to identify successes and any promotional areas needing improvement for future project implementation.

Busy sales months should be targeted along with special event dates in order to deliver further promotional activities on site. Despite some inconsistencies with the recording of dates and times on the tally sheets, it was determined that Saturdays were the busiest sales day, while December and January were the busiest sales months during the pilot. Research supports promotional and awareness raising activities when part of a multi-component intervention and broader environmental changes are more effective than providing one-time promotional or educational activities.^{15,16,19,25}

Streamline Operational Expenses

It is recommended that the Embro and Thamesford concessions review the overall weekly sales patterns to select days in which sales do not surpass operating expenses and determine if it is feasible to close the concession in order to conserve labour costs. If the majority of menu items

remain non-perishable and/or freezer stored, the fewer days of operation will not likely impact sales as compared to higher losses from labour costs.

Understanding profit margins is an important component to streamlining operational expenses. During this pilot, it was difficult to ascertain individual item profits for each site because of the inconsistencies with the tally tracking method. To obtain a clearer picture of profitable items, it would be helpful to have a tracking system that would detail item profits for each individual item on the menu.

Engaging Key Stakeholders and Advocating for Policy Change

Beginning to normalize healthy food and beverage consumption in recreation settings is part of a long-term strategy to increase healthy food access and create more supportive food environments in public community spaces. It is well documented that policy and environmental changes that incorporate health promotion strategies to increase healthy eating practices at the population level within schools, workplaces and other institutions.^{3,16,19,24,25,27} In order to continue to make sustainable strides with healthy eating initiatives within the recreation sector it is necessary to continue working with relevant stakeholders (e.g. public health, government, food and recreation industry, planners, private, public and volunteer/community members).^{3,16,17,19} Demonstrating commitment to working with local public health agencies to implement healthier changes in the recreation setting through immediate action, advocacy and voluntary municipal policy is recommended to encourage sustainable change in communities.

Conclusion

Making healthy food and beverages more available in our community is a long-term strategy to increase healthy food consumption. This project is an example of a positive first step in beginning this shift in the Township of Zorra, Oxford County.

Predicted financial loss and potential food waste are two common barriers to introducing healthy choices in many recreation facilities. This pilot project confirmed that financial loss or break even revenue is not an uncommon finding for traditional recreation concession operations in

Oxford County. However, it is not possible to assess if the financial loss was a decline from previous years and a result of the pilot project implementation. Many units of healthy menu items did sell well during the pilot season in comparison to previous years of operation when no healthy food and beverage options were available on site.

Several strategies may be helpful in promoting healthy food and beverage uptake within this type of recreation setting in the future. These include increasing the availability of healthy options, decreasing the availability of unhealthy options, promotional materials and events, competitive pricing, product placement, strategic product purchasing and menu planning. Future work should consider tracking item profits to help better streamline operational expenses.

Other local municipalities are engaging with Public Health (e.g., Blandford-Blenheim, City of Woodstock) to discuss making similar changes to their recreational concessions and Public Health is considering the feasibility of developing a toolkit that supports the implementation of healthier foods and beverages in local recreation facilities. Public Health looks forward to continuing the conversation and momentum with recreation leadership county-wide to build more supportive food environments for Oxford County residents.

References

1. Bocking K, Jalon O, MacCausland I. Healthy communities Oxford: community picture report 2011. Woodstock: ON; 2011 [cited 2016 July 18]. Available from:
<http://www.oxfordcounty.ca/Portals/15/Documents/News%20Room/2012ReportsPubs/HealthCommunities.pdf>
2. Township of Zorra. Strategic plan: 2015-2018. Township of Zorra; 2015 [cited 2016 August 15]. Available from:
<http://www.zorra.on.ca/Portals/8/Documents/Strategic%20Plan/Final%20Strategic%20Plan%20with%20timeframes.pdf>
3. Rideout K, Mah C L, Minaker L. Food environments: an introduction for public health practice. Vancouver, BC; 2015: National Collaborating Centre for Environmental Health. Available from
http://www.ncceh.ca/sites/default/files/Food_Environments_Public_Health_Practice_Dec_2015.pdf
4. Ontario. Ministry of Health and Long-Term Care. Ontario public health standards, 2008. Revised May, 2016 [Internet]. Toronto, ON: Queen's Printer for Ontario; 2014 [cited 2016 June 18]. Available from:
http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/ophs_2008.pdf
5. Ontario Healthy Kids Panel. No time to wait: the healthy kids strategy. Toronto, ON: Queen's Printer for Ontario; 2013. Available from:
http://www.health.gov.on.ca/en/common/ministry/publications/reports/healthy_kids/healthy_kids.pdf
6. Ontario Society of Nutrition Professionals in Public Health. OSNPPH strategic plan 2015-2019. Ontario: 2015. Available from:
<http://osnpph.lifeweb.ca/upload/editor/OSNPPH-Strat-Plan-FINAL.pdf>
7. Nutrition Resource Centre. Resources. Toronto, ON. Available from:
<http://opha.on.ca/Nutrition-Resource-Centre/What-We-Do/Resources.aspx>

8. Dietitians of Canada. Taxation and sugar-sweetened beverages: position of Dietitians of Canada. 2016. Available from:
<http://www.dietitians.ca/Downloads/Public/DC-Position-SSBs-and-taxation.aspx>
9. Nutrition Resource Centre. Eat smart! program overview. Toronto, ON: Queen's Printer for Ontario; 2009. Available from:
http://opha.on.ca/Resource-Documents/eatsmart-program-overview_eng-2010.aspx
10. Ontario Society of Nutrition Professionals in Public Health Healthy Eating in Recreation Settings Work Group. Building healthier food environments within recreational spaces. 2016. Available from:
http://www.osnpph.on.ca/upload/membership/document/2016-02/healthy-eating-in-the-recreational-setting-final_1.pdf#upload/membership/document/2016-02/healthy-eating-in-the-recreationalsetting-final_1.pdf
11. Mehak, Kelly and Associates Inc. Approaches to the provision of healthier food options in Oxford County. Toronto, ON: 2015.
12. Ministry of Children and Youth Services. Student nutrition program: nutrition guidelines. Toronto: ON: Queen's Printer for Ontario; 2008. Available from:
http://www.children.gov.on.ca/htdocs/English/documents/schoolsnacksandmeals/nutrition_guidelines_2008.pdf
13. Ministry of Education. School food and beverage policy: quick reference guide. Toronto: ON: Queen's Printer for Ontario; 2010. Available from:
http://www.edu.gov.on.ca/eng/healthyschools/PPM150Quick_Reference_Guide_2010.pdf
14. Grech A, Allman-Farinelli M. A systematic literature review of nutrition interventions in vending machines that encourage consumers to make healthier choices. *Obes Rev.* 2015;16(12):1030-41.
15. Story M, Kaphingst KM, Robinson-O'Brien R, Glanz K. Creating healthy food and eating environments: policy and environmental approaches. *Annu. Rev. Public Health.* 2008;29:253-72.
16. Ministry of Health Promotion. Project in evidence-based primary prevention. Healthy eating, physical activity, and healthy weights guideline for public health in Ontario. Toronto: ON:

Queen's Printer for Ontario; 2013. Available from:

http://www.health.gov.on.ca/en/pro/programs/publichealth/oph_standards/docs/guidance/healthy_eating_physical_activity_healthy_weights_gd.pdf

17. National Institute for Health and Clinical Excellence. Strategy, policy and commissioning for diet. London: NICE; 2016 [cited 2016 July 18]. Available from:

<https://pathways.nice.org.uk/pathways/diet#path=view%3A/pathways/diet/strategy-policy-andcommissioning-for-diet.xml&content=view-index>

18. National Institute for Health and Clinical Excellence. National policy on diet. London: NICE; 2016 [cited 2016 July 18]. Available from:

<https://pathways.nice.org.uk/pathways/diet#path=view%3A/pathways/diet/national-policy-ondiet.xml&content=view-index>

19. National Institute for Health and Clinical Excellence. Obesity: working with local communities. London: NICE; 2016 [cited 2016 July 18]. Available from:

<https://pathways.nice.org.uk/pathways/diet#path=view%3A/pathways/diet/national-policy-ondiet.xml&content=view-index>

20. University of Wisconsin Population Health Institute. County health rankings and roadmaps: healthy vending machine options. Madison: WI; 2015 [cited 2016 July 18]. Available from:

<http://www.countyhealthrankings.org/policies/healthy-vending-machine-options>

21. University of Wisconsin Population Health Institute. County health rankings and roadmaps: competitive pricing for healthy food. Madison: WI; 2015 [cited 2016 July 18]. Available from:

<http://www.countyhealthrankings.org/policies/competitive-pricing-healthy-foods>

22. University of Wisconsin Population Health Institute. Unhealthy snack taxes. Madison: WI; 2016 [cited 2016 July 18]. Available from:

<http://www.countyhealthrankings.org/policies/unhealthy-snack-taxes>

23. Engbers LH, van Poppel MN, Paw MJ, van Mechelen W. Worksite health promotion programs with environmental changes: a systematic review *Am J Prev Med.* 2005;29(1):61-70.

24. Sallis JF, Glanz K. Physical activity and food environments: solutions to the obesity epidemic. *Milbank Q.* 2009;87(1):123-54.

25. National Institute for Health and Clinical Excellence. Dietary interventions and advice for adults. London: NICE; 2016 [cited 2016 July 18]. Available from:
<https://pathways.nice.org.uk/pathways/diet#path=view%3A/pathways/diet/dietaryinterventions-and-advice-foradults.xml&content=view-index>
26. University of Wisconsin Population Health Institute. County health rankings and roadmaps: healthy food in convenience stores. Madison: WI; 2015 [cited 2016 July 18]. Available from:
<http://www.countyhealthrankings.org/policies/healthy-food-convenience-stores>
27. Niebylski ML, Lu T, Campbell NR, Arcand J, Schermel A, Hua D, Yeates KE, Tobe SW, Twohig PA, L'Abbé MR, Liu PP. Healthy food procurement policies and their impact. *Int J Environ Res Public Health*. 2014;11(3):2608-27.
28. University of Wisconsin Population Health Institute. County health rankings and roadmaps: sugar sweetened beverage taxes. Madison: WI; 2016 [cited 2016 July 18]. Available from:
<http://www.countyhealthrankings.org/policies/sugar-sweetened-beverage-taxes>
29. University of Wisconsin Population Health Institute. County health rankings and roadmaps: point-of-purchase prompts for healthy foods. Madison: WI; 2015 [cited 2016 July 18]. Available from:
<http://www.countyhealthrankings.org/policies/point-purchase-prompts-healthy-foods>

Appendix A: Product Specifications

Menu Item	Brand	Varieties / Flavours
Healthy		
Chocolate Milk	Dairyland	1% MF, Milk 2 Go
Cheese	Black Diamond	Mild
Water	Eska, Dasani	N/A
100% Fruit Juice	EverFresh, Dole	Apple, Orange
Smoothies	N/A	Berry , Chocolate Banana, Orange Mango
Hummus	Sabra	Red Pepper
White Milk	Dairyland	1% MF, Milk 2 Go
Strawberry Milk	Dairyland	1% MF, Milk 2 Go
Granola Bars	Kashi	7 Grain with Almond, Chewy Trail Mix
Yogurt Cups	Activia	Vanilla
Unhealthy		
Fries	Sys Rel	N/A
Cola	Coca Cola	Classic, Coke Zero, Diet, Sprite, Ginger Ale, Root Beer, Nestea
Powerade	Coca Cola/Powerade	Fruit Punch, Mixed Berry, Orange
Baked Chips	Lay's	Baked, BBQ Baked, Cheddar Sour Cream
Hot Dogs	JMSHNDR	N/A
Onion Rings	McCain	N/A
Candy*	-	-
Chocolate Bars	Miscellaneous	Mars, Oh Henry, Snickers
Deep Fried Pickles	Anchor	N/A
Miscellaneous		
Hot Beverages	Miscellaneous	Hot Chocolate, Fresh Brew coffee, Earl Grey
Gum*	-	-
Halls*	Halls	-

Notes:

* Records did not show orders for these items during pilot season

Appendix B: Embro Arena Monthly Concession Sales, and Food and Beverage Costs

Month	Days open	Sales – excluding miscellaneous (\$)	Sales – including miscellaneous (\$)	Food and beverage costs (\$)
October	0	0.00	0.00	936.98
November	5	458.00	619.50	389.38
December	7	1,518.75	1,814.25	991.58
January	7	1,563.50	1,987.00	1416.97
February	2	683.25	807.75	718.17
Total	21	4,223.50	5,228.50	4,453.08

Appendix C: Thamesford Arena Monthly Concession Sales, and Food and Beverage Costs

Month	Days open	Sales – excluding miscellaneous (\$)	Sales – including miscellaneous (\$)	Food and beverage costs (\$)
September	0	0.00	0.00	1314.52
October	0	0.00	0.00	0.00
November	1	185.75	265.75	2782.27
December	10	877.00	1015.00	499.69
January	14	1375.75	1644.75	1953.87
February	11	946.75	1188.75	472.3
March	2	156.50	167.50	0.00
Total	38	3541.75	4281.75	7022.65

Appendix D: Embro Daily Concession Sales Averages and Totals, 2015/16*

Day	Days open	Average sales (\$)	Total sales (\$)	Per cent of total sales (%)
Friday	3	134.08	402.25	8
Saturday	11	361.64	3,978.00	76
Sunday	7	121.18	848.25	16
Total	21	N/A	5,228.50	100

Notes:

* Includes miscellaneous transactions

Appendix E: Thamesford Daily Concession Sales Averages and Totals, 2015/16*

Day	Days open	Average sales (\$)	Total sales (\$)	Per cent of total sales (%)
Monday	4	109.25	437.00	10
Wednesday	1	82.75	82.75	2
Friday	8	115.28	922.25	22
Saturday	12	126.54	1518.50	35
Sunday	13	101.63	1321.25	31
Total	38	N/A	4281.75	100

Notes:

* Includes miscellaneous transactions

Appendix F: Total Sales Summary

Items	Category	Unit Sales	Total Sales (\$)
Hot Beverages*† (3 items)	Miscellaneous	1104	1656.00
Fries	Unhealthy	891	3341.25
Colas (7 items)	Unhealthy	525	1176.75
Chocolate Bars (3 items)	Unhealthy	316	632.00
Hot Dogs	Unhealthy	230	632.50
Water	Healthy	141	141.00
Candy	Unhealthy	128	256.00
Onion Rings	Unhealthy	114	427.50
Sport Drinks (3 items)	Unhealthy	103	283.25
Baked Chips (3 items)	Unhealthy	98	122.50
Juice (2 items)	Healthy	80	109.00
Chocolate Milk	Healthy	77	134.75
Deep Fried Pickles	Unhealthy	59	221.25
Smoothies (3 items)	Healthy	50	162.25
Strawberry Milk	Healthy	33	57.75
Gum	Miscellaneous	31	62.00
Granola Bars	Healthy	24	24.00
Halls	Miscellaneous	18	27.00
Cheese	Healthy	9	6.75
Yogurt	Healthy	7	26.25
White Milk	Healthy	5	8.75

Notes:

* One size only

† Included tea, coffee and hot chocolate for Thamesford and coffee and hot chocolate for Embro



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