

# Locating and Planning Cistern Installations for Stormwater Management

David McDonald Seattle Public Utilities Installing Rain Gardens & Cisterns Trainings for contractors, 11/3/2011

For more information, see the Cistern factsheet and other resources at <u>www.seattle.gov/util/rainwise</u>





## Is this a good site for a cistern?

A cistern installation needs:

A level location near a downspout, outside (not inside building)
 Ø Don't block doors, windows, vents, or utilities accesses
 Discuss location with neighbor when close to property line

☑ A solid base – concrete slab, or 6" of packed 3/8 crushed rock

- An approved place to **discharge the overflow**:
  - To a rain garden
  - Disperse into landscape at approved distance from buildings
  - <u>Or</u> reconnect overflow to sewer (reconnect <u>above ground</u>, where downspout was cut off, to avoid requirement for DPD side sewer permit if below-ground)

✓ No setbacks or DPD review required as long as cistern is <u>less</u> <u>than</u> 4.5 ft. tall, 4 ft. wide, or 600 gallons in size.



### DPD rules re cistern permitting

- "a. Standalone cisterns or connected systems shall be allowed without setback restrictions if each cistern is less than 4.5 feet tall excluding piping, less than 4 feet wide, and the system's total storage capacity is no greater than 600 gallons."
- "b. Larger cisterns or systems may be permitted in required yards provided that they do not exceed ten percent coverage in any required yard, and they are not located closer than 2.5 feet from a side lot line, 20 feet from a rear lot line or centerline of an alley abutting the rear lot line, or 15 feet from the front lot line."

#### Rain Wise Managing Storm Water at Home

## Other Cistern Considerations

- Talk to neighbors, consider appearance, screening
- Cistern size and type: heavy polyethylene plastic usually best
  Shop agricultural suppliers, see RainWise website
- Rainwater harvesting, outdoor use:
  - Locate where hose and flow will reach landscape uses
- Rainwater harvesting, indoor use: permits required!
  - Read DPD CAM 701 Rainwater Harvesting for Beneficial Use
  - Comply with Health Dept. code <u>Rainwater Harvesting and</u> <u>Connection to Plumbing Fixtures</u>
  - See these and other design resources at SPU's Rain Water Harvesting page, linked off <u>www.seattle.gov/util/rainwise</u>
- Additional requirements if cistern is for stormwater code (building permit) compliance, see link to Seattle *Flow Control Manual* on RainWise website



Pre-construction site inspection (for projects seeking reimbursement by SPU)

SPU inspector must verify on-site, prior to construction:

- Appropriate location:
  - not blocking windows, vents, utilities
  - setbacks: see DPD rule on previous slide, but be sure to allow for ingress and egress
- Size: verify contributing area and cistern size
- Inflow conveyance from downspout to cistern
- Overflow and low-flow connection
  - $\blacksquare$  To a rain garden, <u>or</u>
  - ☑ Disperse into landscape at approved discharge distance, or
  - Reconnect to sewer