

RISK

Playing It Safe

**Summer
2009
(Revised)**

Inflatable Amusement Rides, Mobile Rock Walls & Climbing Walls



**Michigan Municipal Risk
Management Authority
Parks & Recreation Advisory Committee**

PLAYING IT SAFE

INFLATABLE AMUSEMENT RIDES, MOBILE ROCK WALLS & CLIMBING WALLS

If you own, operate, or rent inflatables to private parties, closely follow the manufacturers' instructions and guidelines for operation and setup.

INTRODUCTION

Mobile inflatable rides and mobile climbing walls are customarily used at fairs, carnivals and festivals, and are also sometimes operated at private fairs and parties through rental agencies. Mobile inflatable rides and climbing walls may be used by participants of many ages, from children to adults.

MOBILE INFLATABLE RIDES

The Consumer Products Safety Commission (CPSC), investigating incidents over a three-year period, was aware of 9 incidents that resulted in 21 injuries on large slide-type inflatable devices and 33 incidents that resulted in 33 injuries on bounce-type inflatable devices.

A member of MMRMA recently experienced an unfortunate incident with a Titanic ship-type inflatable slide, on which some children were

injured. After investigating this incident, it was discovered that there have been several similar occurrences around the U.S. and in other countries with this particular type of inflatable slide, which does not come under any State of Michigan rules or regulations regarding rides.

MMRMA's Parks and Recreation Advisory Committee and the Risk Control Department recommend that if your organization owns, operates, or rents inflatables to private parties, you closely follow the manufacturers' instructions and guidelines for operation and setup. Inspection procedures and guidelines for safe setup and operation of inflatable rides may vary from manufacturer to manufacturer.

In addition, the CPSC has developed inspection procedures and guidelines for safe setup and operation of inflatables. Inflatable rides may vary from ride to ride or manufacturer to manufacturer, so please follow manufacturer's requirements. The CPSC staff recommends the following additional guidelines:

1. Minimum number of operators on large inflatable slides over 15 feet tall is 2.
2. Minimum number of operators on inflatable bounces and other small rides under 15 feet tall is 1.
3. Maximum recommended weight per passenger is 200 lbs; also follow manufacturer's recommendations.
4. DO NOT exceed manufacturer's requirements for maximum total loads for individual rides.
5. Follow the owner/operator's manual for site layout, inflation procedures, ropes, tethers,





Anchor ropes, tethers, or tie-downs should be attached to a secure device or permanent structure and attached so that they cannot slip off the top of their stake during use. DO NOT attach anchors to motor vehicles.



tie-downs, anchors, temperature range, maximum number of riders, size of riders, electrical codes, daily operation, daily inspection, washing, repair, deflation, drying, storage, and transportation.

6. ALWAYS anchor rides per manufacturer's requirements and instructions.
7. The on-ground anchor weight used for various inflatable rides range from 75 pounds (for bounce-type rides) to 500 pounds (for slide-type rides) for each recommended anchor position. This weight range strongly indicates that an inflatable ride's operator

should follow the ride manufacturer's recommendations for proper anchoring and placement of each type of stake.

8. Place anchors at all of the manufacturer's required positions, at all times, for both indoor and outdoor use. These anchors can be straight stakes, screw stakes, ground weights, or sandbag ground anchors. Straight stakes range from 30 inches to 42 inches in length, with at least 75% of that length in the ground (required total length is dependent on setup surface). The exposed ends of the stakes should be covered to prevent a tripping hazard.
9. Anchor ropes, tethers, or tie-downs should be attached to a secure device or permanent structure and attached so that they cannot slip off the top of their stake during use. DO NOT attach anchors to motor vehicles.
10. Ropes, tethers, and tie-downs should be sufficiently strong to resist breakage during use. CPSC staff recommends that the buyer purchase half-inch diameter solid-braided polypropylene rope with a minimum of 3700 lbs. tensile strength or 370 lbs. safe working load or follow manufacturer's requirements, whichever is greater.
11. Identify and use the number and location of tie-downs specified by the manufacturer.

To ensure a safe experience for climbers, management should ensure that the equipment is completely built, installed, and maintained to current industry safety standards and that all climbers are given proper instruction.

DO NOT use non-load-bearing positioning loops as tie-downs or anchor points.

12. Do not use inflatable rides above wind speeds that exceed the manufacturer's recommendation. Various manufacturers recommend maximum wind speeds from 15-25 mph, depending on the ride. In any case, ALWAYS unload and deflate all inflatable rides when wind speed exceeds 25 mph.
13. Manufacturers and operators should ensure that inflatable rides do not collapse onto riders if the power blower(s) inflating the ride should unexpectedly fail. Inflatable rides need a sealed chamber to prevent the rapid collapse of ceilings and walls onto riders in such an instance. Inflatable slides over 15 feet tall should not deflate and collapse, dumping riders to the ground.

In addition, the CPSC recommends that rental companies provide renters with the following materials:

1. A training program for the renter for the proper operation of the inflatable ride.
2. A copy of the operation manual (and/or videos, training manuals) for each rental period.
3. A release statement signed by the renter documenting that he has received and understands the ride operating procedures.

For further information, go to cpsc.gov.

MOBILE CLIMBING WALLS

According to industry estimates, there are thousands of varied size mobile rock walls and climbing walls being used in the U.S. A tragic incident occurred in Columbia, Missouri, in



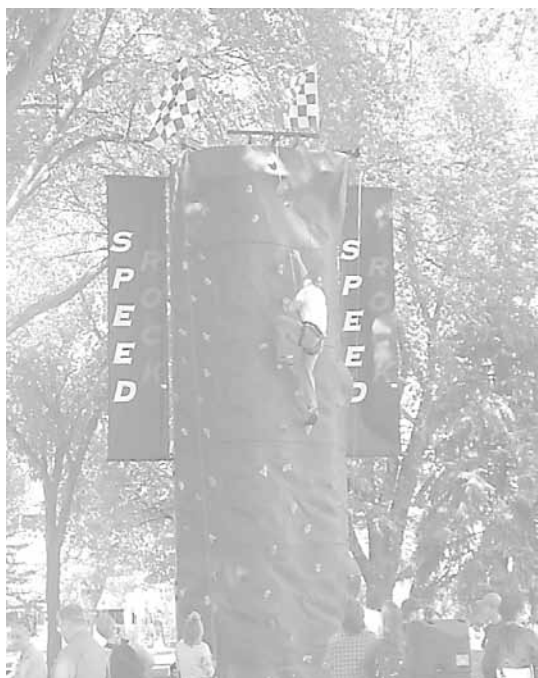
July 2003. A 22-year-old female was climbing a mobile rock wall when the auto-belay cable attached to her harness broke. The victim fell to the concrete below and died. The cable had a rubber sheath over the cable but underneath the sheath, the cable was frayed.

RISK CONTROL FOR CLIMBING WALL

Climbing walls are becoming more popular and provide a great recreational experience that provides fitness, teamwork, and self-confidence in the climber. Climbing walls are not without risks. To ensure a safe experience for climbers, management should ensure that the equipment is completely built, installed, and maintained to current industry safety standards and that all climbers are given proper instruction. The climbers should understand and agree to follow those instructions, and equipment should be used only under proper supervision.

- Staff should be trained in how to safely use the wall and how to instruct students.

- Staff should be trained in first aid/CPR. Immediate response will reduce the severity of the injury.
- The climbing wall should only be used when supervised by trained staff. No unauthorized use should be allowed. A sign to that effect should be posted in the immediate area. The wall should be secure and inaccessible for unauthorized use.



- The anchoring or weight of the staff person should be enough to manage participants on belay.
- Rules should be developed and posted for climbers' conduct while climbing the wall.
- A written emergency response plan should be developed for an incident at the climbing wall. Local emergency services should be contacted and the plan provided to assist them in responding quickly.

- If you have an outside climbing wall, discontinue use in severe weather such as rain, lightning, or high winds.
- The area where a climber could fall should have a safety fall surface to help cushion the landing.
- Climbing walls should be designed to the most current industry standards.
- Develop a written inspection program for the climbing wall and equipment. The inspection should be documented.
- Daily inspection of the cables, harness, ropes, handholds, belay systems, and all equipment related to the climbing wall should be conducted.
- Helmets should be required for all climbers and staff when using or working around the wall.
- Climbers should sign a release of liability waiver releasing your community prior to using the climbing wall.
- The area should be controlled to prevent unauthorized use —chained off, room locked, or equipment covered with panels secured to a height of 8 -10 feet — any time the wall is not supervised.
- All accidents and near misses should be reported immediately to whoever is specified in the emergency plan to receive such reports. Accidents should be documented and written reports filed in accordance with facility procedures.

These are a few general areas of concern. Each climbing wall is unique, so specific additional policies and procedures may be needed.

Develop a written inspection program for the climbing wall and equipment. The inspection should be documented.



The CPSC recommends closely inspecting climbing walls and all equipment in accordance with manufacturers' instructions and guidelines for operation, repair, maintenance, and setup.

In addition:

- Examine auto-belay cables, especially near pulleys, for wear, broken wires, “fish hooks” (burs or broken strands of wire cable), and deformation.
- Lift or slide the plastic or rubber sheath over the auto-belay cable on the harness end and examine for wear, corrosion, or broken wires, and replace cables if any are worn, or have broken wires or “fish hooks.”
- Follow the owner/operator’s manual on repair, maintenance, and parts replacement.
- Inspect auto-belay cables daily for “fish hooks,” wear, or corrosion, and replace annually or after 10,000 documented cycles, or earlier if necessary.
- Examine carabiners, swivels and rings for proper functioning and locking, and replace those not functioning properly.

- Examine harness for wear and tearing and replace if necessary.
- The maximum weight per passenger is 250 lbs., or per manufacturer's recommendations.
- Make sure the required number of operators is present on climbing walls.
- Do not exceed manufacturer's requirements for maximum loads for individual walls.

CONCLUSION

This safety brochure is intended to inform MMRMA members of the hazards involved with mobile inflatable rides and climbing walls and the potential for an incident that might result in a claim for damages. Following the basic guidelines in this safety brochure will help to ensure success in your endeavors.

It is recognized that these guidelines cannot be, nor are they meant to be, all-encompassing. Each community will have its own unique characteristics. Issues of personal safety, property protection, and liability risk avoidance may require additional consideration.

Questions relating to inflatable amusement rides and mobile rock walls and climbing walls can be directed to the CPSC in Washington, DC.

For further assistance, contact MMRMA's Risk Control Department.

The Climbing Wall Association (CWA) is a good resource for safety information:

<http://www.climbingwallindustry.org/>.

They have two publications that may be of interest:

Industry Practices: A Sourcebook for the Operation of Manufactured Climbing Walls, Third Edition, and *General Specification for Design and Engineering of Artificial Climbing Structures, First Edition*.



CITY OF LIVONIA
Department of Parks and Recreation
Community Recreation Center

CLIMBING WALL RELEASE & WAIVER FORM

(Please print)

Household Name
Climber's Name Birth Date Age
Address Apt. #
City Zip
Email
Home Phone Work Phone
Emergency Contact Emergency Contact Phone

In consideration of being permitted to take part in the activity, or utilize the climbing wall as set forth herein, I expressly agree as follows: I hereby acknowledge that the activity set forth herein contains dangers and risks and may result in injury to the participant. I hereby assume all risks of personal injury, death, and property damage from any causes whatsoever arising while my child or I are participating in such activity.

I hereby acknowledge and agree that the activity of rock climbing and the use of the Livonia Community Recreation Center's Climbing Wall has inherent risks. I have full knowledge of the nature and extent of all the risks associated with rock climbing and the use of the wall, including but not limited to:

- 1. All manner of injury resulting from falling off the climbing wall and hitting holds, faces and projections, whether permanently or temporarily in place, or the floor;
2. Rope abrasion, entanglement and other injuries resulting from activities on or near the climbing wall such as, but not limited to, climbing, belaying, rappelling, lowering on rope, rescue systems, and any other rope techniques;
3. Injuries resulting from falling climbers or dropped items; such as, but not limited to, ropes or climbing hardware;
4. Cuts and abrasions resulting from skin contact with the climbing wall;
5. Failure of equipment, whether issued by the Livonia Community Recreation Center or of my own property, including but not limited to ropes, slings, harnesses, climbing hardware, anchor points, or any part of the climbing wall structure;
6. Muscle strain, contusions and rope burns caused by belaying another climber.

Participants may be photographed while utilizing the facility, services, or participating in a Livonia Parks and Recreation Department program and said photographs, or likeness of me, may be used to publicize activities, as the district deems appropriate.

I have read all of the above statements and all of the policies of the Climbing Wall and promise to abide by them.
Signature Date
(Of participant or guardian if participant is less than 18 years of age)

FOR OFFICIAL USE ONLY Date Processed: Staff Initials:



Sample Guidelines for Climbing Wall Participation

Climbing activities are inherently dangerous. Special knowledge, training and equipment are required. Failure to follow established protocols increases the risk of injury and death. You are responsible for your own actions and decisions and the resulting outcomes. Following are climbing safety practices that are required by any user of the recreation climbing wall, boulder and associated equipment at _____.

- Climbing is permitted only when the area is open and monitored by the appropriate _____ recreation staff.
- All climbers must complete a climbing orientation and have completed and signed Acknowledgement of Risk and Release of Liability and Participation Agreement forms on file with _____ recreation.
- Closed shoes are required. Climbing shoes, athletic/tennis shoes and hiking boots are examples of acceptable footwear. Sandals, socks and bare feet are examples of unacceptable footwear.
- Bouldering is permitted only on the boulder and below specified line on the wall. Never boulder beneath another climber. A spotter and crash pad are recommended.
- Climbers must be roped and belayed through an authorized belay device, and belayers and roped climbers must wear harnesses, utilize proper belay technique and climbing commands, and double check each others' set up before every climb.
- Only chalk balls and water in sealable plastic containers are permitted in the climbing area.
- Unruly or unsafe conduct is grounds for removal from the facility. Examples include swinging on ropes, running and horseplay.
- Proper care of equipment is mandatory and includes no dropping/tossing of carabiners/belay devices and no stepping on ropes.
- Helmets are strongly recommended for top rope and lead climbing and belaying.
- Lead climbing is a privilege reserved for properly trained individuals registered with _____ recreation. Lead climbers must use proper equipment and techniques to minimize the possibility of injury. Practice lead falls are only permitted during supervised recreation lessons.
- Personal equipment may be used at the sole and exclusive risk of the owner of such equipment. _____ recreation reserves the right to inspect and/or refuse the use of any personal equipment.
- All climbers are asked to assist and encourage less experienced climbers and to inform others of any unsafe situation.
- Report any accident, injury or equipment damage to _____ recreation staff immediately.

Recreation reserves the right to withdraw climbing privileges from any individual permanently or for a specified time period for breach of contract in following the climbing wall safety practices or for any conduct that is deemed unsafe or inappropriate.

In consideration of my use of the recreation climbing wall, boulder and associated equipment at, I acknowledge that I have carefully read and agree to abide by the climbing wall safety practices detailed above.

Name (please print)

Signature

Date



(Municipality) Community Center Climbing Wall Safety Orientation and Belay Test

In order to climb or belay on the Community Center wall you must understand, demonstrate, and perform the following essential climbing skills and techniques on our roped climbs. You must also be trained and understand the safety measures and guidelines to use our auto-belay devices.

- Harness: Correct fitting and securing of a harness. Double back.
- Auto-belay: Correct security of auto locking carabiner to harness. Have verified each time you climb by staff or another previously certified climber.
- Tie-in: Proper figure 8 follow through with a safety backup.
- Anchors: Correct clipping of belayer into floor anchor.
- Belay technique: correct clipping into belay device, and rope feed and stop techniques for controlled belaying.
- Climber-Belay communication: The use of universal climbing signals that consist of the following:

Before Climbing:

- ON BELAY? Climber to belayer in the form of a question. Asking if belayer is ready.
- BELAY ON! Belayer to climber. Indicates belayer is ready. No slack in system.
- CLIMBING! Climber to belayer. Double-checking readiness of belayer.
- CLIMB ON! Belayer to climber. Indicating the go-ahead to climb.

While Climbing:

- Auto-belay: Make sure there is no slack in the webbing while climbing. If slack is present, down climb and discontinue use.
- UP ROPE! TENSION! Climber to belayer asking to take up slack in the rope.
- SLACK! Climber to belayer asking for more rope.
- ROCK! Climber warning for those below him to watch out, a hold broke or something is falling from the wall.

When finished at the top of the route or while climbing the route:

- Auto-belay: Let go of the wall, have hands and feet out, you will automatically descend.
- TAKE! Climber to belayer. Indicates climber's wish for belayer to hold him/her tight for a rest.
- LOWER ME! Climber to belayer. Indicates climber's wish for belayer to lower the climber in a slow and controlled descent.

When finished at the bottom of a route:

- Auto-belay: Pull down some slack, unclip carabiner from harness, re-attach to floor anchor. Do not let go of the auto belay webbing or carabiner. It will automatically retract and go up the wall in an uncontrolled manner and be irretrievable.
- OFF BELAY! Climber to belayer. Indicating "I'm done, you can stop belaying!"
- BELAY OFF! Belayer to climber. Indication climber is off belay and no longer protected by the rope.

I, as a climbing wall participant, will follow these guidelines or lose my privileges to use the climbing wall. I have read and understand the rules for the **(Municipality) Community Center Climbing Wall**. I assume full responsibility for my actions and will do my best to ensure my safety and the safety of others around me.

Print Name _____

Signature of test taker _____ DATE _____

Climbing Wall Staff Name and Signature _____

Date Certified _____



CLIMBING WALL RELEASE/INDEMNIFICATION OF ALL CLAIMS AND COVENANT NOT TO SUE

NOTICE: THIS IS A LEGALLY BINDING AGREEMENT. By signing this agreement, you give up your right to bring a court action to recover compensation or obtain any other remedy for any injury to yourself or your property or for your death, however caused, arising out of your engaging in indoor rock climbing and your use of the Climbing Wall, now or any time in the future.

ACKNOWLEDGMENT OF RISK

I HEREBY ACKNOWLEDGE AND AGREE that the sport of indoor rock climbing and the use of the Climbing Wall (hereinafter referred to as the Climbing Wall) has inherent risks. I have full knowledge of the nature and extent of all the risks associated with indoor rock climbing and the use of the Climbing Wall, including but not limited to:

- 1. All manner of injury resulting from falling off the Climbing Wall and hitting rock faces and projections, whether permanently or temporarily in place, or the floor;
2. Rope abrasion, entanglement and other injuries resulting from activities on or near the Climbing Wall such as, but not limited to, climbing, belaying, rappelling, lowering on rope, rescue systems, and any other rope techniques;
3. Injuries resulting from falling climbers or dropped items, such as, but not limited to, ropes or climbing hardware;
4. Cuts and abrasions resulting from skin contact with the Climbing Wall;
5. Failure of ropes, slings, harnesses, climbing hardware, anchor points, or any part of the Climbing Wall structure.

I further acknowledge that the above list is not inclusive of all possible risks associated with indoor rock climbing and the use of the Climbing Wall and that the above list in no way limits the extent or coverage of this release and covenant not to sue.

RELEASE/INDEMNIFICATION AND COVENANT NOT TO SUE

In consideration of my engaging in indoor rock climbing and my use of the Climbing Wall, I, _____, the undersigned user, agree that I and my heirs, distributees, guardians, legal representatives, and assigns will not make a claim against, sue, attach the property of, or prosecute The City of _____, any of its officers, partners, directors, members, employees, volunteers and all parties involved (all the foregoing listed being hereinafter designated "releasees") for any injury, death, or property damage occurring to me as a result of my participation in indoor rock climbing and my use of the Climbing Wall with The City of _____, whether caused by the negligence of The City of _____ or otherwise and whether my participation is supervised or unsupervised. In addition, I release and discharge The City of _____ and all of the other releasees from all actions, claims, or demands that I and my heirs, distributees, guardians, legal representatives, or assigns now or in the future may have for any injury, death, or property damage resulting from my participation in indoor rock climbing and my use of the Climbing Wall conducted by The City of _____.

I agree for myself and my heirs, distributees, guardians, legal representatives, and assigns that in the event that any claim for personal injury, death, or property damage shall be prosecuted against The City of _____, and/or any or all of the other releasees, I shall indemnify and save harmless The City of _____ and/or all of the other releasees from any and all such claims or causes of action by whomever made and wherever presented.



APPENDIX E (PART 2)

I hereby certify that I have full knowledge of the nature and extent of the risks inherent in indoor rock climbing and the use of the Climbing Wall and that I voluntarily assume the risks. I understand that I will be solely responsible for any loss or damage, including death, I sustain while indoor rock climbing and using the Climbing Wall and that by this agreement, I am relieving The City of _____ of any and all liability for such loss, damage or death.

I further certify that I am in good health and that I have no physical limitations which would preclude my safe indoor rock climbing and use of the Climbing Wall.

I further certify that my date of birth is _____ (month / day / year), that my present age is _____, and that I am therefore of lawful age (18 years of older) and otherwise legally competent to sign this agreement. I further understand that the terms of this agreement are legally binding and I certify that I am signing this agreement, after having carefully read it, of my own free will.

IN WITNESS WHEREOF, this instrument is duly executed at

_____, this ___ day of _____, 20___.

Parent / Guardian if user is under 18

Climbing Wall User's Signature

Climbing Wall User's Name, Printed Clearly

Witness' Signature

Witness' Name, Printed Clearly



Climbing Wall Safety Standards and Guidelines

- Consult maintenance department to ensure that your wall is mounted to a suitable and stable surface and verify that this surface is free of asbestos and other toxic materials.
- Develop and implement a required staff training program (including a signed verification of those trained) for all staff and/or teachers who will supervise activity on the wall. The program should include, but is not limited to:
 - Proper climbing techniques
 - Rules and regulations for the climbing wall
 - Mat setup and takedown procedures
 - Care and maintenance of the climbing wall
 - Required safety inspections and methodology for documenting and logging results
 - Curriculum guidelines and resources
 - Protocol for recording and reporting climbing wall injuries
- Restrict climbing to times when a certified, trained staff member is available to supervise the activity.
- Create safe landing surfaces for climbers by installing mats that are safety tested for climbing wall activities.
- Extend all landing surfaces (mats) to at least six feet away from your climbing wall.
- Require that all climbers adhere to prescribed wall safety guidelines. (The Red Relief Safety line clearly indicates the safe climbing zone).
- Require that climbers remove all jewelry, watches, and other risk-promoting apparel prior to climbing.
- Require that students wear shoes suitable for physical activity while climbing on the wall.
- Carefully monitor and supervise climbing wall activities. Choose activities that are safe and age-appropriate.
- Never leave climbing wall unattended.
- Eliminate access to the wall during unsupervised hours through the use of innovations such as mat locking systems and “Closed to Use” signs. Post a minimum of 3 signs at the mats that read: “This wall is closed and may not be used without approval of the operator and the presence of a trained supervisor.”
- Develop, communicate, and enforce rules for your climbing wall. Post these rules near the wall and routinely review them with participants.
- If you set your own climbing routes, make sure that the level of challenge created is safe and appropriate for the age and experience level of climbers. Check to ensure that the spacing of holds does not create a risk for pinching or entrapment of fingers, hands, arms, or legs. Make sure that the handholds are comfortable and hand/tendon friendly.
- If your climbing wall is constructed in a multi-use room or gymnasium, make sure the wall is protected with vertically hanging mats that are secured and locked to the wall and are thick enough to protect climbers who crash up against it.

Maintenance And Ongoing Inspection Of Your Horizontal Wall

- Prior to each climbing wall session, check to make sure that landing mats are carefully placed on the floor surface adjacent to the wall and are free of wrinkles and irregularities. Check to verify that mat seams are closed to ensure an even surface that protects against tripping or stumbling.
- Maintain your climbing wall on a regular basis. Routinely inspect anchorage of plywood panels to wall. Check all holds and tighten those that are loose. Instruct climbers to report any holds that move or spin. Keep a written log documenting all wall maintenance.
- Routinely check your holds for rough edges or fractures. Remove and replace all compromised holds.
- Replace (if feasible) or repair any climbing wall equipment that is in poor condition.
- Close the wall to climbers if any repairs are warranted.
- Maintain a climbing wall maintenance log. A certified staff member should complete all entries in this log. Record inspector's name, conditions found, repairs made or reported, date of inspection, and comments. If any panel or panel part is loose or pulling away from the wall, immediately close the wall to further use and request maintenance, inspection, and repair.

Climbing Wall Rules:

- Supervision is required.
- Six-foot safety mats must be in place.
- Remove all jewelry.
- Shoes are required for climbing.
- Climb safely: no feet above the red line.
- Step down from the wall. No jumping.
- Step away from the mat upon completion of your climb.
- Avoid walking underneath other climbers on the wall.
- Maintain at least three points of contact with the wall at all times.
- Have fun!

MMRMA Parks & Recreation Advisory Committee

Alan Buckenmeyer (Chair)
City of Rochester Hills

Darwin Baranski
Bay City Parks & Recreation

Jeff Gehl
Ingham County Parks & Recreation

Gary Huizenga
Kent County Parks

Karen Kapchonick
City of Livonia Parks & Recreation

Ken Elwert
Lapeer County Parks

Rebecca Rynbrandt
City of Wyoming

Jerry Jaloszynski
Clinton County Green Space Commission

Bill Deming
City of Portage

Bruce Ross
Van Buren Township

Brian Bailey
Berrien County Parks & Recreation Commission

Mike Curle
Redford Township

Debbie Bilbrey-Honsowetz
Canton Leisure Services

Mike Turk
Independence Township

Bill Wright
City of Farmington Hills

Gary Brown
Mecosta County Parks & Recreation

Dan Patton
Eaton County Parks

Mike Rhyner
Executive Director, MMRMA

Matthew Sharp
St. Clair County Parks & Recreation

MMRMA Committee Liason

Terry VanDoren
Risk Consultant, MMRMA

A publication for members of



14001 Merriman Road, Livonia, MI 48154
(734) 513-0300 • www.mmrma.org