



# Board Workshop / Discussion Agenda

15 West Kellogg Blvd.  
Saint Paul, MN 55102  
651-266-9200

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February 6, 2024 - 10:30 a.m.

Courthouse Room 220

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## WORKSHOP

1. **Arena Refrigerant Replacement & Energy Savings Program**

[2024-020](#)

Sponsors: Parks & Recreation



# Board Workshop / Discussion

## Request for Board Action

15 West Kellogg Blvd.  
Saint Paul, MN 55102  
651-266-9200

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**Item Number:** 2024-020

**Meeting Date:** 2/6/2024

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**Sponsor:** Parks & Recreation

**Title**

Arena Refrigerant Replacement & Energy Savings Program

**Attachment**

1. Presentation



# Arena Refrigerant Replacement & Energy Savings Program

Parks & Recreation

February 6, 2024

# Agenda & Goals

## Introductions

- Johanna Berg, Interim County Manager
- Mark McCabe, Parks & Recreation Director

## Goals

- Provide the Board with an overview of ice arena refrigeration system operational challenges.
- Explain energy savings program opportunities Parks has been seeking to fund refrigeration system replacements and reduce energy consumption.
- Obtain Board endorsement on continuing next steps with the energy savings program.

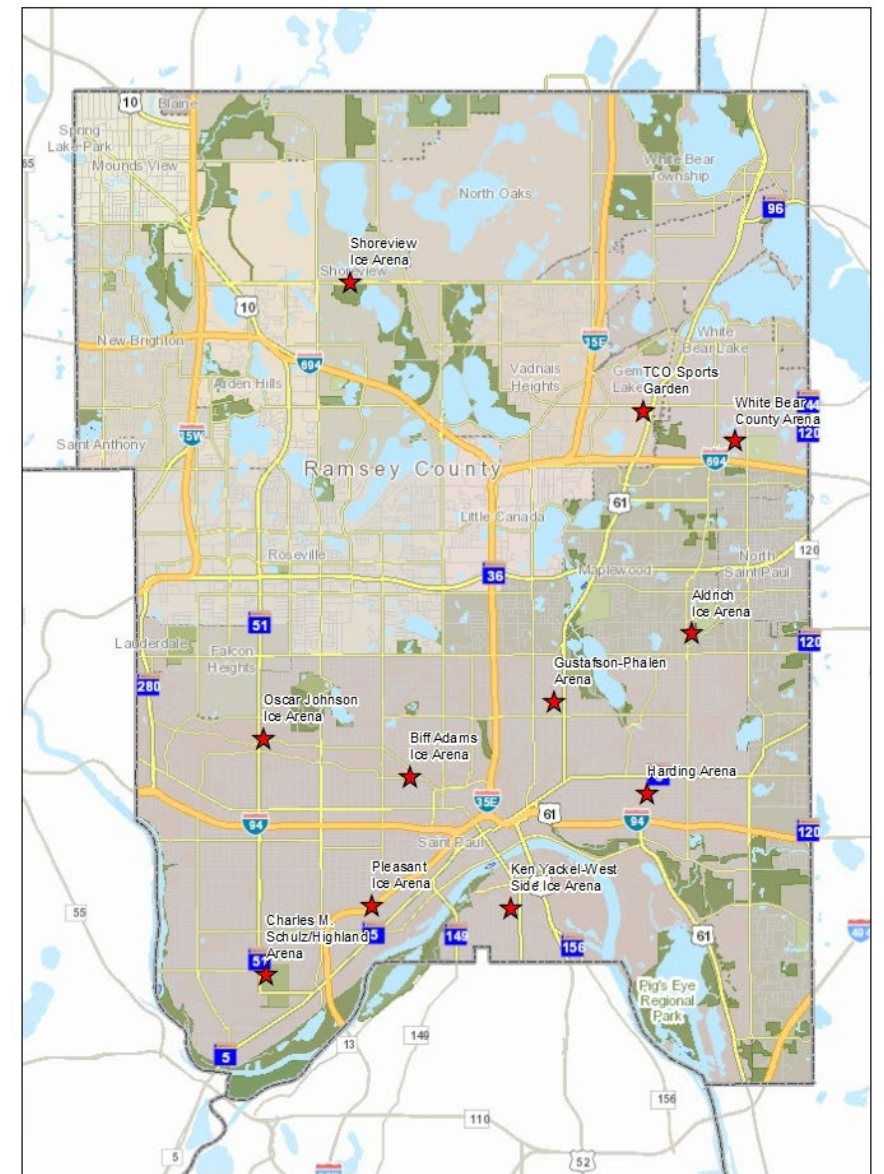
# Arena System

## Saint Paul Arenas

- Biff Adams
- Charles M. Schulz
- Gustafson-Phalen
- Harding
- Ken Yackel-West Side
- Oscar Johnson
- Pleasant

## Suburban Arenas

- Aldrich (Maplewood)
- Shoreview
- TCO Sports Garden (Vadnais Heights)
- White Bear (White Bear Lake)



Ramsey County Parks & Recreation Department  
Ice Arenas



# R-22 Refrigeration Issue

- All Ramsey County ice arenas except TCO Sports Garden utilize R-22 refrigerant.
- As of 2020, the federal government no longer allows production of R-22 due to ozone depletion properties.
- It is legal to continue to utilize R-22 as a refrigerant.
- Supplies of R-22 are limited since it is no longer being manufactured.
- Refrigerant leaks do occur, a supply of R-22 is needed to continue operations of the system.
- A replacement refrigerant is needed to ensure continuity of operations.



# Arena Energy Use Challenges

- Arenas account for 87% of all energy consumed in Parks & Recreation facilities.
- Specialized Building Automation Systems are needed to maintain ice temperatures while also reducing unnecessary consumption when arenas are not in use overnight.
- Warmer temperatures are putting additional stress on mechanical systems and are increasing energy consumption.
- Most arenas were built in the 1970s before modern energy conservation practices were in place.

# Arena Strategic Planning and Community Engagement

- Parks & Recreation's vision is to create a dynamic, community-centered system that provides opportunities for Ramsey County's ever-changing community to engage with inclusive and welcoming sites and programming.
- Parks has been engaging the community regarding use of arena facilities and future recreational needs. Community feedback has informed recommendations for future use of arena facilities.
- Created a tiered arena structure to demonstrate long range plans for facilities and corresponding investments.



# Tier 1 - Facilities with long term future as ice arenas, larger venues with strong resident use.

## Tier 1 - Arena Investments and Funding Strategy

- Aldrich: Estimated \$12.8 M renovation project including energy savings upgrades.
- Highland: Estimated \$8.7 M renovation project including energy savings upgrades.
- TCO Sports Garden: Refrigerant up to date. Additional energy work to be completed.

Arena	Tier 1	Investment Needed	Funding Strategy	Community Engagement
<b>Aldrich</b>	x	Highest Investment	2024 State Bonding Bill	Complete
<b>Highland</b>	x	Highest Investment	Future State Bonding & County CIP	Complete
<b>TCO Sports Garden</b>	x	Minimal Investment	Existing Capital Funds	Complete

## Tier 2 - Facilities with significant resident use, strong youth associations, practice rinks / smaller facility capacity.

### Tier 2 – Arena Investments and Funding Strategy

Arena	Tier 2	Investment Needed	Funding Strategy	Community Engagement
Oscar Johnson	x	Mid-Level Investment	Honeywell Energy Program	In Process
Shoreview	x	Mid-Level Investment	Honeywell Energy Program	In Process
West Side	x	Mid-Level Investment	Honeywell Energy Program	Complete
White Bear	x	Mid-Level Investment	Honeywell Energy Program	In Process

## Tier 3 - Facilities where historical use has changed, practice rinks / smaller facility capacity.

### Tier 3 – Investments and Funding Strategy

Arena	Tier 3	Investment Needed	Funding Strategy	Community Engagement
<b>Biff Adams</b>	x	Mid-Level Investment	Frogtown Curling Club & State of MN	Complete
<b>Gustafson-Phalen</b>	x	To Be Determined	To Be Determined	Future
<b>Harding</b>	x	To Be Determined	To Be Determined	Future
<b>Pleasant</b>	x	To Be Determined	To Be Determined	Future

# Financing of Refrigeration System Replacements

- Historically there has not been capacity in CIP to fund these replacements.
- Parks applied for State funding through the Mighty Ducks program in past legislative cycles and was not awarded grant funding.
- A request for refrigeration system replacement and building renovation funds for Aldrich Arena is the county's third overall bonding priority for the 2024 legislative session.
- Staff researched federal and state programs and are exploring an energy savings program with Honeywell Inc. that could help fund refrigeration system replacements along with additional energy upgrades.

# Honeywell Program Leverages State and Federal Resources

## State program called “Energy Savings Performance Contracting”

- State Statute 471.345.
- Applies a budget-neutral approach to making building improvements that reduce utility usage and increase operational efficiency.
- Pay for today’s facility upgrades with tomorrow’s utility savings.
- Savings/performance are guaranteed by the Energy Service Company.

## Federal resources obtained through Inflation Reduction Act 2022

- Significant funding opportunities available for renewable projects via direct payments with public entities.
- Need to act soon, once federal funds are exhausted, program will end.

# Energy Savings Program – Honeywell Partnership

- Preliminary evaluations by Honeywell deemed an energy savings/payback program was not financially viable for replacing Tier 1 arenas with high investment refrigeration systems due to significant infrastructure replacement costs.
- The preliminary evaluation warranted further exploration of mid-level investment installing refrigeration systems at Tier 2 arenas (West Side, Oscar Johnson, Shoreview, White Bear).
- County Board authorized Honeywell to begin formal analysis in November.
- If analysis determines systems can be replaced by utilizing energy savings, Ramsey County would not have to make capital investments.



# Honeywell Partnership Proposed Scope Of Work

	Aldrich	Highland	TCO Sports Garden	Oscar Johnson	Shoreview	West Side	White Bear Lake	Gustafson-Phalen	Harding	Pleasant
Replace R-22 refrigerant			✓	x	x	x	x			
Replace chiller				x	x	x	x			
LED Lighting	✓	x	✓	x	x	x	x	x	x	x
Using cool water systems to re-surface ice			✓	x	x	x	x			
Utilize heat energy from icemaking for building heat				x	x	x	x			
Install efficient heating for spectators				x	x	x	x			
Building management system controls			✓	x	x	x	x			
Submetering - zoned energy monitoring				x	x	x	x			
Building automation software optimizes energy efficiency				x	x	x	x			
Improved insulation and reduction of heat escape		x	x	x	x	x	x	x	x	x
Install glycol pump motors				x	x	x	x			
Install solar panels	x		x							
Add dehumidification				x	x	x	x			

✓ Work previously completed  
 X Proposed work

## Program Finances and Term

- If all energy cost savings are realized, the savings would pay for the entire cost of capital investments in these facilities, estimated at a \$6.2M value.
- The term of the agreement that would yield enough saving to pay back the investment maximum of 20 years.
- Once the agreement is final, Honeywell guarantees the energy savings. If annual savings are less than guaranteed savings Honeywell will pay the shortfall.



# Program Benefits

- Replaces up to four outdated refrigeration systems to ensure ongoing operations.
- Decreases overall county capital funding request for refrigeration replacement by using energy savings to pay for significant portion of needed investments.
- Advances county's energy consumption reduction goals as improvements project to reduce energy consumption in arena facilities by 25-30%.
- Ensures continued operations of arenas.

# Next Steps with Energy Program Evaluation

- Evaluate energy and operational savings site by site.
- Work with Honeywell and County finance teams to vet a financing plan.
- Finalize agreement ensuring energy savings payback as way of financing refrigeration system replacements.



# Open Discussion