

## **RWU Manhole Cover Lift Policy**

The purpose of the Roger Williams University (RWU) Manhole Cover Lift Policy is to minimize the potential for injury during manhole cover removal / replacement operations. Lifting manhole covers is a known workplace hazard! The process is inherently dangerous and injuries are not uncommon.

Regulatory requirements for safe lifting and ergonomics at the workplace fall under the Occupational Safety and Health Act Section 5(a)(1) General Duty Clause. The Occupational Safety and Health Administration (OSHA) uses the National Institute for Occupational Safety and Health (NIOSH) *Work Practice Guide for Manual Lifting* (see Appendix A) to enforce the employer safe lifting requirements under the General Duty Clause. The NIOSH guide provides a formula for determining the recommended maximum weight that may be lifted under specific lifting conditions. RWU uses the NIOSH *Work Practice Guide for Manual Lifting* for evaluating lifting requirements by university personnel.

Due to the inherent risk of injury when lifting manhole covers, RWU employees will use the magnetic manhole cover lift procedure listed below for ALL manhole cover removals and replacements. No RWU employee will perform this procedure without first receiving on-the-job training.

Under no circumstances will a RWU employee remove / replace a manhole cover without use of the magnetic manhole lifts system unless one or all of the following conditions exist:

1. Removal / replacement of the manhole cover lift is of a time-sensitive nature to prevent the injury and / or death of a RWU community member

AND / OR

the manhole cover is located in an area such that it is not physically possible to use the magnetic manhole cover lift, or the manhole cover lift is inoperable for an extended period of time.

- (a) Alternate mechanical means must then be deployed per the procedure below (“Alternate Procedures Using a Vehicle and Connector”). The alternative method uses an RWU vehicle and a connection device to lift the manhole cover. Approved vehicles (collectively referred to as “Vehicle”) include RWU utility vehicles such as the front end loader and the skid-steer loader, the forklift, and the maintenance truck with the Ventura CT2005 crane (Appendix C). Approved connection devices (collectively referred to as “Connector”) include weight-rated chains, Lift-All straps (Appendix B) and the wire rope / hook included on the CT2005 crane.

2. Approval from either the Assistant Directors of Environmental Health and Safety or the Director of Facilities Management to remove the manhole cover without the magnetic manhole cover lift system.

Use of the magnetic manhole cover lift system follows the RWU policy that, whenever possible, engineering controls will be put into place over administrative controls to prevent accidents and injuries.

#### Magnetic Manhole Cover Lift Procedure

1. If manhole cover removal is required to access a confined space, complete a Confined Space Entry Form and follow all confined space entry procedures per the RWU Confined Space Entry Policy. Only confined space entry trained personnel can act as a confined space entrant, attendant, or supervisor.
2. Post traffic control at the entry site as necessary (traffic control arrangements will be coordinated and in place prior to any manhole cover removals and will remain in place until manhole cover replacement).
3. Post a Safety Observer for the duration of the cover removal. The Safety Observer will have no other duties than observing, following, and enforcing the requirements of this procedure.
4. The driver will back vehicle over manhole using the video camera system mounted on the truck cab dashboard.
5. Using the remote control device, lower magnet onto manhole cover.
6. Activate magnet control and lift manhole cover using the magnetic control device.
7. Drive vehicle away from manhole with manhole cover on the magnetic (DO NOT attempt to perform any work under the raised manhole cover while attached to magnet prior to moving the vehicle away from the manhole).
8. When work is completed, the Safety Observer will resume manhole cover lift procedure observation and enforcement duties.
9. The driver will back vehicle over manhole using the video camera system mounted on the truck cab dashboard.
10. Lower manhole cover into place using the remote control device only. The Safety Observer will visually confirm its proper placement over the manhole. Personnel must never “adjust” the manhole cover’s position by kicking it, picking it up, using hand tools for leverage, etc.
11. Release the magnetic control and raise magnet.

#### Alternate Procedure Using a Vehicle and Connector

1. If manhole cover removal is required to access a confined space, complete a Confined Space Entry Form and follow all confined space entry procedures per the RWU Confined Space Entry Policy. Only confined space entry trained personnel can act as a confined space entrant, attendant, or supervisor.
2. Post traffic control at the entry site as necessary (traffic control arrangements will be coordinated and in place prior to any manhole cover removals and will remain in place until manhole cover replacement).

3. Post a Safety Observer for the duration of the cover removal. The Safety Observer will have no other duties than observing, following, and enforcing the requirements of this procedure.
4. Inspect and attach appropriate weight-rated Connector to the manhole cover at the connection sites. Attach Connector to Vehicle as necessary.
5. All personnel must back away to either side of the Vehicle, out of the movement radius of the Vehicle's bucket, forks, or crane. The Vehicle operator must not initiate movement until Safety Observer notifies him / her that all personnel are outside of the Vehicle's bucket, forks, or crane movement radius, and that Connectors are correctly attached at both Vehicle and cover attachment locations.
6. Vehicle operator lifts the manhole cover and places the manhole cover adjacent the manhole entrance, such that it will not interfere with confined space entry equipment or other equipment, or pose a trip hazard for employees (DO NOT attempt to perform any work under the raised manhole cover prior to moving the cover away from the manhole and placing it on the ground). Vehicle operator then turns off Vehicle.
7. When work is completed, Safety Observer inspects Connector attachments to manhole cover and Vehicle. Safety Observer checks to make sure all personnel out of the swing radius of the Vehicle, and signals to the Vehicle operator to lift the manhole cover. Operator lowers manhole cover over the manhole.
8. Vehicle operator ceases movement and turns off Vehicle.
9. Safety Observer visually confirms cover's proper placement over the manhole. Vehicle operator may not "adjust" the manhole cover's position while any personnel are within the movement radius of the Vehicle's bucket, forks, or crane. Personnel must never "adjust" the manhole cover's position by kicking it, picking it up, using hand tools for leverage, etc.

Questions regarding the RWU Manhole Cover Lift Policy should be directed to the Office of Environmental Health and Safety at 401-254-3189.

**Adopted: 16 March 2010**

**Revised: 19 July 2011**

**APPENDIX A**  
**NIOSH WORK PRACTICE GUIDE FOR MANUAL LIFTING**  
As taken from [www.osha.gov](http://www.osha.gov) 19 July 2011

See attached PDF

**APPENDIX B**  
**LIFT-ALL WEB SLINGS CATALOG AND TECHNICAL MANUAL**  
As taken from [www.lift-all.com](http://www.lift-all.com) 19 July 2011

See attached PDF

**APPENDIX C**  
**VENTURO TRUCK MOUNTED CRANES CT2005**  
**TECHNICAL SPECIFICATIONS SHEET**  
As taken from [www.venturo.com](http://www.venturo.com) 19 July 2011

See attached PDF