



LIFESAVING SOCIETY®

The Lifeguarding Experts

LIFEGUARD POSITIONING ANALYSIS TOPICAL AUDIT

HARBOUR POOL

CITY OF FORT SASKATCHEWAN



REPORT

JULY 31, 2019





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The Lifesaving Society is Canada's lifeguarding expert. The Society works to prevent drowning and water-related injury through its training programs, Water Smart® public education, water-incident research, aquatic safety management services, and lifesaving sport.

Annually, over 1,200,000 Canadians participate in the Society's swimming, lifesaving, lifeguard, and leadership training programs. The Society sets the standard for aquatic safety in Canada and certifies Canada's National Lifeguards.

The Society is an independent, charitable organization educating Canadian lifesavers since the first Lifesaving Society Bronze Medallion Award was earned in 1896.

The Society represents Canada internationally as an active member of the Royal Life Saving Society and the International Life Saving Federation. The Society is the Canadian governing body for lifesaving sport - a sport recognized by the International Olympic Committee and the Commonwealth Games Federation.

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About the Lifesaving Society

Saving lives for over 100 years

The Lifesaving Society is a full service provider of programs, products, and services designed to prevent drowning. The Society saves lives and prevents water-related injuries through its training programs, Water Smart® public education, drowning research, aquatic safety management and lifesaving sport. The Society is a national volunteer organization and registered charity composed of ten provincial/territorial branches, tens of thousands of individual members, and over 4,000 affiliated swimming pools, waterfronts, schools, and clubs.

The Society has been teaching swimming, water safety and water rescue in Canada since 1896. Established in England (1891) as the Swimmers' Lifesaving Society, it became The Royal Lifesaving Society in 1904. Today, it is known simply as the Lifesaving Society. The Lifesaving Society is a leader and partner in the delivery of water safety education throughout Canada and around the world.

Teaching Canadians to save themselves and rescue others

Annually 1,200,000 Canadians participate in the Lifesaving Society's swimming, lifesaving, lifeguard, first aid, and leadership programs. Each year, the Society certifies thousands of instructors who provide the leadership for its training programs. Over 30,000 Canadians earn the Society's Bronze Medallion each year. As Canada's lifeguarding experts, the Lifesaving Society sets the standard for lifeguard training and certifies Canada's National Lifeguards.

Making Canadians Water Smart

The Lifesaving Society focuses Water Smart® drowning prevention efforts on people most at risk — like men fishing in small boats — or on those who can make a significant difference, such as parents of young children. The Society delivers Water Smart® messages through its swim program, through the media and community action. The Society's Swim to Survive® Program provides the essential minimum skills required to survive an unexpected fall into deep water.

Drowning Research

The Lifesaving Society conducts research into fatal and non-fatal drowning, aquatic injury and rescue interventions. Ongoing research and analysis supports the Society's evidence-based water rescue training and Water Smart® drowning prevention education.

Setting the Standard

The Lifesaving Society establishes aquatic safety standards and consults on aquatic safety issues for the aquatic industry, government and the judiciary. The Society offers a suite of services to help aquatic facility operators maintain and improve safe pool and waterfront operations. The Society performs aquatic safety audits and serves as experts in legal cases involving aquatic safety.

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Lifeguard Positioning Analysis Purpose

The City of Fort Saskatchewan retained the Lifesaving Society to undertake a topical audit of lifeguard positioning at the Harbour Pool.

It was agreed that the purpose of the lifeguard positioning analysis was to analyze lifeguard surveillance systems at the Harbour Pool. The lifeguard positioning analysis would identify steps that could be taken to reduce the risk of drowning or serious water-related injuries within the area of lifeguard surveillance systems.

The scope of the topical audit would include facilitated discussions and activities with management and staff.

Lifeguard Positioning Analysis Process

Facilitator

The Lifesaving Society was represented by Kyla Meyers, Training Programs Coordinator as the Chief Auditor, Christina Palech, Strategies and Partnerships Manager, and Norm Baldry, an aquatic safety auditor. The Lifesaving Society has extensive experience in aquatics and facility evaluation.

The City of Fort Saskatchewan appointed Kayla Dow, Aquatic Operations Supervisor, as the primary contact for the auditors.

Lifeguard Positioning Analysis Components

The auditors followed a process that included:

- Guided facilitation with lifeguards within the aquatic facility
- Debriefing with management
- Completion of a draft and final report

Lifeguard Positioning Analysis Facilitation Process

The auditor facilitated the Lifeguard Positioning Analysis with fifteen (15) lifeguards on May 4, 2019. It was noted that the positioning analysis took place during a Saturday afternoon public swim. The questions that were asked were:

1. What is the role of National Lifeguards in this facility?
 - Answers provided by staff:
 - "Scan and observe patrons"
 - "Administer swim tests"
 - "Prevention/education"
 - "Rescue response"
2. Who else has a safety and supervision role in the facility as it relates to the safety and supervision of bathers?
 - Answers provided by staff:
 - "Cashiers: respond to whistles, education, first contact of patrons entering the facility, enforce adult/child ratios"
 - "Leadership Instructors: supervise their class"
 - "Supervisors: supervise staff, run inservices/train staff"
3. What do you predict the facility demographics will be?
 - Weekdays
 - Early morning: "Lane swim (Seniors/Adults)"
 - Morning: "Lessons (Preschool), School lessons (6-12 years old)"

-
- Afternoon: "School recreation swims (6-18 years old), Special needs groups (Adults)"
 - Evening: "Swimming lessons (all ages), Swim club (9-17 years old), Public swim (Families)"
 - Weekends
 - Morning: "Swimming lessons (all ages)"
 - Afternoon: "Public swim (Families), Birthday parties (all ages)"
 - Evening: "Aqua fit and Lane Swim (Adults)"
4. How do you decide to adjust your lifeguard positions and who would make this decision?
- "Follow the procedure manual"
 - "Staff training"
 - "Supervision evaluation of lifeguards"
 - "Discussing appropriate changes between staff; alternatives are clear"
5. Do you have any concerns that you want addressed through the Lifeguard Positioning Analysis?
- Guard position 1:
 - "There is a tripping hazard"
 - "You don't see the bay for long periods of time (1:30 sec)"
 - Pathway length: "Length of time to walk pathway seems very long"
 - Time when supervising ("lifeguarding") while teaching: "do we require a supervision break if our shift is 4 hours?"
6. Where do you think your blind spots and glare are located?
- Lifeguards drew what they thought their blind spots and glare would be on a map of the pool, prior to testing their predictions.

The next step in the facilitation was to position the lifeguards on the pool deck and experience the ability to scan and determine blind spots from the existing lifeguard positions. A manikin was positioned around the pool to identify where blind spots and glare are located. The exercise tested assumptions, created awareness, and educated staff on the existing lifeguard surveillance system.

This process was followed by a debriefing; staff were then asked the following questions:

1. Can you lifeguard the pool with one lifeguard only?
 - Answers: "No, especially not when busy"
2. Can you lifeguard the pool from standing in one spot?
 - Answers: "No"

3. What must you do for surveillance to manage blind spots and glare?

- Answers: "Move and scan"

The debriefing included staff presenting their findings and where blind spots were identified based on the exercise for each of the lifeguard positions.

Reporting Process

Drawing on all documentation supplied by the facility, facilitation notes, assessments and observations, the Lifesaving Society has documented a report for review by the City of Fort Saskatchewan.

Upon receiving feedback and updated information from the facility, the final report will be formalized and delivered for consideration of implementation.

Lifeguard Positioning Analysis Outcomes

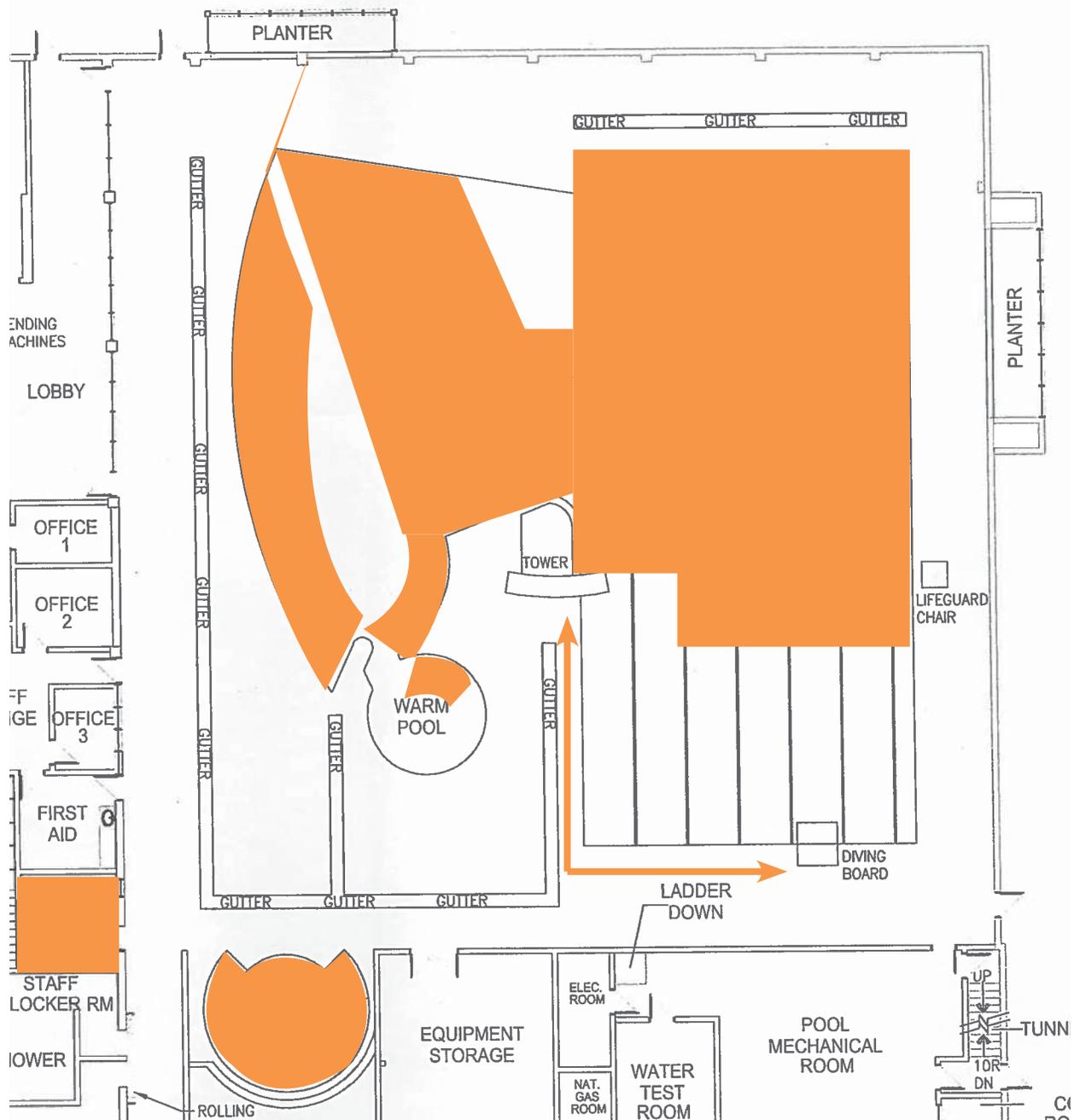
Identification of Blind Spots

- Blind spots exist in multiple areas of the facility, and include areas where glare was present. Blind spots are indicated in the following charts based on observations from the Lifeguards who participated in the Lifeguard Positioning Analysis and may be reflective of the time of day, season, weather, amenities that were in use, and the number of bathers that were using the pools being tested at the time of the analysis. The Society recognizes that blind spots may change based on a number of factors and uses this data as a starting point for the analysis.

Lifeguard Position 1

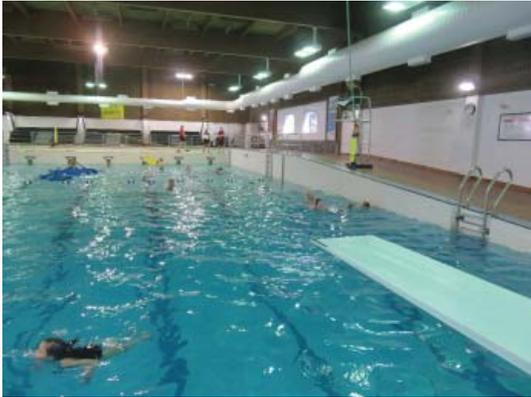
Comments made by staff:

- “Almost all of the pool is blind spots or glare”
- “You could see that there was a shape but you could hardly tell what it was”



Key

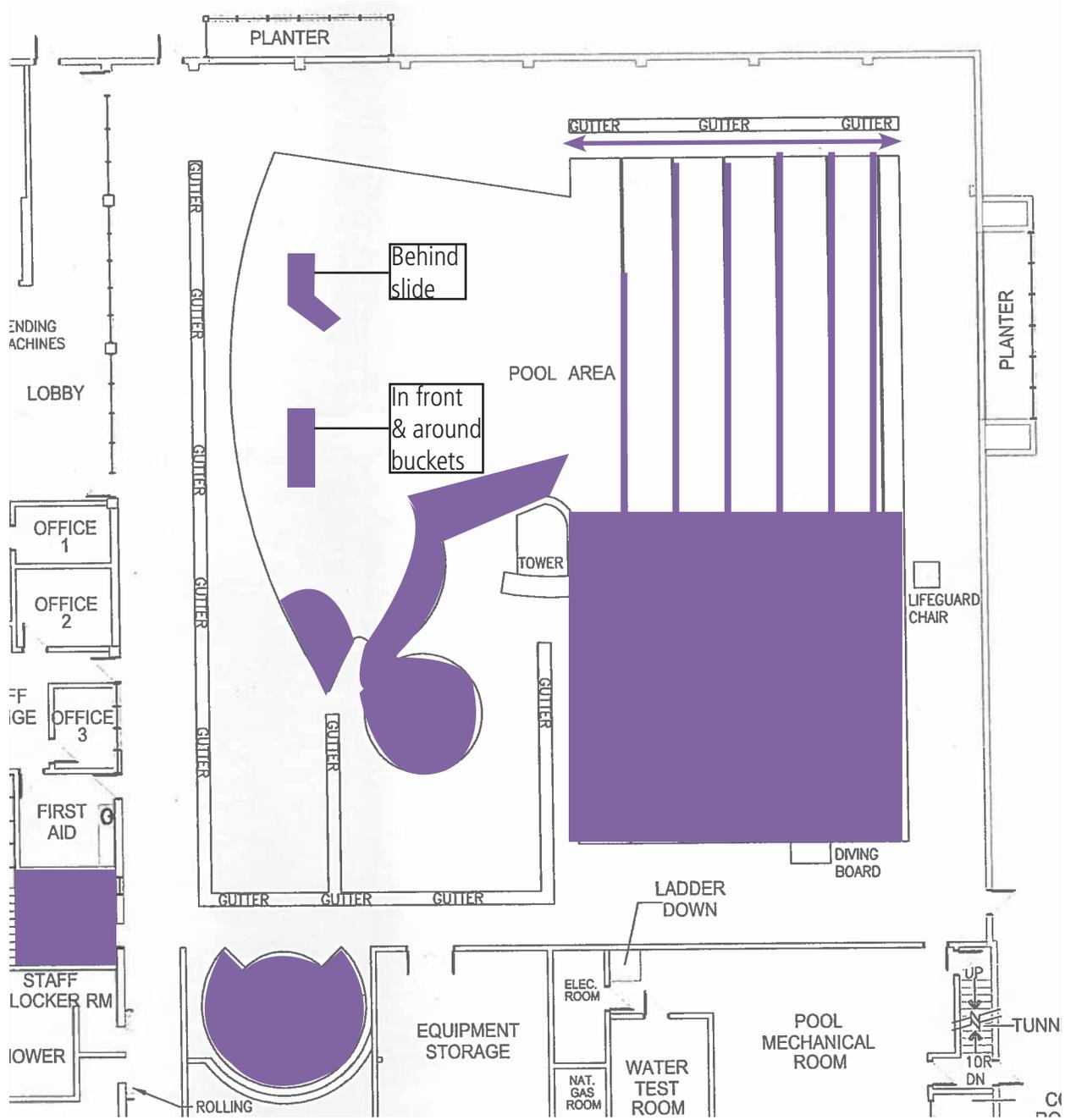
- Blind spots ■
- Lifeguard Pathways ↔

Photo	Comment
	<p>From this position, the manikin cannot be seen in the shallow end.</p>
	<p>From this position, the manikin cannot be seen in the shallow end.</p>
	<p>From this position, the manikin cannot be seen along the far wall.</p>

Lifeguard Position 2

Comments made by staff:

- "You cannot see anything in the deep end"
- "Couldn't see anything over the black line"
- "Right around the buckets and the slide was really hard to see"



Key

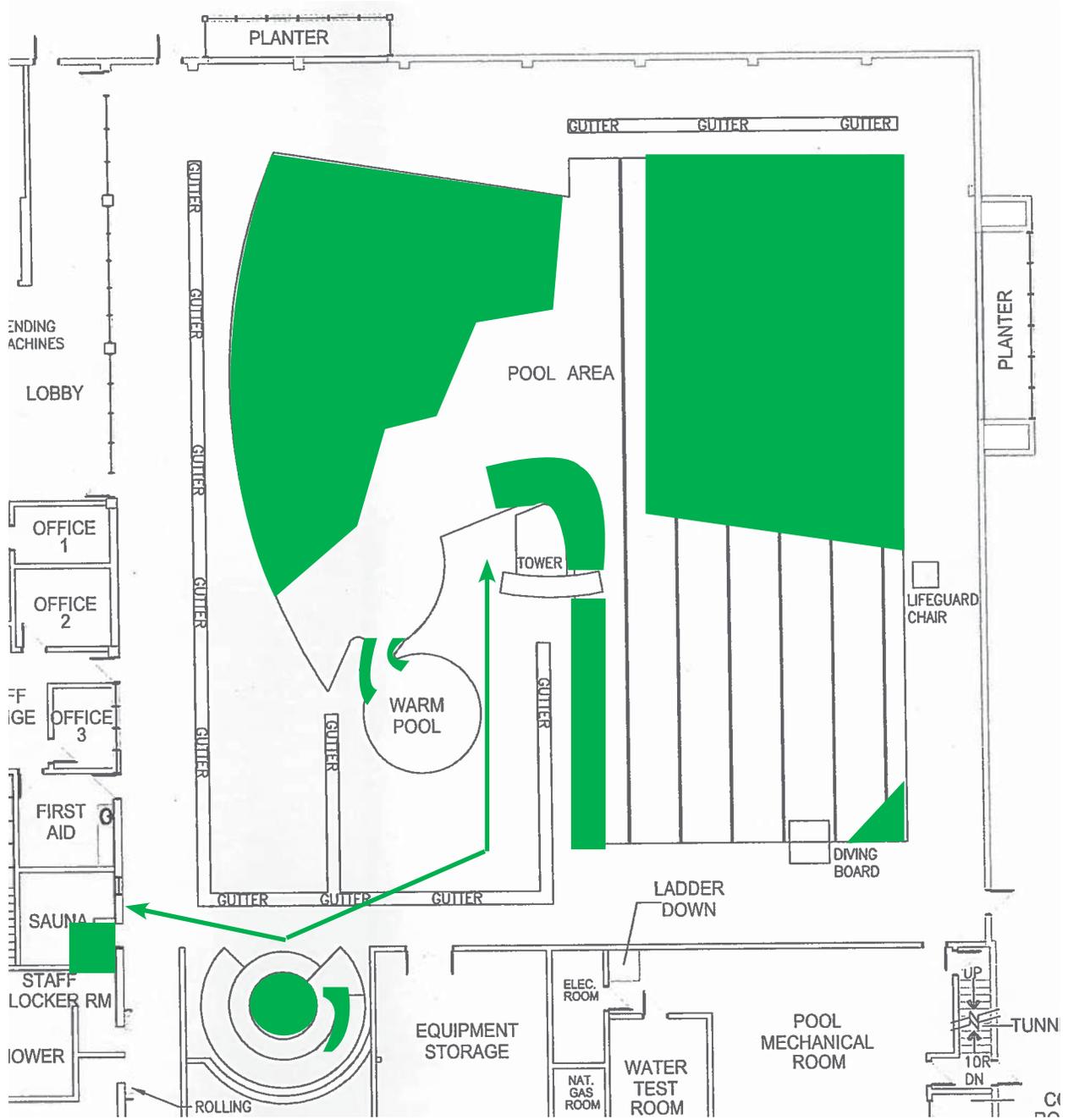
- Blind spots ■
- Lifeguard Pathways ↔

Photo	Comment
	<p>From this position, the manikin cannot be seen near the rope.</p>
	<p>From this position, the manikin cannot be seen near the wall.</p>
	<p>From this position, the manikin is difficult to see near in the corner of the bay.</p>

Lifeguard Position 3

Comments made by staff:

- "The tower was a big blindspot no matter where we were"
- "Deep end corners were really hard to see"
- "Whirlpool when the jets were on it was really hard to see - even using the mirror"



- Key
- Blind spots ■
 - Lifeguard Pathways ↔

Photo	Comment
	<p>From this position, the manikin cannot be seen in the shallow end.</p>
	<p>From this position, the manikin cannot be seen in the warm pool.</p>
	<p>From this position, the manikin cannot be seen in the hot tub.</p>

Lifeguard Position 4 (The Bay)

Comments made by staff:

- "After the first line, Timmy disappeared"
- "Hard to see in the middle of the pool because of the glare"
- "I couldn't see the sauna or the deep end"

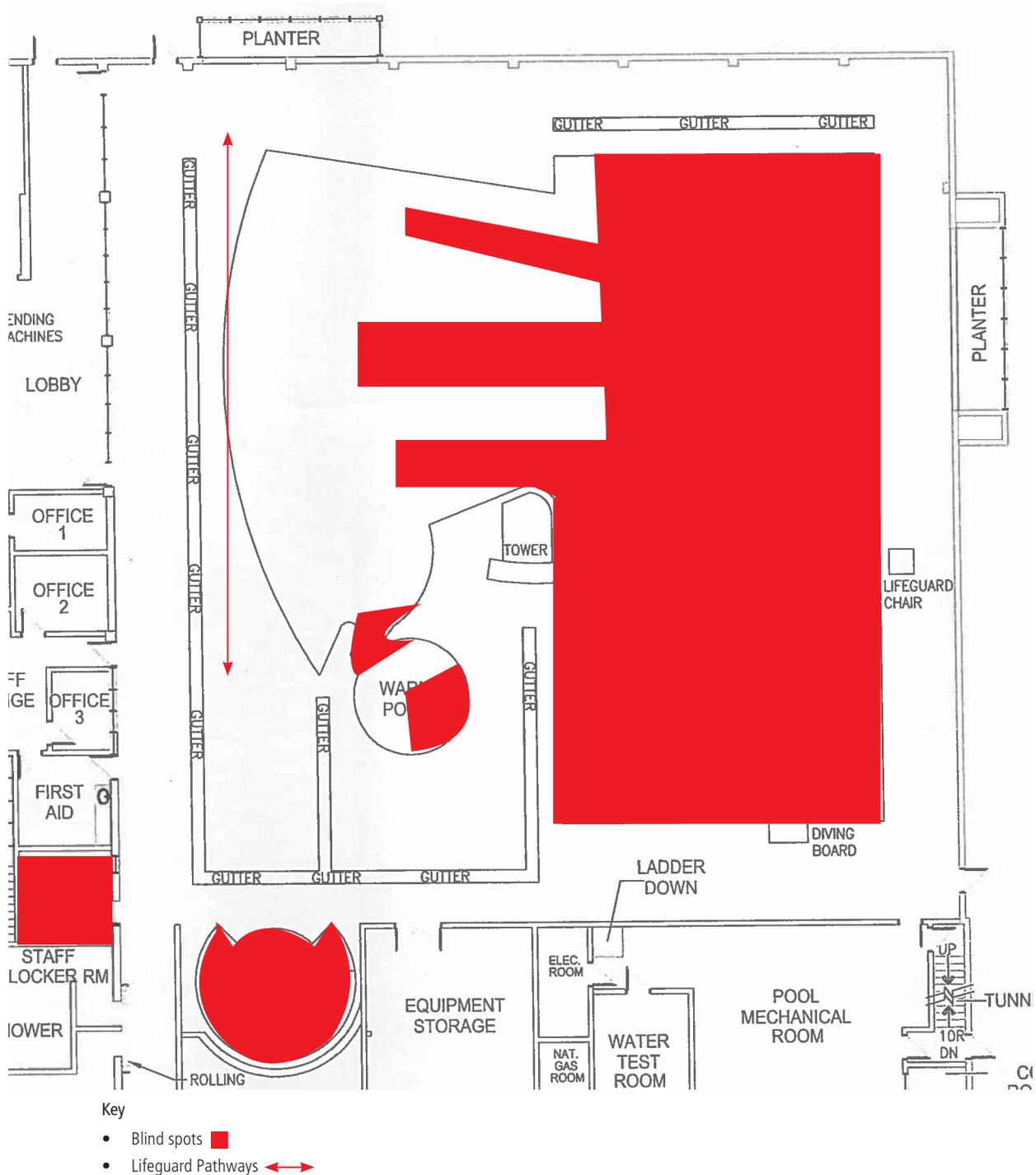
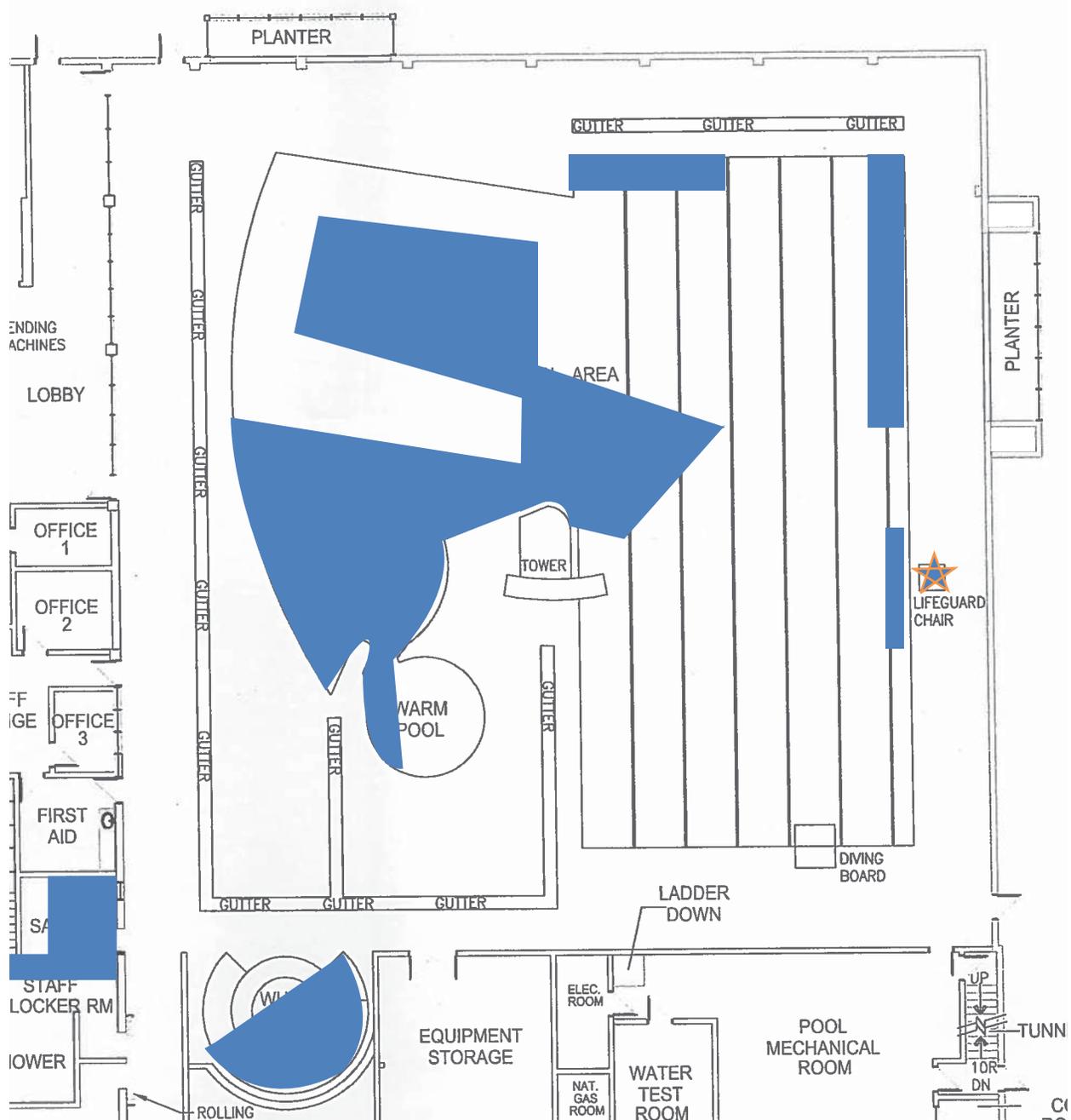


Photo	Comment
	<p>From this position, the manikin is difficult to see along the wall.</p>
	<p>From this position, the manikin cannot be seen in the shallow end.</p>
	<p>From this position, the manikin cannot be seen in the shallow end.</p>

Lifeguard Position 4 (The Guard Chair)

Comments made by staff:

- "A lot of glare in the bay"
- "By the cages or right underneath the chair you couldn't see Timmy"
- "Can see the top of the sauna but not all of it"



Key

- Blind spots ■
- Lifeguard Chair ★

Photo	Comment
	<p>From this position, the manikin is difficult to see in the shallow end.</p>
	<p>From this position, the manikin cannot be seen at the bottom of the pool.</p>
	<p>From this position, the manikin cannot be seen at the bottom of the pool.</p>

Glare

There are a number of areas in the pool that are affected by glare. Lifeguards need to recognize glare on the water and adjust their positioning accordingly. The use of pathways helps reduce the effects of glare, as lifeguards move the glare changes.

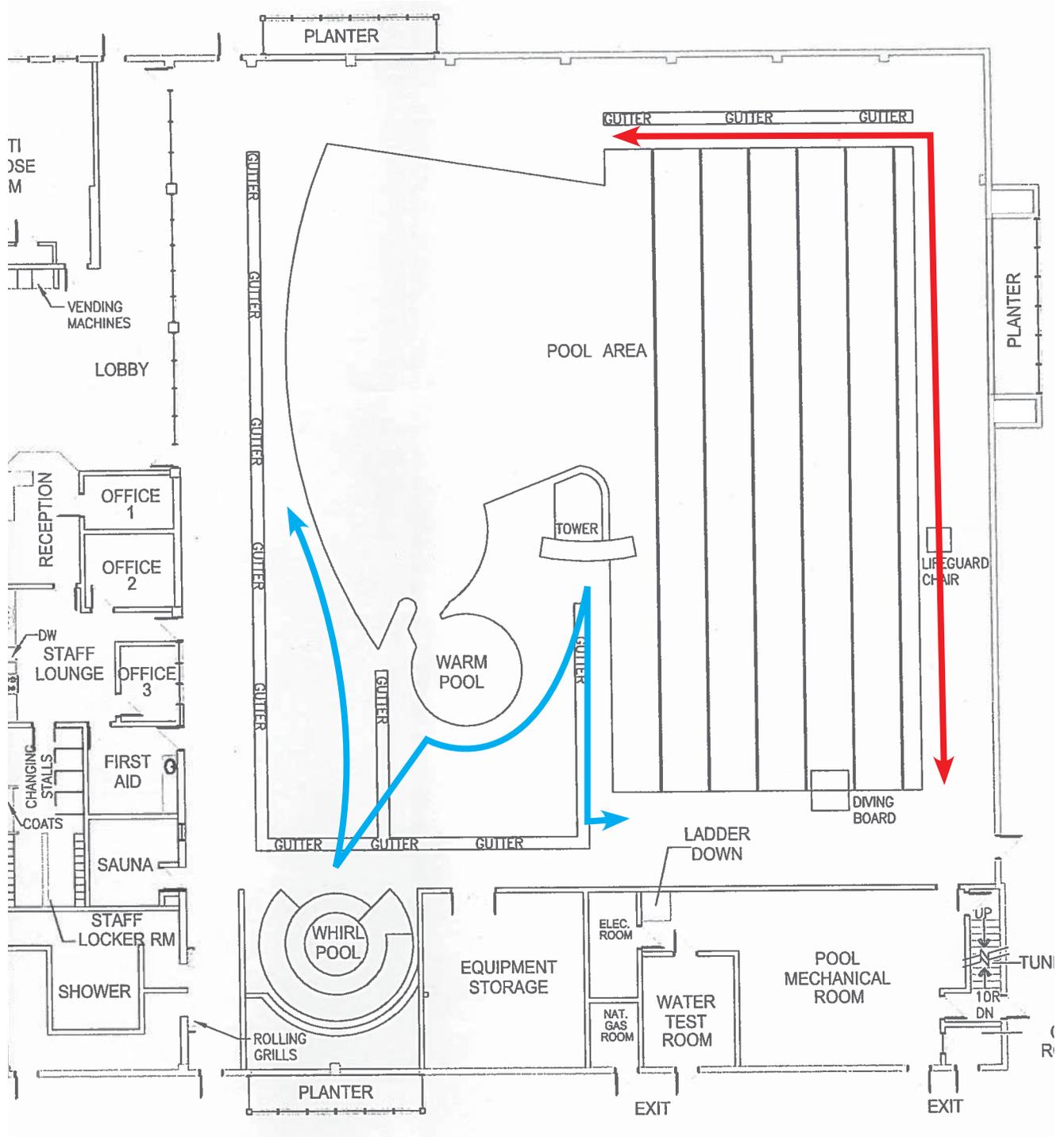
Rotation Notes

The staff indicated that rotations take place every 15 minutes. When rotating on the pool deck lifeguards go to position 1 then move to position 2, 3, 4, etc. When rotating off the pool deck lifeguards check behind the slide, the change rooms, perform water tests if required, perform a head count, and take a break.

Possible Lifeguard Pathways

Suggested pathways were identified during the Lifeguard Positioning Analysis and serve as one possible procedure for lifeguard surveillance, pathways, positioning, and rotation. Ongoing facility analysis and adaptation based on bather loads, user demographics, and operational realities should be taken into consideration by management when updating or reviewing the safety and supervision plan.

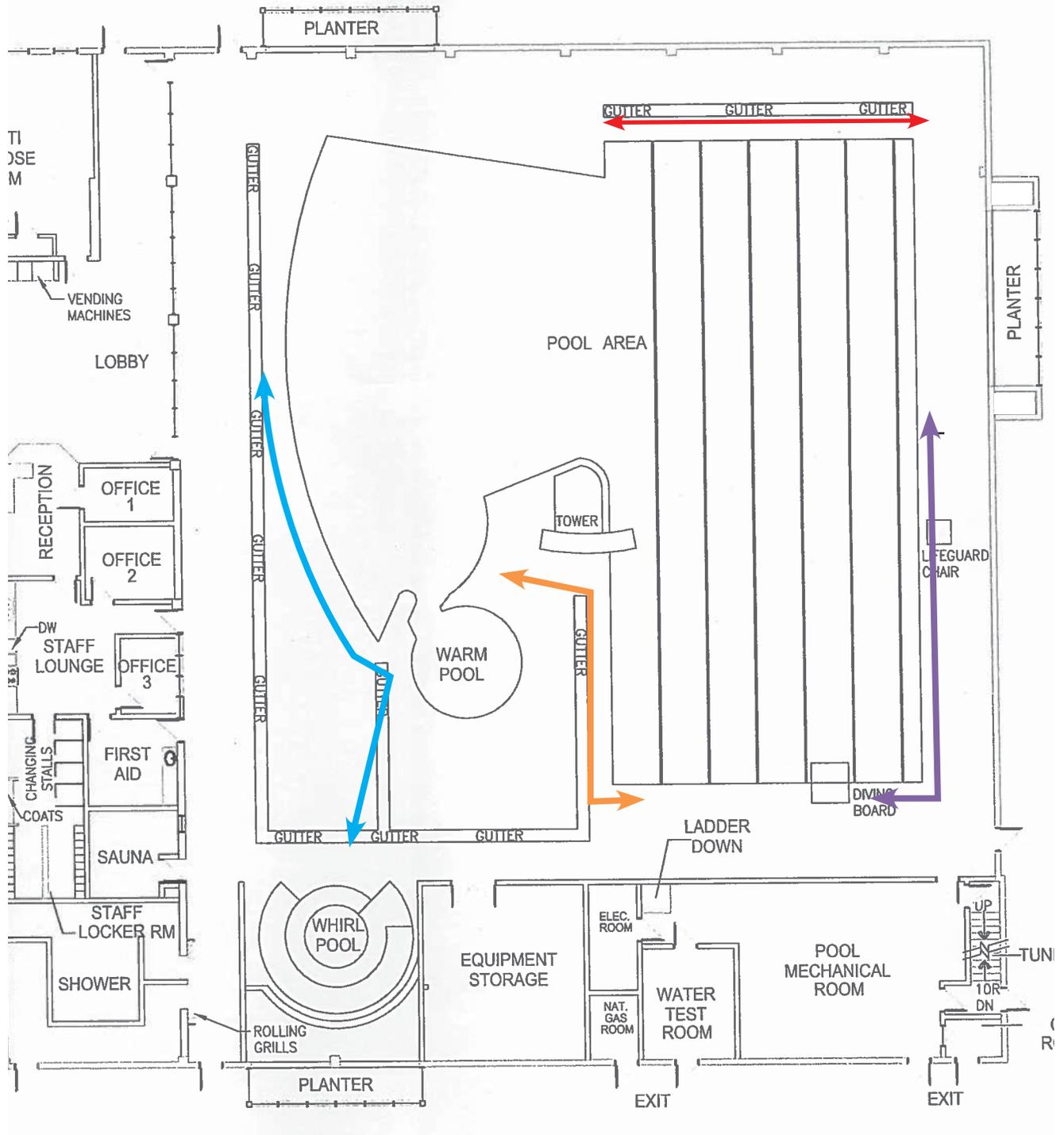
Two Lifeguards (For Controlled User Groups)



Key

- Lifeguard 1 Pathways ↔
- Lifeguard 2 Pathways ↔

Four Lifeguards



Key

- Lifeguard 1 Pathways ↔
- Lifeguard 2 Pathways ↔
- Lifeguard 3 Pathways ↔
- Lifeguard 4 Pathways ↔

Lifeguard Positioning Analysis Findings

Comments and Observations from lifeguards as a result of this process:

Overall Staff Comments:

- "Tower was a great vantage point"
- "Manikin looked just like the sinker toys at a certain spot"
- "There was way more glare than I thought"
- "There are a lot more blindspots than just the ones by the mirrors"
- "While the jets are on (in the warm pool or the hot tub) it's impossible to see"
- "When the buckets are on it creates a big blindspot"
- "From position 2 - how bad the blindspots are around and behind the slide was surprising"
- "I knew the black lines were bad but not THAT bad"
- "Differences between "seeing" and recognizing"
- "How little you can see in position #1"
- "There weren't many spots where you can clearly identify that it was a child"
- "Standing on the guard chair you can't see below you under the wall"
- "In some ways, the better lights have not helped what you can see"

Comments and Observations from the auditors as a result of this process:

- "The manikin cannot be seen in the hot tub when the jets are turned on"
- "The layout is complex. Structural features add in a lot of blindspots for the lifeguards"
- "There is no single location where a lifeguard can see both the shallow area of the main pool and the warm pool or hot tub"
- "Glare is very present throughout the facility"
- "The spray features add further complexity to surveillance"

Recommendations

Air in Hot Tub Jets

It is recommended that management remove the air from the jets in the hot tub. Aquatic facilities that have removed the air from their hot tub jets have found a significant increase in visibility through the water column. Infused air in the water creates significant visibility challenges and may impede lifeguards from seeing through the water column to the bottom of the pool.

Mimimum Number of Lifeguards

It is recommended that a minimum of 2 lifeguards be on the pool deck for controlled user groups (i.e. instructor lead activities, lane swim) and a minimum of 3 lifeguards be on the pool deck for uncontrolled activities (i.e. free swim, public swim). The facility is larger than 400 square meters and sightline challenges created by structural features at the facility.

Safety Supervision During Instructional Periods

It is recommended that instructional periods with more than 40 individuals in the water have lifeguard supervision (even if all instructors are certified Lifeguards).

Hot Tub Mirror

During the Lifeguard Positioning Analysis it was identified by lifeguards that the mirror around the hot tub is ineffective. It is recommended that management investigate alternate methods to provide surveillance around the hot tub. It is important that lifeguards are able to see all of the water within their surveillance system.

In Closing

Managing risk involves an analysis to identify, evaluate and mitigate potential risks. The Lifeguard Positioning Analysis assists in evaluating the effectiveness of lifeguard surveillance systems and is only one step of an effective risk management system. The Lifesaving Society recommendations included in this report are prepared for review and consideration by the City of Fort Saskatchewan.

It is the opinion of the Lifesaving Society that the existing lifeguard surveillance system faces a number of challenges based on the size of the facility and its usage. The Lifeguard Positioning Analysis confirmed this through various exercises with staff and identified recommendations and minor adjustments to the existing lifeguard surveillance system be considered for enhancement.

The City of Fort Saskatchewan has demonstrated an ongoing commitment to safety within their aquatic facility operations. The City of Fort Saskatchewan has worked closely with the Lifesaving Society utilizing the Society's expertise and opinion for a number of safety management services including a Lifeguard Positioning Analysis (2014), Lifeguard Positioning Analysis (2009), and a Comprehensive Aquatic Safety Audit (2018).

The Lifesaving Society would like to thank the staff who participated in the lifeguard positioning analysis, and commend the City of Fort Saskatchewan for continuing to take steps to ensure they provide a safe and enjoyable aquatic experience.

We are all in this together. The Lifesaving Society will continue to support and assist the City of Fort Saskatchewan as they work towards implementation of the Lifeguard Positioning Analysis recommendations.

Publications of the Lifesaving Society are available from any Branch office. Inquiries from outside Canada should be directed to the National Office.

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