

# Resilience

## *Across the Rural to Urban Transect*

Jim Heid, FASLA  
**urban**green®

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# The Urban to Rural Transect



Image Credit: <http://transect.org/images/transect2.jpg>

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# Make Resilience Strategies Relevant to Community and Neighborhood Scale



# Example: Dealing with Floodwaters Rural



Flooded Farmlands  
Louisa County, IA

# Example: Dealing with Floodwaters Suburban



Lakemont Park,  
Bellevue, WA

# Example: Dealing with Floodwaters Suburban

## LAKEMONT STORMWATER SYSTEM PROTECTING LEWIS CREEK & LAKE SAMMAMISH

**Did you know this park has a special purpose?** It contains a stormwater treatment system that helps protect Lewis Creek and Lake Sammamish from the ongoing impacts of developed land in the Lakemont area.

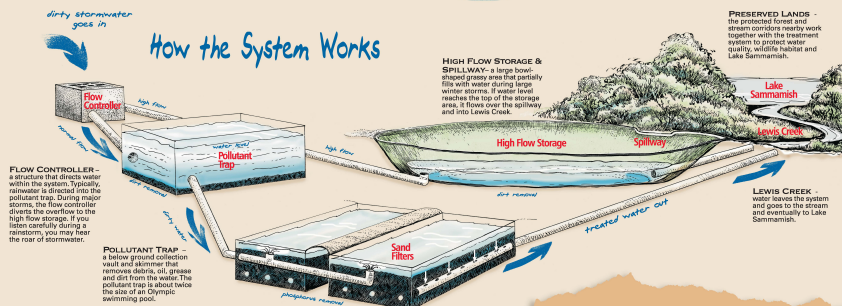
The system is a key part of Bellevue's commitment to the Lake Sammamish Water Quality Management Plan.

The fenced sections of the park and hidden facilities beneath your feet slow stormwater runoff to reduce flooding and streamside erosion and filter pollutants that can harm downstream waters. Pollutants are periodically removed by the system.



High Flow Storage during a large winter storm.

### How the System Works



### Protect Water Quality At Home

- Go organic to reduce the need for pesticides and fertilizers that pollute streams and lakes.
- Use compost and mulch to build healthy soil that absorbs runoff and filters contaminants.
- Wash your car at a car wash to prevent soap and dirt from flowing to your local stream.
- Pick up and properly dispose of pet waste to prevent pollution.

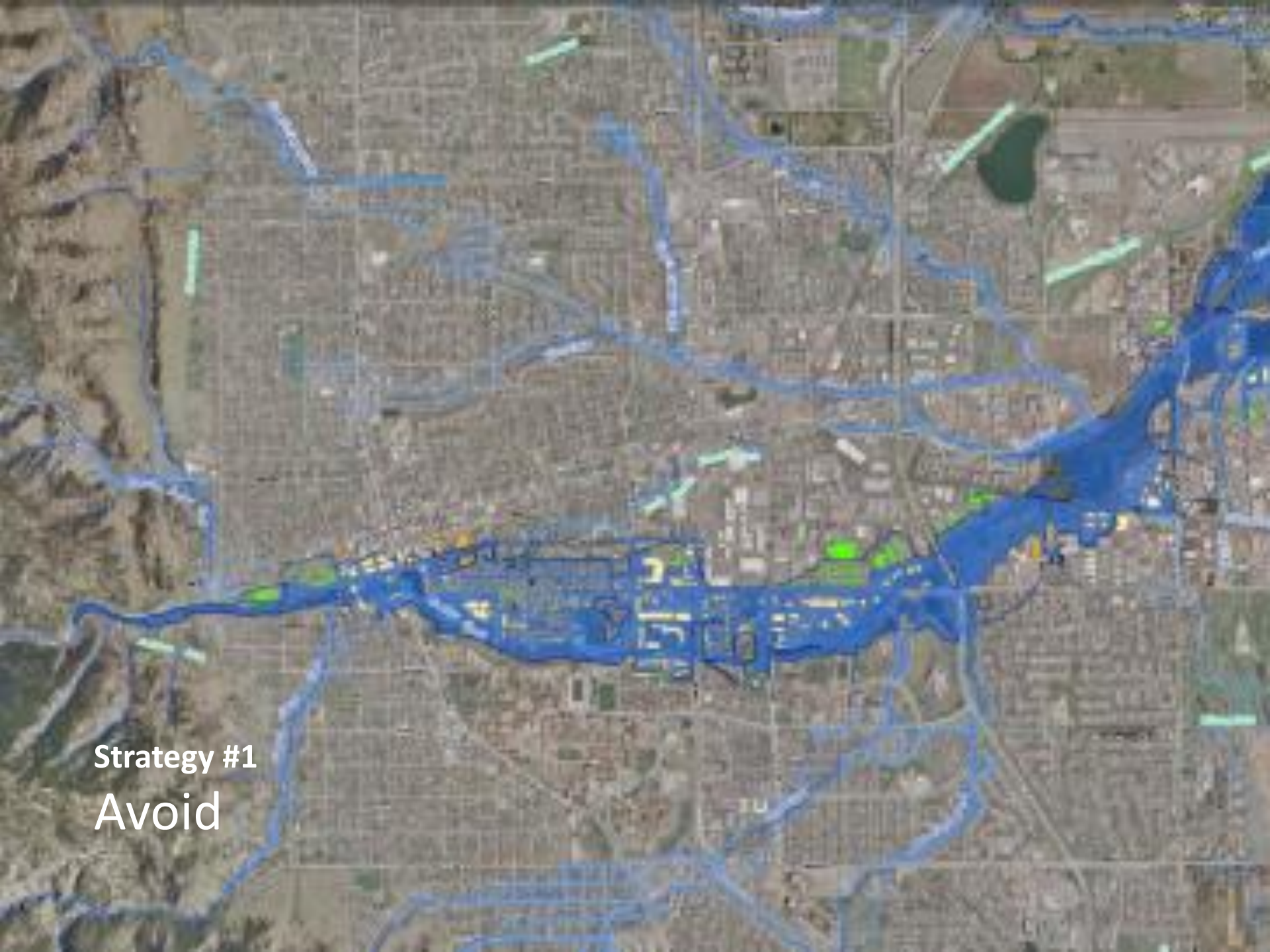
# Example: Dealing with Floodwaters Urban



Guadalupe River Park,  
San Jose, CA

# Strategies Across the Transect

*Image Credit:*  
ReBuild By Design  
BIG Group



Strategy #1  
Avoid



## Strategy #2

# Anticipate



### FULLY STOCKED WAREHOUSE

A 6,000-SF warehouse located on-site stores emergency supplies, including food and water.



### HURRICANE READY

The building envelope is constructed of glass, metal and concrete that can withstand Category 3 storms.



### BOAT ACCESSIBILITY

The ramp to the emergency department extends up to the second floor, doubling as a boat dock in the event of flooding.



### FLOOD OPERATIONAL

Mission-critical components, including the emergency department, are located at least 21 feet above base flood elevation.



### ROOM TO GROW

All single-occupancy rooms can be converted to double-occupancy to accommodate a potential increase in patients during an emergency.



### ENERGY EFFICIENT, EVEN IN CRISIS

Rooftops connected to a 1 million+ gallon rainwater storage tank maintain operation of cooling systems and reduce use of city water.



### HELICOPTER ACCESSIBILITY

A helicopter landing area on top of the parking garage accommodates Blackhawk-class helicopters.



### SELF-SUFFICIENT POWER

The central energy plant stores 320,000 gallons of fuel, enough to provide full power for one week, and the refill pump is located in a waterproof enclosure above the 500-year flood line.



### "UP-SIDE-DOWN" HOSPITAL

Primary utility distribution, which connects the hospital to the city power grid, is located on the fourth level to avoid flood damage.

Image Credit:  
NBBJ

# *The Generator Is the Machine of the Moment*

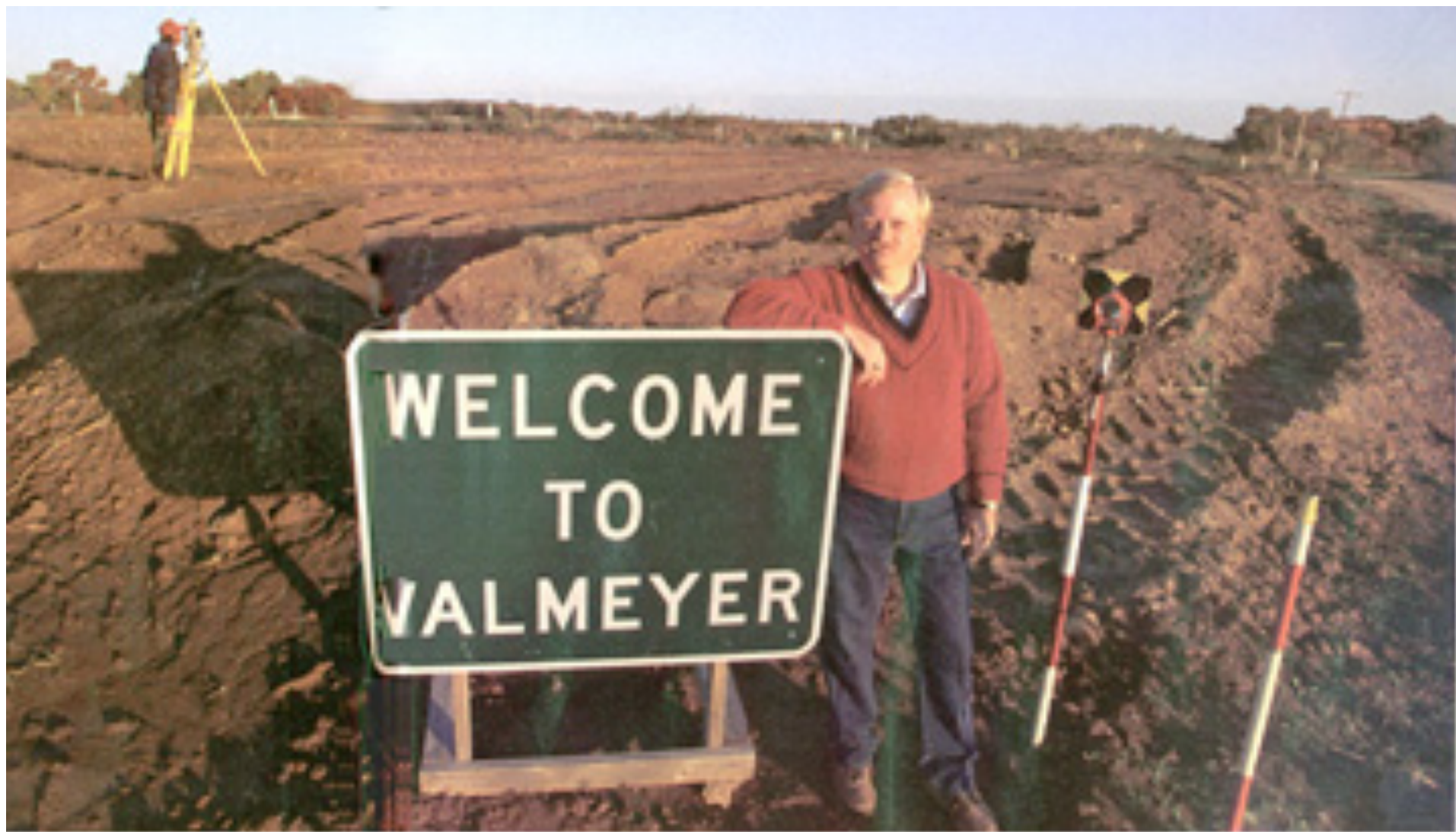
By JULIE SATOW JAN. 11, 2013



Strategy #3  
**Adjust**



Strategy #4  
**Armor**



Strategy #5

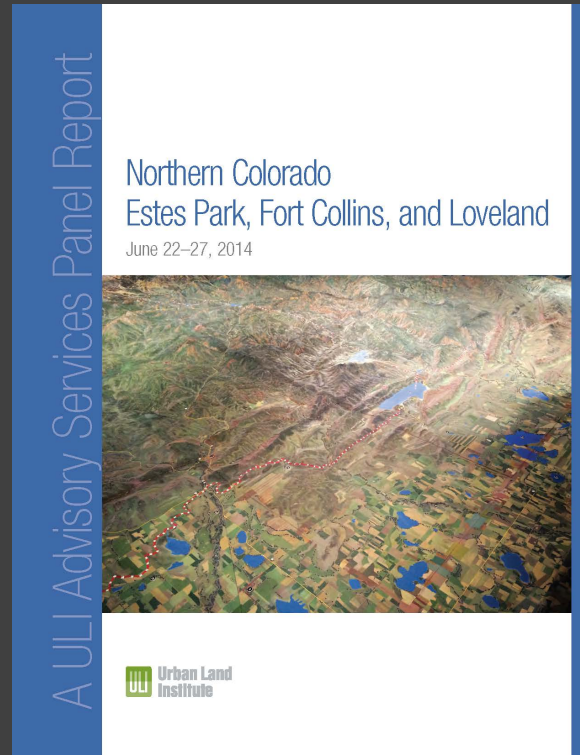
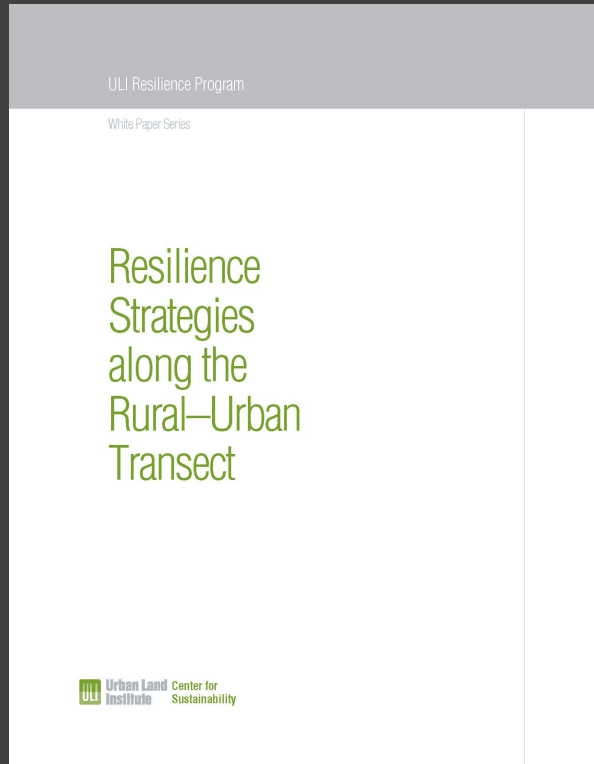
**Accept**

# Where to Focus?

## What Works?

- Physical design and creative preparation of changing needs
- Adapting and upgrading policies and procedures
- Creating maintenance and preparation regimines
- Creating the necessary social networks and systems
- Education, communication and transparency

# More Information



[www.uli.org](http://www.uli.org)

[www.urbangreen.net](http://www.urbangreen.net)

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