Safety Tips for Opening catch basin lids
Revised Sep 17, 2012
What could go wrong?

- Musculoskeletal injury risk factors
  - Awkward posture
  - High force

- Unexpected events
  - Tool slips from lid during lift
  - Lid accidentally drops DURING lift
  - Lid accidentally drops AFTER lift
  - Tool breaks during lift
  - You fall onto pick axe
  - Lid is stuck
Background information: Where to lift?

- Reduce force required by lifting far from hinge.
Where’s the hinge?
Hinge side
Lift far from hinge

- Insert tool into lid as far as possible from hinge
- Handle pointing away from hinge
- Hands as far away from hinge as possible
Problem?

Tool inserted too close to hinge
Handle NOT pointing away from hinge

hinge
Problem?

• Obstruction on non-hinge side
• Not possible to have tool inserted far from hinge with handle pointing away from hinge
• Ask supervisor for assistance
• How would we lift it?
• 2 people?
• Skid steer?
• Further research required
Sideways lift or forward lift?
Sideways lift or forward lift?

- There may not be a single correct way
- May be subject to individual preference
- Forward lift
  - Hands closer to spine
  - Less twisting
- Further research required
1 or 2 hand lift?
1 or 2 hands?

- There may not be a single correct way
- May be subject to individual preference
- 1 hand lift
  - free hand can support upper body during beginning of lift
- Further research required
Can you spot the differences?
Can you spot the differences?
Closing the lid, push with foot
Closing the lid, using tool

- Remove tool from lid
- Stand on hinge side
- Push with tool
Work Safe: Expect the “unexpected”

Unexpected Events
Tool slips from lid during lift
Tool slips from lid during lift

- Insert tool as far as possible into lid
- Use wide end of tool, if possible
- This will also minimize risk of damage to tool

Wide end

Narrow end
Lid accidentally drops DURING lift

- If lid starts to drop, don’t try to remove tool
- Let go
Pelham, ON (2012)
One worker lifted the lid of a catch basin with a pickaxe so another worker could apply tape to the basin.
While the second worker's hand was in the basin, the lid slipped from the pickaxe and crushed that worker's hand.

Lid accidentally drops AFTER lift

Make sure lid is open past 90 degrees
Lid accidentally drops AFTER lift

- If lid is NOT open past 90 degrees
- Dirt may be preventing this
- Close lid, clean hinge and try again
Tool breaks during lift

- Inspect tool for damage
- Bent pick
- Cracked handle
- Use wide end to minimize risk of damage to tool
You fall onto pick axe

Keep face away from pick end of tool
Lid is stuck. Need to keep it clean
Loosening techniques

Scrape edges

Bang lid
Questions

Let us know your ideas for improving this task
Task Improvement: Address what could go wrong

Musculoskeletal injury risk factors
- Awkward posture
- High force

Unexpected events
- Tool slips from lid during lift
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Task Improvement:
Interventions that have been suggested

- Description
- Author(?)
- Status
Manhole cover lifters (rejected)

- In general, the manhole cover lifters we tested didn’t work well with catch basin lids
- Lever style lifters are designed for lifting one end of the cover, then sliding it along the ground
Manhole cover lifters (rejected)

Magnet style lifters would lift the cover vertically and roll it away

- This would tend to lift the catch basin lid off of its hinge
- Even with the manhole covers, rolling the cover away was difficult when there was a slope or rough terrain (e.g. grass)
Manhole cover hooks don’t allow the hands to get as far away from the hinge as the pickaxe does.
Next steps

• Living document, continuous improvement, review
• How to make content accessible to staff
  • Meetings?
  • Binder?
  • Postings?
• Other tasks that need to be analyzed