

# 2011 Sustainability Report

Saint Paul RiverCentre

Xcel Energy Center

## Leadership in the Region



In the spring of 2009, Saint Paul RiverCentre embarked on a mission to become a regional leader in sustainability. Saint Paul RiverCentre quickly partnered with neighboring Xcel Energy Center along with multiple on-site vendors. Together, they created a vision and multi-year goals for the facilities and focused on the issues of waste stewardship, green purchasing, energy management, water conservation and carbon footprint reduction.



Photo: Bruce Kluckhohn



Photo: Sean Smuda



The flagship program for these facilities is a waste initiative with 2-year goals:

- Reduce the trash by 50% (an amount equal to 1.2 million lbs/year.)
- Increase the recycling rate to 50% annually (starting from a benchmark rate of 15%)



The second major sustainability initiative is in the area of energy management. To foster the responsible use of energy, they created 3-year goals:

- Reduce their operational carbon footprint by 80%
- Increase energy efficiency of each facility to 20% better than average



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A report prepared by:



## What does it mean to pursue leadership in sustainability?

To us, it means taking a good honest look at who we are and how we work. It means accepting our limitations and understanding our potential. It means taking some risks and pushing some limits. It means being patient but getting things done. And it means doing the right thing both for our business and the world we live in.

I am incredibly proud of the work our staff, our partners, our clients and our guests have accomplished over the past two years. As with many organizational goals, it takes both a sense of unity as well as a pride and fire to drive to success. And while we have met our 50-50 in 2 goal and are pushing hard on our way to 80-20 in 3, we know that achieving these goals is not the end.

Leaders in sustainability should not limit their sight to what they see within their organization. They have a responsibility to bring others along in their journey and make them better as well. That is perhaps a glimpse of "what is next." We hope you can come along.

Jim Ibister

General Manager – Saint Paul RiverCentre  
Vice President Facility Administration, Minnesota Wild

## Program Timeline and Milestones

- **March 2009** – Facility Assessment Began
- **June 2009** – Strategic Goals Created
- **July 2009** – 50-50 in 2 & 80-20 in 3 Launched
- **September 2009** – 50-50 in 2 Rolled Out
- **December 2009** – 80-20 in 3 Rolled Out
- **February 2010** – 1,083 Parking Ramp Lights Upgraded
- **April 2010** – Received Sustainable Saint Paul Award for Waste Reduction and Recycling
- **June 2010** – Received MSAE Public Service Award
- **July 2010** – Quarterly Recycling Reached 50%
- **September 2010** – Green Purchasing Playbook Launched
- **September 2010** – Jim Ibister Received Vision Award
- **November 2010** – Windsource® for Events Launched
- **March 2011** – 1MW Solar Thermal Array Operational
- **April 2011** – 50-50 in 2 Goals Achieved Early
- **May 2011** – Electric Car Charging Stations Installed in Saint Paul RiverCentre Parking Ramp
- **May 2011** – Designated Xcel Energy 'Efficiency Partner'
- **June 2011** – Recognized by EPA at NHL Entry Draft

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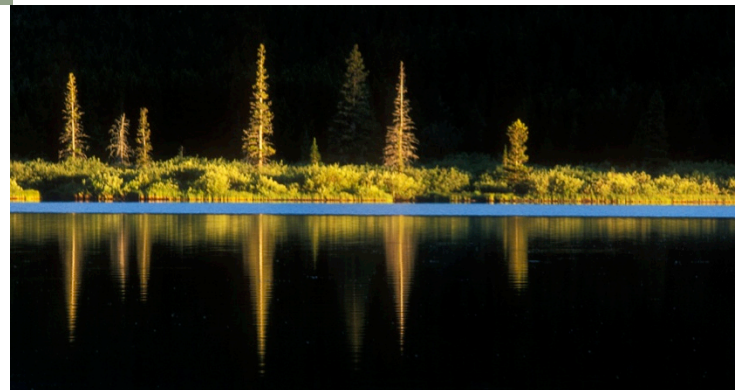
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## Testimonials...

*"I believe that Xcel Energy Center's part in the recycling process is very bold and respectable. I am proud to have such a dedicated and environmentally aware group of individuals taking part in the future of our planet."*

– Minnesota Wild Fan

*"The (recycling) results and feedback are really impressive. Thank you and your team for assisting with the (Black Eyed Peas) tour and being an industry leader through your venue's commitment."*

– Christopher Baumgartner, EFFECT Partners, Inc.

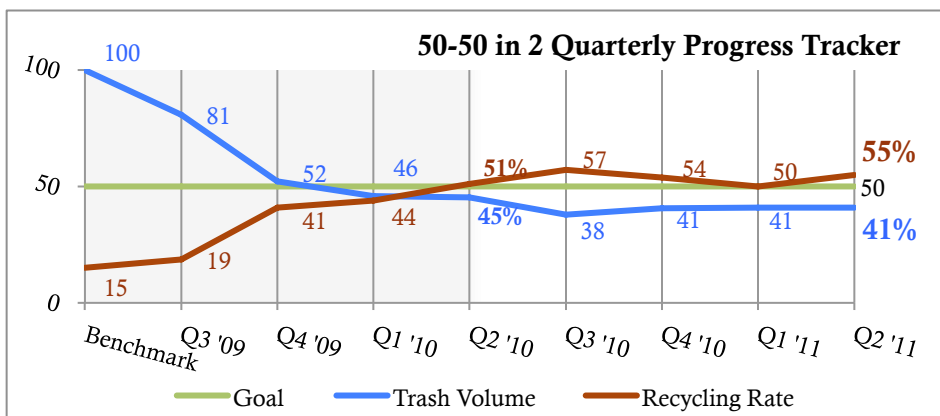


## Trash Reduction & Recycling

In 2009, after a full assessment of the facilities' waste stream, it became clear that this was the best starting point for the campus sustainability program. Using a 'benchmark' period of July 2007-June 2008 it was determined that the facilities generated 2.8 million pounds of waste and recycled at a rate of 15%. These numbers were the launch point for the 50-50 in 2 initiative and are the basis for measuring progress.

**Waste Out - Year One:** The program began with a complete redesign of waste collection infrastructure, focusing on the best ways to handle recyclable materials as they pass through the facility. New processes were implemented for cardboard, paper, and can & bottle recycling. Compost (or organics recycling) was also added as a primary recycling stream.

**Waste In - Year Two:** The focus shifted to assessing what remained in the trash. A full line of compostable tableware was introduced in all foodservice areas and in some cases durable china and silverware were added. Focus was also given to honing processes, improving collection and finding ways to recycle additional materials.



### 50-50 in 2 Goal – Year Two Summary

Trash Reduction: 59% (1,431,900 lbs)

Recycling Rate: 53% annually

### Compost - simplified

Composting is a process that takes leftover food, paper towels, paper plates, and even corn-plastic cups and breaks them down into nutrient-rich soil for landscaping and road projects. The process takes about 9 months.



## Recycling Highlights

### Two Year Program Totals

#### COMPOST (Organics)

Food scraps are collected from all kitchens, concessions, break rooms, restaurants and event spaces. Compost collection is available to the public in the concourses of both Saint Paul RiverCentre and Xcel Energy Center. Paper towels are composted from all restrooms. In addition, 90% of all disposable food service products are now compostable facility wide.

**320 tons or 640,000 lbs**

#### CARDBOARD & PAPER

Before this program, cardboard was collected and baled by staff. The process was labor intensive and during busy periods not all material made it to the baler. Today, cardboard is collected in a 40-yard compactor along with office paper allowing for easier, more efficient handling of both materials. As a result, the recycling of these materials has tripled and with rebates this system is paying for itself.

**311 tons or 622,000 lbs**

**\$22,000 in Rebates**

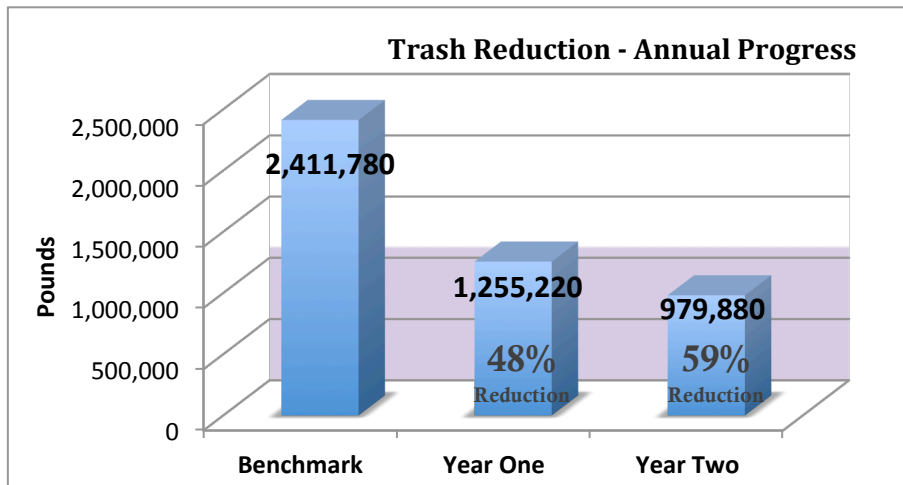
#### CANS & BOTTLES

This commingled process includes all metal and tin cans, #1 and #2 plastic bottles and glass. Before 2009, these items were mainly collected through manual sorting of the seating area following arena events. Cans and bottles are now collected in all areas of the facility.

**192 tons or 384,000 lbs**



# Trash Reduction & Recycling cont.

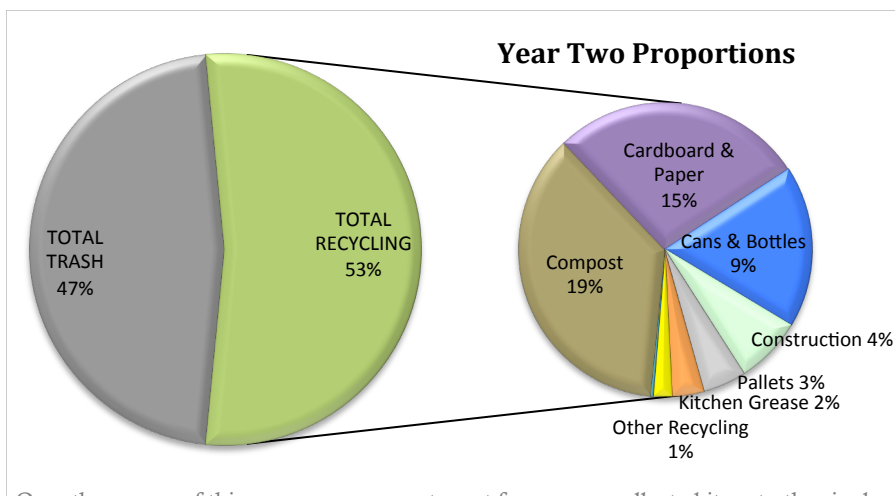


During the benchmark period, these facilities generated about 2.4 million pounds of trash per year. Reducing that number by half required more than just extensive recycling – a cultural shift was needed as well as a focus on overall waste reduction.

One example was the conversion to china in Headwaters Café. This change not only reduced waste but also provided an even better service to the guests. Another was event management’s transition to an online communication system, which drastically cut paper use. Facility wide, more attention was given to material reuse and reduction.

As a result of such efforts, the trash reduction target was nearly reached in Year One. In Year Two, the goal was far exceeded when 59% (1.4 million pounds) less trash was generated than the benchmark year.

<u>BENCHMARK</u>	<u>YEAR ONE</u>	<u>YEAR TWO</u>
July 07-June 08	July 09-June 10	July10-June11



Over the course of this program, compost went from an uncollected item to the single largest recyclable on campus – almost 20% of the entire waste stream. Cardboard and paper alone now equal the weight of all recycled material during the benchmark period.

## Recycling Highlights

### Two Year Program Totals

#### CONSTRUCTION

The backbone of the events industry revolves around set-up and teardown – in other words, building and deconstructing. As a result, there are often valuable raw materials left behind. By adding a separate stream for construction waste, the facilities are able to collect this material on an ongoing basis and provide a dedicated recycling process for construction projects.

**57 tons or 114,000 lbs**

#### PALLETS

Hundreds of trucks enter and leave these facilities each year - making deliveries, preparing for shows, or as part of a concert vehicle fleet. All of these trucks utilize pallets, which often times get left behind. The facility collects the pallets and gives them to a local company for distribution and reuse.

**49 tons or 98,000 lbs**

#### PLASTIC WRAP

Halfway into year one, it became obvious that large quantities of plastic wrap were entering the facility along with the pallets. This raw material is now baled and sold to Trex Company to become composite decking and lumber.

**2 tons or 4,000 lbs**

**\$513 in Revenue**





Out with the OLD...



...In with the NEW

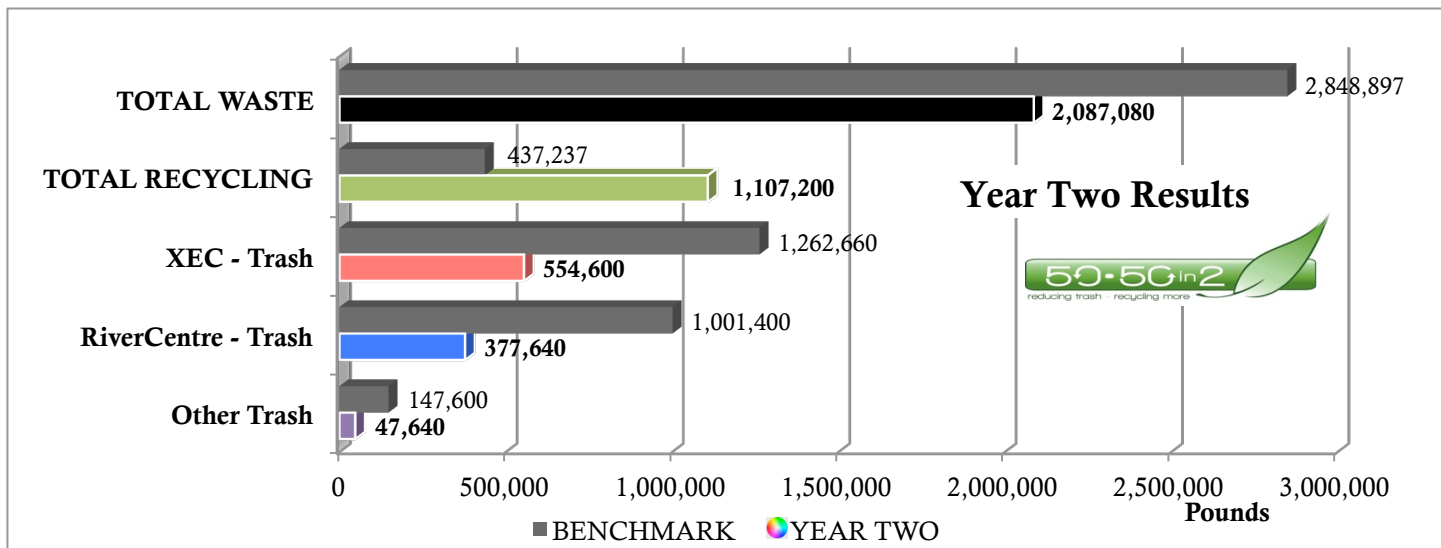
Since September 2009, the facilities have added over 650 new recycle bins to both public and back of house areas. Each year a sustainability innovation team makes more adjustments and adds new infrastructure to improve the program even further.

## Making a Difference

The 50-50 in 2 program has had a tremendous environmental impact. Over two years the program diverted a total of 2.58 million pounds of trash from being landfilled or incinerated. However, the impact has extended beyond measurable goals, because people began to change how they thought about waste on campus and at home.

As new infrastructure, processes and tools were added to these facilities, a new way of doing things operationally emerged. Staff across campus began to analyze what was left in the trash - and throwing things away was no longer an acceptable option for many items. Staff looked at piles of old 'stuff' and asked the question: 'I wonder if that can be recycled?'

This stewardship mentality has been a major driver for the ongoing success of the program. Recycling options have been found for smaller-quantity items like vinyl tablecloths and leftover promotional DVDs. Likewise, the facilities have begun to engage event planners and even guests in a conversation about the overall impact of an event - and how it can be reduced.



As shown in the graph above, recycling has almost tripled since the benchmark period. The two main trash streams have been reduced by more than half. However, the graph also shows a change that is not accounted for in the goal results: a substantial decrease in the overall waste stream, beyond what has been diverted to recycling. Although visitor numbers have decreased somewhat since the benchmark, this waste reduction has exceeded what can be attributed to having fewer people in the building.

### Did you know...

The Suite Level at the Xcel Energy Center added composting to existing recycling, and with the addition of compostable service ware is now diverting over 90% of the waste generated in that area.



# Bottom Line Impacts



Most companies treat expenses like waste hauling and utilities as uncontrollable costs that increase a few percent each year due to inflation. By focusing on improving the efficiency of operational processes, sustainability programs can serve to flatten and sometimes even reduce the cost curve.

Since costs are always on the rise, it can be difficult to show the true savings of a program like 50-50 in 2. If the program saves 5% a year while costs increase 6%, it may still appear that the new program costs more money. Therefore, it is helpful to use a measurement called “Cost Avoidance” to get a true picture of the impacts of the program.

In this case, cost avoidance means looking at what waste handling *would have cost* if the program had not been implemented. On paper, this program has only saved about \$10,000 per year. But because the cost of handling trash has increased from \$143/ton to \$228/ton since the benchmark period, these facilities would have paid about \$214,000 to handle waste in Year 2 if they were still recycling at 15%.

Therefore, the *avoided cost* achieved by this program is over **\$59,000 per year** – or approximately 28% of total current waste handling costs.

	Benchmark	Year One	Year Two
Trash Disposal & P/U	\$79,902	\$52,463	<b>\$45,669</b>
Recycle Disposal & P/U	\$3,521	\$26,974	<b>\$38,604</b>
Total Taxes	\$70,356	\$49,592	<b>\$46,026</b>
Total Extra Fees	\$16,319	\$16,214	<b>\$22,764</b>
Total Rental/Lease	\$4,725	\$17,546	<b>\$19,883</b>
Total Penalties	\$75	\$3,787	<b>\$3,417</b>
Total Trash Credits	\$0	\$213	<b>\$339</b>
Total Recycling Rebates	\$9,724	\$12,249	<b>\$20,885</b>
Net Trash Costs	\$171,552	\$123,092	<b>\$111,676</b>
Net Recycling Costs	<b>(\$6,186)</b>	\$31,023	<b>\$43,463</b>
Total Waste Costs	\$165,366	\$154,115	<b>\$155,139</b>
Annual Recycling Rate	18%	41%	<b>53%</b>

One key element in making the business case for sustainability is to look at a bigger picture view of what is considered “waste.” 50-50 in 2 produced efficiency in the workforce as well as making the handling of the waste stream cleaner and easier. Less wasted time equals more productivity. Furthermore, there are many items in the waste stream that serve as raw materials for other products, and therefore are worth money as a commodity. By ‘recycling’ these items instead of ‘wasting’ them the facility not only acts responsibly but also grows recycling markets - and generated almost \$21,000 in revenue during Year Two alone.

## Want lower taxes? RECYCLE!

Ramsey County and the State of Minnesota have both enacted trash taxes aimed at encouraging more recycling. Together, these taxes add 70% to trash hauling and disposal costs, which are not applied to recycling.



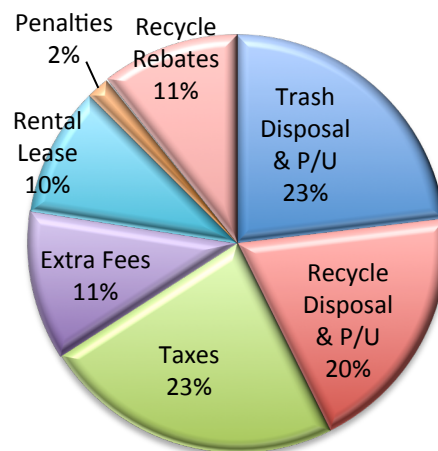
## Cost Avoidance

More than Bottom Line Savings

	2008	2011
Disposal Fee/Ton TRASH	\$47	-> \$68
Pick Up Fee CANS/BOTTLES	\$75	-> \$129
Cost to Handle per Ton - TRASH	\$143	-> \$228

The *avoided cost* achieved by this program is over **\$59,000 per year.**

## Year Two Cost Breakdown



# Green Purchasing

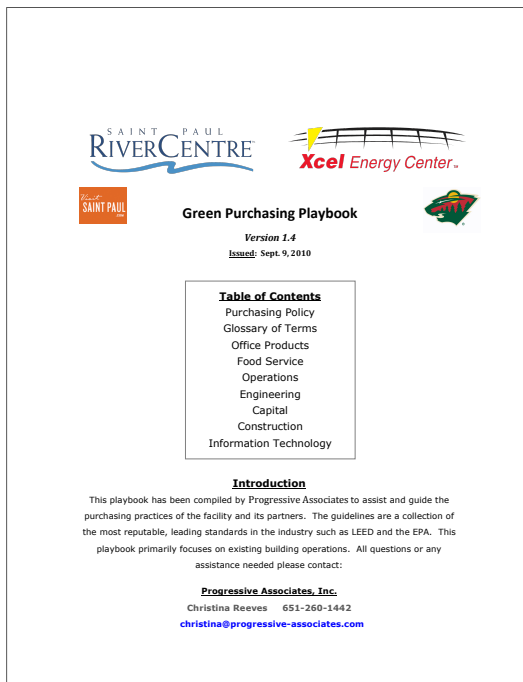
In September of 2010, coinciding with Year Two of 50-50 in 2, Saint Paul RiverCentre/Xcel Energy Center introduced a *Green Purchasing Playbook* to guide the majority of purchases made on campus. It identifies third-party standards like Energy Star and Green Seal across a range of product categories. The playbook provides the following policy guidelines: If a 'green' product meets the user's specifications and is within 10% of the price of the standard non-green product, then it should be given preference.

The purchasing standards are broken down by categories: office products, food service, operations, engineering, capital projects, construction materials and information technology.

In addition, the following options were created for flexibility:

- Acceptable: Defines the minimum standard required
- Exceptional: Provides parameters for a purchase that goes above and beyond the minimum requirement.

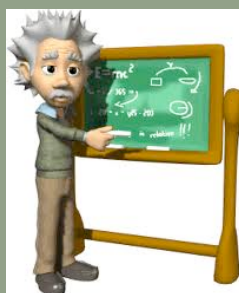
This playbook has paved the way for multiple products to be switched to greener alternatives, including office paper, custodial tissues, and the foodservice disposable products mentioned previously. As a result, about 65% by cost of the facilities' custodial papers and cleaners are now purchased to these standards.



Each product pictured above is compostable and/or made with recycled-content. These items have been added in the facility during Year Two. Also shown are several of the most reputable third-party logos that staff are guided to look for when using the Playbook.

## Did you know...

Not all 'green' products have a higher price tag. When the premium catering areas of Saint Paul RiverCentre switched their disposable tableware to a compostable alternative, they saved an average of 10%.





## Carbon Reduction & Efficiency

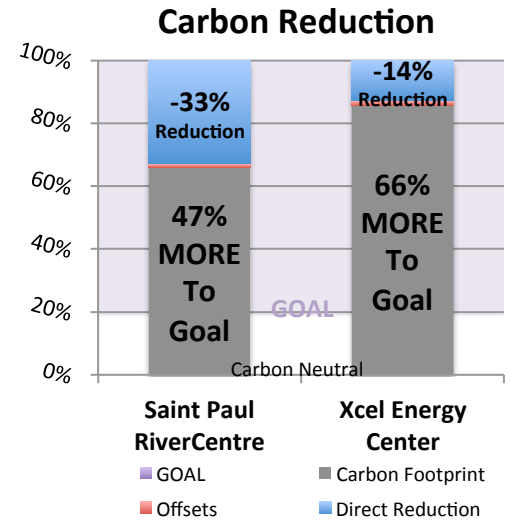
The energy goals of 80-20 in 3 are being approached in three distinct ways: through equipment upgrades & retrofits, operational improvements, and by the offsetting of remaining carbon emissions with renewable energy.

**Equipment Retrofits:** A three-year strategic plan, in conjunction with Xcel Energy to maximize available rebate funding.

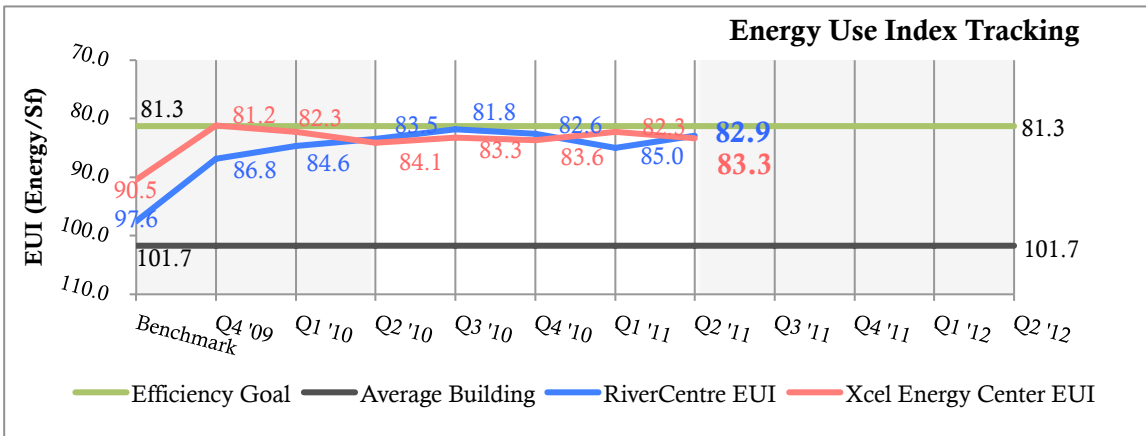
**Operational Changes:** Focus on reducing all unneeded energy draws, especially during non-event periods when the buildings are 'dark.'

**Renewable Energy:** Includes both on-site solar power installations and off-site wind power purchases.

While significant progress has been made in all of these areas in the first two years, the most focused effort toward reaching them will occur in Year Three with a particular push on retrofits and renewable energy.



The graph above shows that the carbon footprint of the facilities has been decreased in the first two years but has a long way to go. This is partly by design, as aggressive purchasing of offsets through Xcel Energy's Windsource for Events program will begin in Year Three.



**Year Two**

**18.3%**

**More efficient than an average building**

The graph above shows how each facility's efficiency compares with regional averages for 'Public Assembly' buildings. This is measured based on its Energy Use Index (EUI), or energy use per square foot each year. Both facilities showed substantial efficiency improvement from the benchmark period through the middle of Year One, and have hovered just below the goal since then.

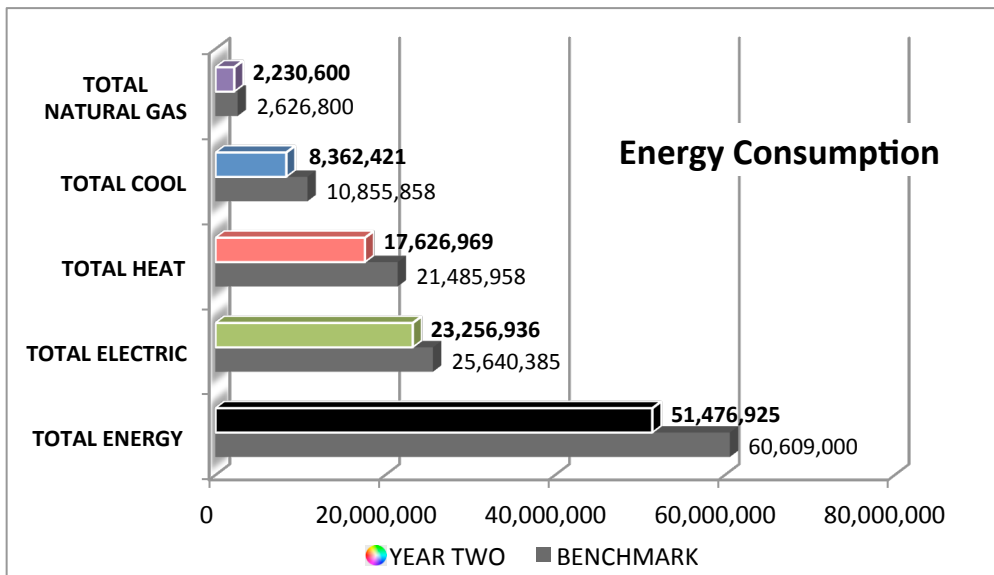
### Did you know...

Many buildings 'prove' their efficiency by seeking Energy Star certification. However, there is no Energy Star category for convention centers and arenas, so they need to show progress in other ways.





# Saint Paul RiverCentre



The primary focus of efficiency retrofits has been in lighting, where improvements are substantial and paybacks are often just a couple of years. For example, the 2010 retrofit of Saint Paul RiverCentre parking ramp is realizing about \$50,000 in energy savings per year - in addition to improving the light quality in the area. Two similar projects are in process for loading dock areas.



Energy usage at Saint Paul RiverCentre has gone down across every category since the benchmark period. The most significant drop was in heating, even though winter temperatures this year were similar to the Benchmark period. Overall energy use has been cut by over 15%, improving Saint Paul RiverCentre to 18.5% more efficient than an average building.



In March of 2010, a 1MW solar thermal array came online atop the Saint Paul RiverCentre roof. It is currently the largest solar thermal array in the Midwest and the first in the nation to be tied into a district energy system.

The project was made possible by a \$1 million grant from the US Department of Energy and was completed in partnership with District Energy Saint Paul, the City of Saint Paul and the Solar America Cities program.

The system will generate about 1.2 million kWh of heat energy each year, avoiding over 400 tonnes of carbon emissions. This energy goes to space and water heating in Saint Paul RiverCentre first, and any excess goes back to the District Energy grid.

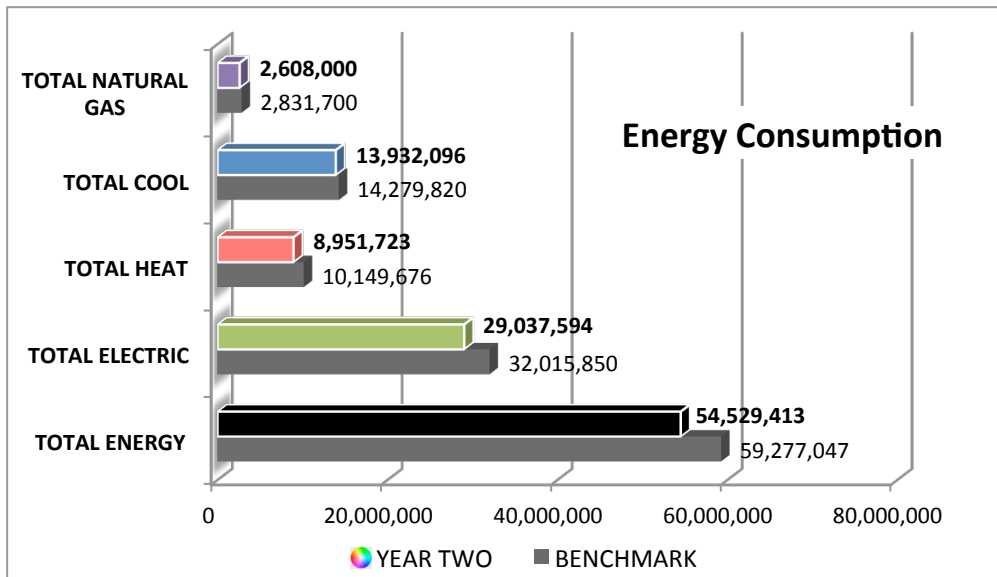
	BENCHMARK	YEAR TWO	Difference
<b>ELECTRIC COSTS</b>	<b>\$599,005</b>	<b>\$615,394</b>	<b>2.7%</b>
Usage Costs	\$356,080	\$320,387	-10.0%
Demand Charges	\$141,862	\$148,669	4.8%
Taxes/Fees	\$101,063	\$146,339	44.8%
<b>NATURAL GAS COSTS</b>	<b>\$29,076</b>	<b>\$18,836</b>	<b>-35.2%</b>
Usage Costs	\$24,753	\$15,125	-38.9%
Taxes/Fees	\$4,323	\$3,711	-14.1%
<b>HEATING COSTS</b>	<b>\$409,621</b>	<b>\$398,807</b>	<b>-2.6%</b>
Usage Costs	\$165,554	\$137,619	-16.9%
Demand Charges	\$188,283	\$203,334	8.0%
Taxes/Fees	\$55,784	\$57,854	3.7%
<b>TOTAL COOLING COSTS</b>	<b>\$699,577</b>	<b>\$739,975</b>	<b>5.8%</b>
Usage Costs	\$70,412	\$58,805	-16.5%
Demand Charges	\$560,976	\$606,894	8.2%
Taxes/Fees	\$68,189	\$74,277	8.9%
<b>TOTAL COSTS</b>	<b>\$1,737,279</b>	<b>\$1,773,012</b>	<b>2.1%</b>
<b>TOTAL ENERGY USAGE (kBtu)</b>	<b>60,609,000</b>	<b>51,476,925</b>	<b>-15.1%</b>
Cost/kBtu	\$0.0287	\$0.0344	20.2%
Year Two Cost @ Bench Usage		\$2,087,547	
Year Two Cost Avoidance		<b>\$314,535</b>	15.1%

Although energy usage has decreased substantially, overall energy costs increased by about 2% since the benchmark period. This is due primarily to cost increases from utilities in the form of demand charges and fees as well as taxes. Based on the same cost avoidance model used with waste, energy costs for Saint Paul RiverCentre *would have been* approximately 15% higher if usage had not gone down – equivalent to over \$300,000/year in avoided costs.

# Xcel Energy Center



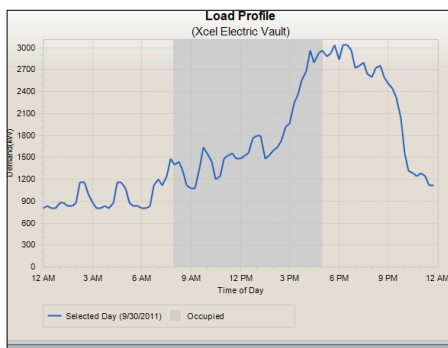
Photo: Bruce Kluckhohn



To encourage event participation in carbon reduction, the facilities have introduced Windsourse® for Events – an option to buy into Xcel Energy’s wind power program in short-term blocks for event offset. In Year Two, participants such as University of Minnesota’s E3 Conference, Minnesota Wild, Minnesota Swarm and the NHL Entry Draft combined to offset over 208,000 kWh with wind.



Like at Saint Paul RiverCentre, energy usage went down across all categories at Xcel Energy Center. While the reduction was less substantial at the arena, its benchmark usage was also lower than Saint Paul RiverCentre. At the end of Year Two, it is about 18.1% more efficient than an average Public Assembly building in the region.



Northwrite® energy management software was installed in both facilities to provide real-time data on where and how the buildings are using energy.

This software is used in multiple ways:

- To show when abnormal energy draws are happening
- To measure the progress of specific initiatives and actions
- To identify the true energy requirements of large events

Northwrite® gives a much clearer picture of building energy usage than the utility bills alone can provide.

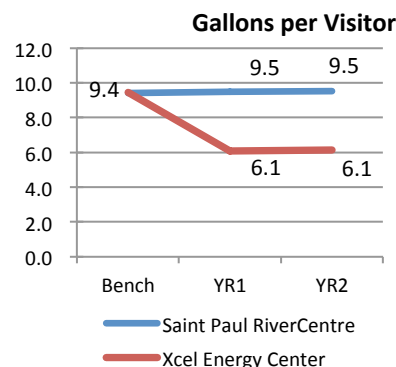
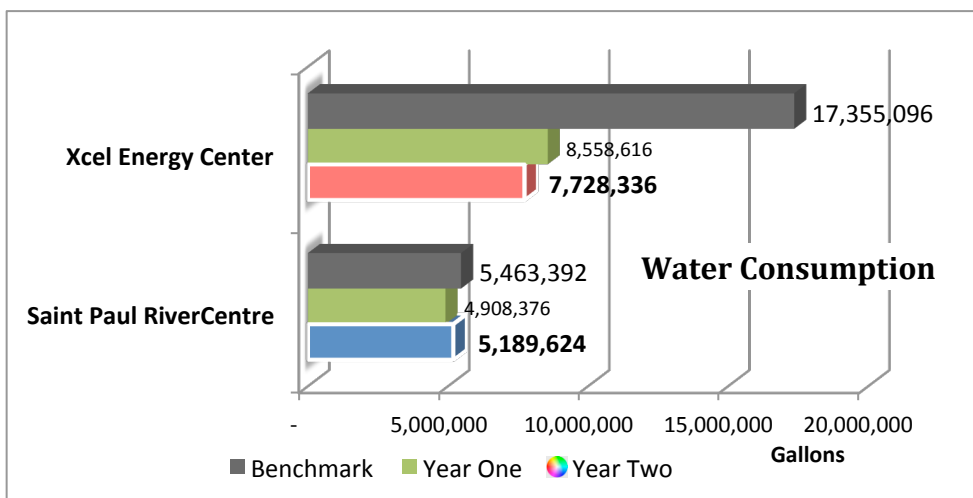
	BENCHMARK	YEAR TWO	Difference
<b>ELECTRIC COSTS</b>	<b>\$739,761</b>	<b>\$767,864</b>	<b>3.8%</b>
Usage Costs	\$437,208	\$402,601	-7.9%
Demand Charges	\$176,316	\$187,021	6.1%
Taxes/Fees	\$126,236	\$178,243	41.2%
<b>NATURAL GAS COSTS</b>	<b>\$30,700</b>	<b>\$21,843</b>	<b>-28.9%</b>
Usage Costs	\$26,918	\$17,504	-35.0%
Taxes/Fees	\$3,782	\$4,339	14.7%
<b>HEATING COSTS</b>	<b>\$207,711</b>	<b>\$200,946</b>	<b>-3.3%</b>
Usage Costs	\$77,939	\$69,769	-10.5%
Demand Charges	\$100,646	\$101,997	1.3%
Taxes/Fees	\$29,126	\$29,180	0.2%
<b>TOTAL COOLING COSTS</b>	<b>\$647,624</b>	<b>\$696,415</b>	<b>7.5%</b>
Usage Costs	\$92,633	\$98,211	6.0%
Demand Charges	\$492,156	\$526,982	7.1%
Taxes/Fees	\$62,836	\$71,221	13.3%
<b>TOTAL COSTS</b>	<b>\$1,625,796</b>	<b>\$1,687,068</b>	<b>3.8%</b>
<b>TOTAL ENERGY USAGE (kBtu)</b>	<b>59,277,047</b>	<b>54,529,413</b>	<b>-8.0%</b>
Cost/kBtu	\$0.0274	\$0.0309	12.8%
Year Two Cost @ Bench Usage		\$1,833,954	
Year Two Cost Avoidance		<b>\$146,886</b>	8.0%

While energy usage has decreased by 8% at this facility, costs have increased by almost 4% since the benchmark period. However, when those increases are translated into cost avoidance, Xcel Energy Center’s energy costs *would have been* almost \$147,000 more in Year Two if the usage had not gone down over that time period.

# Water Conservation

In 2009 the decision was made to wait on setting a specific goal for reducing water use. With major strides underway on waste and energy, the purpose was to study the water usage, get to know the challenges better and track ongoing usage. Studying usage allows for a more strategic approach and better allocation of future capital. Tracking not only builds a historical trend to compare against any future initiatives but also has revealed a drastic change.

In Saint Paul RiverCentre and Xcel Energy Center, overall usage has dropped since the benchmark period. However, the water use in the arena has been cut by over half since 2007-2008. There were several adjustments performed over that time, such as water temperature management that enabled fixtures to run less often.



The graph above shows the extent to which water usage in the arena has been decreased - far more than any change in the number of visitors to the building.

This graph details the reduction in water at Saint Paul RiverCentre and Xcel Energy Center since the benchmark period. It shows that with strong engagement from facility management and engineers, and a focus on efficiency, progress can be made even without a current strategic goal.

One element of Green Purchasing includes upgrading fixtures and equipment to water-conserving models when it is time to replace them. The third party standard for these products is the EPA's WaterSense® certification program.



RiverCentre	BENCHMARK	YEAR ONE	YEAR TWO	Difference Bench-Yr 2
Water Cost	\$13,489	\$14,243	\$15,769	17%
Sewer Cost	\$20,427	\$21,295	\$22,965	12%
Taxes & Fees	\$112	\$1,191	\$1,090	875%
<b>Totals:</b>	<b>\$34,027</b>	<b>\$36,729</b>	<b>\$39,824</b>	<b>17%</b>
<b>Xcel Energy Center</b>				
Water Cost	\$42,699	\$24,750	\$23,369	-45%
Sewer Cost	\$64,784	\$37,212	\$34,193	-47%
Taxes & Fees	\$3,077	\$1,897	\$1,795	-42%
<b>Totals:</b>	<b>\$110,559</b>	<b>\$63,860</b>	<b>\$59,357</b>	<b>-46%</b>

Water use reductions have been enough to reduce total water costs by 46% at the arena. However at Saint Paul RiverCentre, costs have gone up by about 17%, partly due to taxes now being charged that did not exist during the benchmark.

## Did you know...

Two commercial dishwashers were replaced in the arena in fall of 2010. In their place now sit high-efficiency, water-conserving models that are also easier to use.

