

# Rec Center Pool Solutions

## Benefits for People, Planet and Profit



*Bethany and Dannie*

# Our Proposal

WWU Sustainability Committee defines sustainability as:

- Protects the **health** of its inhabitants.
- Creates **economic** vitality
- Protects local and global **ecology**
- Upholds **social** development and equity



**We propose to improve the sustainability of the WKRC pool**

# Chlorine on People and Planet

## 1. Compound Chlorine or "Chloramines"

↓  
Chloramines produce harmful air and water quality

↓  
Chloramines are the irritants

↓  
Exposure to chloramines becomes harsh on skin, eyes, lungs, and pool infrastructure.

1. Super-chlorinating is **harsh on people** exposed to the area and on **the environment**.
2. Chlorine and Chloramines have **environmentally hazardous** effects.

# Current Concerns

## Casual Pool Users:

- Chest and nasal **irritation**
- Skin **drying, cracking, and irritation**
- Eye **irritation** and **inflammation**
- **Discomforting** and **toxic** if swallowed

## Recreational Pool Users:

- **Toxicity** symptoms include **lethargy** and **weakness**
- Ingestion may result in **nausea, pain** and **vomiting**

# Stakeholders

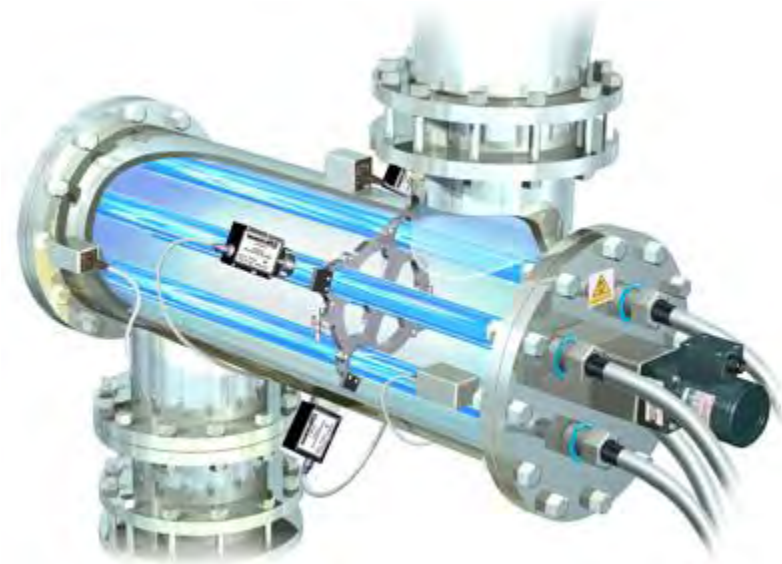
- **Wade King Recreation Center Management and Staff**
- **Aquatic Specialties** - Seattle based pool maintenance company
- **Swimmers**
- **Green Energy Fee Staff**
- **Facilities Management**

# What are the Alternatives?

Saltwater Sanitation System

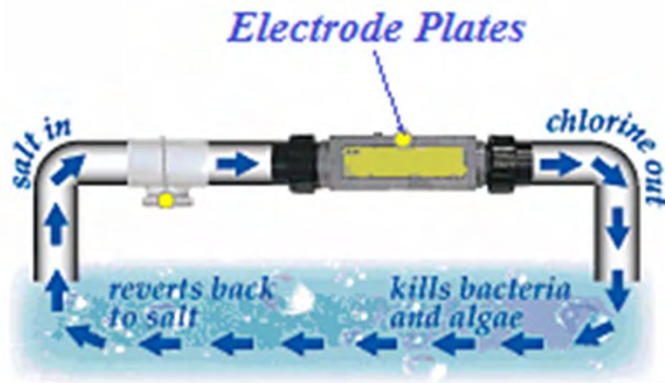


Ultraviolet Water Treatment System





# Saltwater System



System runs saltwater across electrolysis plates to derive chlorine for pool sanitation.

# Case Studies

“Our patrons love it, and our CPO and maintenance staff have a lot less work to do in keeping the pool operating”



Marc Phillips  
Facilities Director  
Alaska Pacific University

“To date the conversion exceeded my expectation and the bathers prefer the salt over harsh chlorine hands down.”



Elaine R. Durr  
Director of Sustainability  
Elon University



# Saltwater System

## Pros:

- No harsh chemicals
- Less chemical costs
- Sanitizes just as well as Chlorine
- No smell
- No irritation to users

## Cons:

- Initial Cost
- Highly corrosive
- Requires rigorous maintenance
- Cost of replacing parts
- Slight buoyancy
- Entirely new system
- Unknown if spa compatible

# UV Water Treatment System



1. System exposes water to Ultraviolet light that breaks apart and destroys the chloramines, free-chlorine, and bacteria in the water.
2. The water is then further sanitized with chlorine.

# Case Studies

"Yes we do use UV on our indoor bodies of water. We have 5 UV systems: they are on 3-Pools & 2-Spas"



Christopher J. Budvitis  
Director of Aquatics  
Texas A&M University

Other institutions using UV to sanitize their pools are the University of Texas and Yale University.



# UV Technology

## Pros:

- Long lifetime
- Less chemical costs
- Increased sanitation ability
- Removes Chloramines (irritants)
- Improved air and water quality
- Added to current system
- No super-chlorinating
- Spa compatible

## Cons:

- Initial cost
- Cost of Chlorine
- Handling of Chlorine
- Cost of replacing bulbs
- Mercury used in bulb manufacturing

# Investment

Our research for pricing on Saltwater systems and UV technology have presented us commercial rates for the initial investment to be around \$40,000 - \$50,000

# UV Technology is our Solution





# What's Next?

## **Budget and Funding:**

1. Applying for The Student Green Energy Fee Program this Spring
2. Wade King Recreation Center Investment
3. Applying for additional grants or incentives

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Children and Teachers Child Development Center

Water

**WWU** OFFICE OF **SUSTAINABILITY**



# Questions & Comments

