

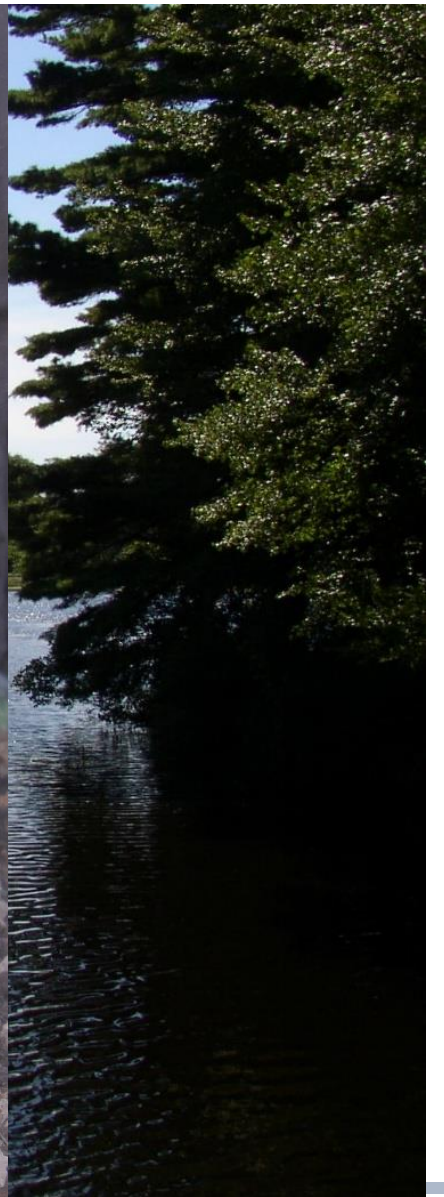
WATER RESOURCE PROTECTION PRINCIPLES AND STRATEGIES

Landscaping for Water Quality
March 2023 - Swanzey, NH

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N.H. Sea Grant and UNH Cooperative Extension





Principles

Behind Landscaping for Water Quality Benefits

1. STOP the sources of water pollutants
2. INFILTRATE runoff into the ground
3. FILTER pollutants from runoff with plants and soil microbes

1. STOP the Source



Photo: J. Peterson





Avoid applying anything that's not needed.



Green Grass Clear Water

 **Water quality friendly lawn care and fertilizer recommendations for northern New England**

According to a recent survey, it's likely that you and your neighbors believe having a lawn that is safe for the environment is very important.* However, some lawn care practices can create water quality problems. Excess nutrients (including nitrogen and phosphorus found in fertilizers) that run off our properties into local waterbodies can trigger algal blooms that cloud water and rob it of oxygen.

Many of us enjoy the time we spend working on our lawns and are willing to try new practices as long as our lawns continue to look good.* Here are some easy practices for creating and maintaining a truly healthy lawn – attractive and safer for the environment.



For additional resources, please visit:
www.extension.unh.edu/Sustainable-Landscapes-and-Turf



Simple Recommendations for Every Lawn



- 1. Choose the Right Grass Seed**
 - Consider limiting lawn area to locations where grass will grow easily and will actually be used for outdoor activities.
 - Choose grass varieties that require less maintenance. For northern New England, choose seed mixes with higher percentages of turf-type tall fescues, compact-type fall fescues and/or fine fescues. Choose mixes with smaller percentages of Kentucky bluegrass and/or perennial ryegrass.
 - In shaded areas, select shade-tolerant turf grasses like fine-leaf and tall fescues.
 - Up to 10% of total seed mix can be white clover to help fix nitrogen in soil naturally. Avoid clover if anyone in the household is allergic to bee stings.
- 2. Don't Overwater**
 - If irrigating, one inch of water per week is typically enough. Overwatering can lead to runoff and leaching of contaminants into groundwater.
- 3. Test Your Soil**
 - Sometimes adjusting the soil pH or organic matter are the only treatments needed to improve a lawn. If the soil test results come back as acceptable but your lawn is not, then check for other problems like pest infestations. Learn more at: bit.ly/Test-Your-Soil
- 4. Mow Smart**
 - Mow grass 3" or higher. Cut no more than 1/3 of the blade to encourage longer, stronger turf grass roots. Leave the clippings after mowing to provide a source of low release nutrients.

2. Promote INfiltration



Photo: J. Peterson



3. Promote FILTRATION

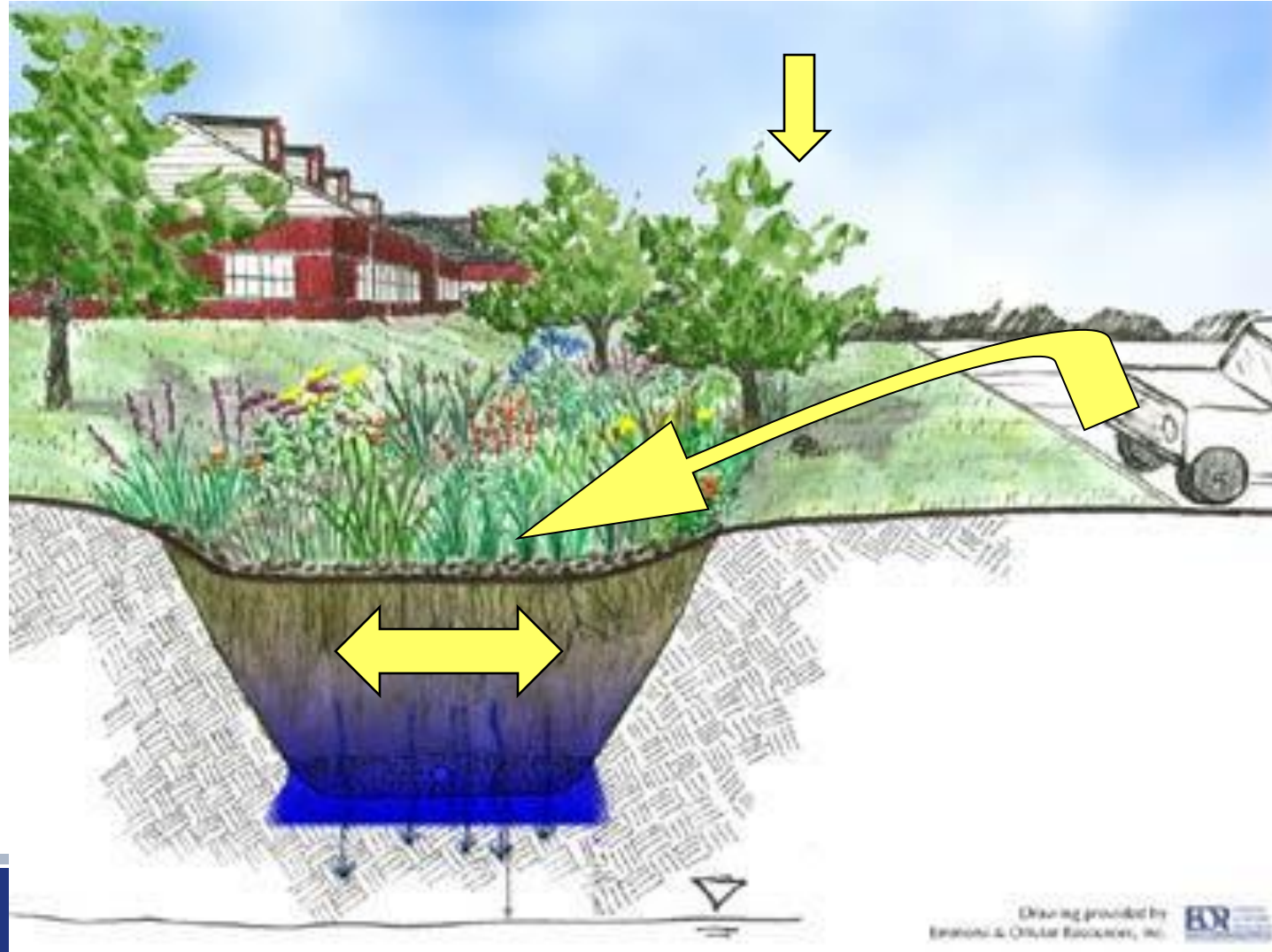
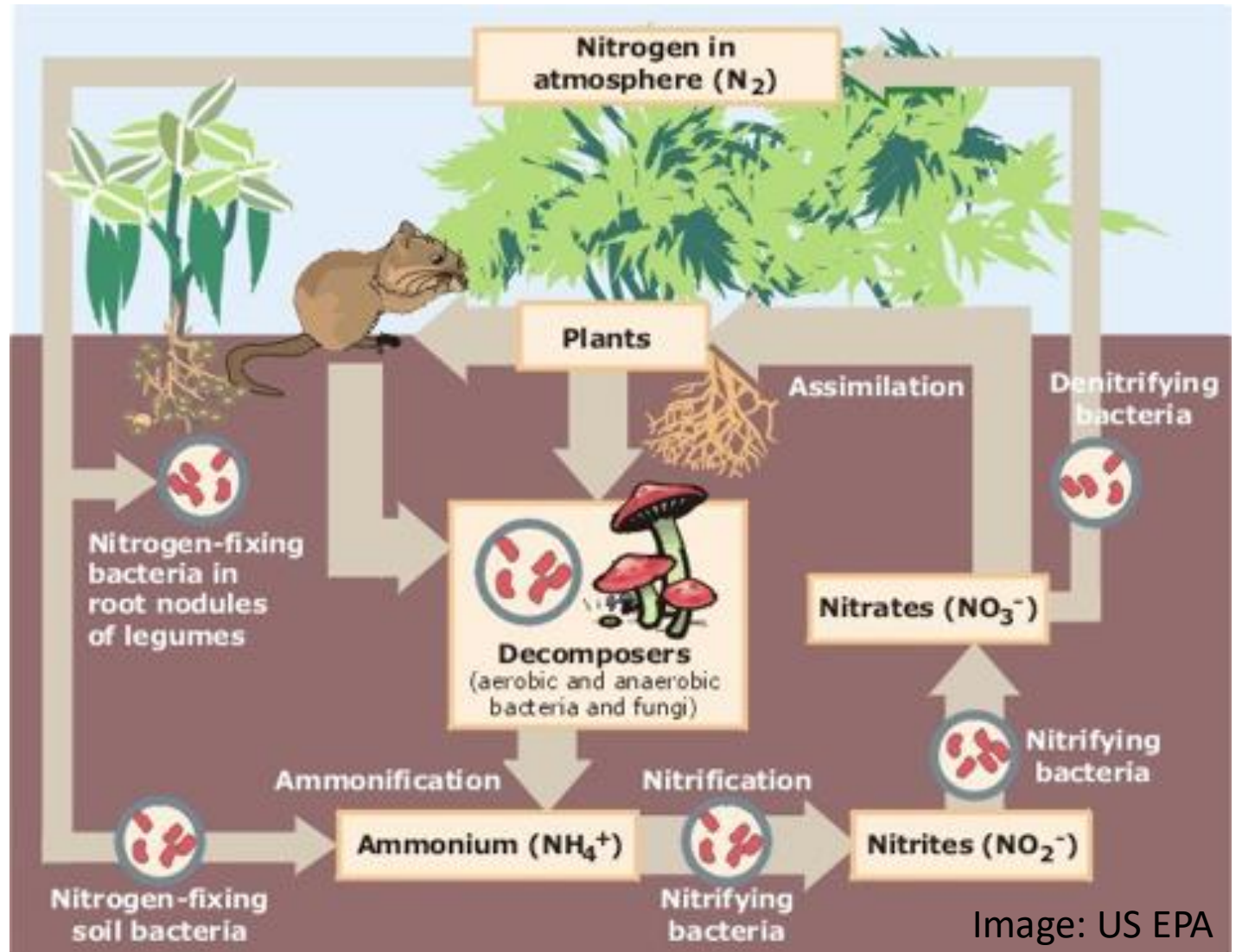




Photo: J. Peterson

Nitrogen Cycle



Pop Quiz!





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Regardless of scale...



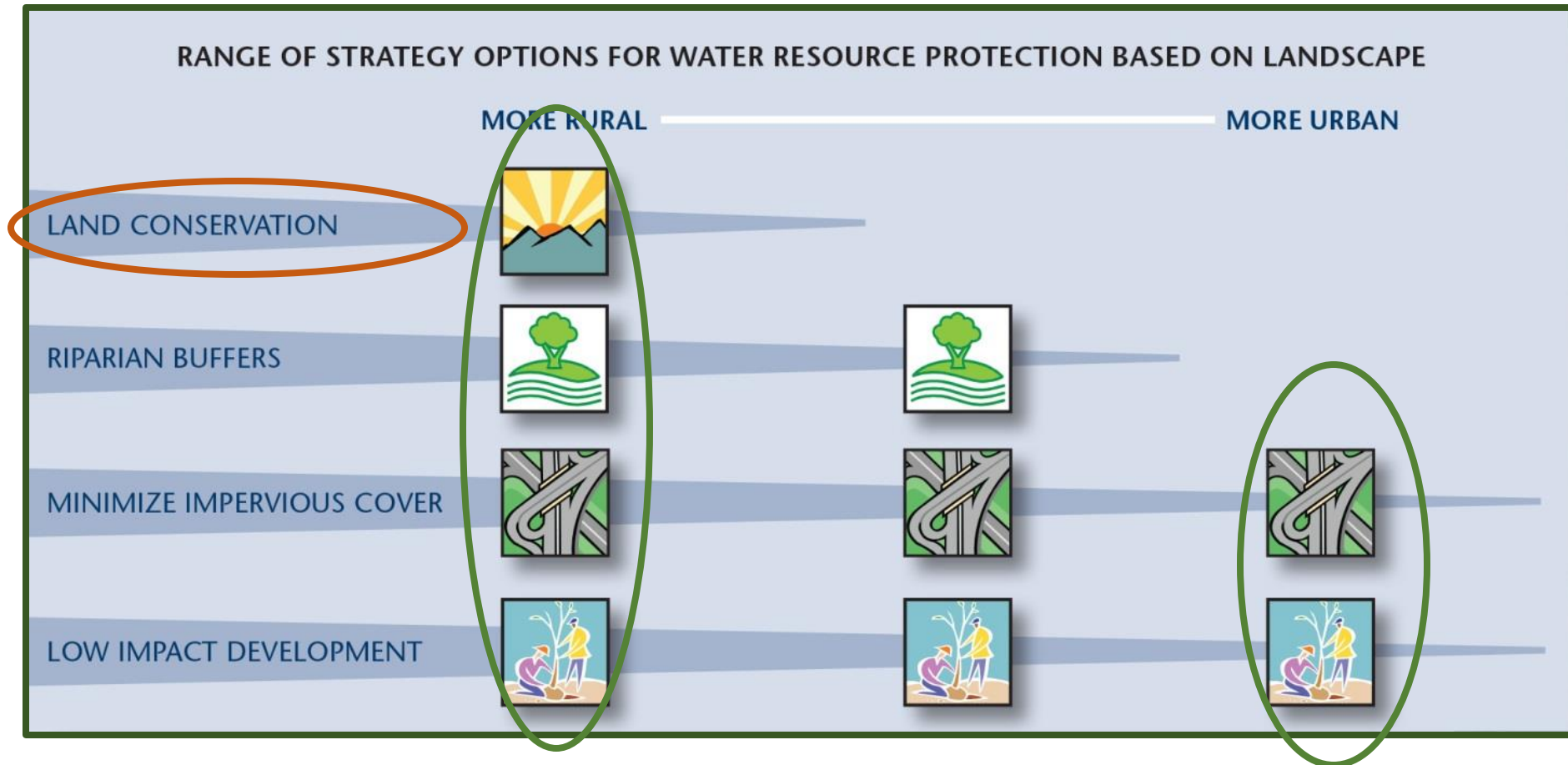
Can Working at the Property Scale Make a Difference?



Does residential property matter?



Opportunities for Communities – scale out



Land Conservation = Permanent Land Protection



Primary Benefits of Land Protection for Water Resources

- Keeps natural systems intact
- Reduces flooding – provides infiltration
- Protects water quality - provides filtration

As well as other social and economic benefits

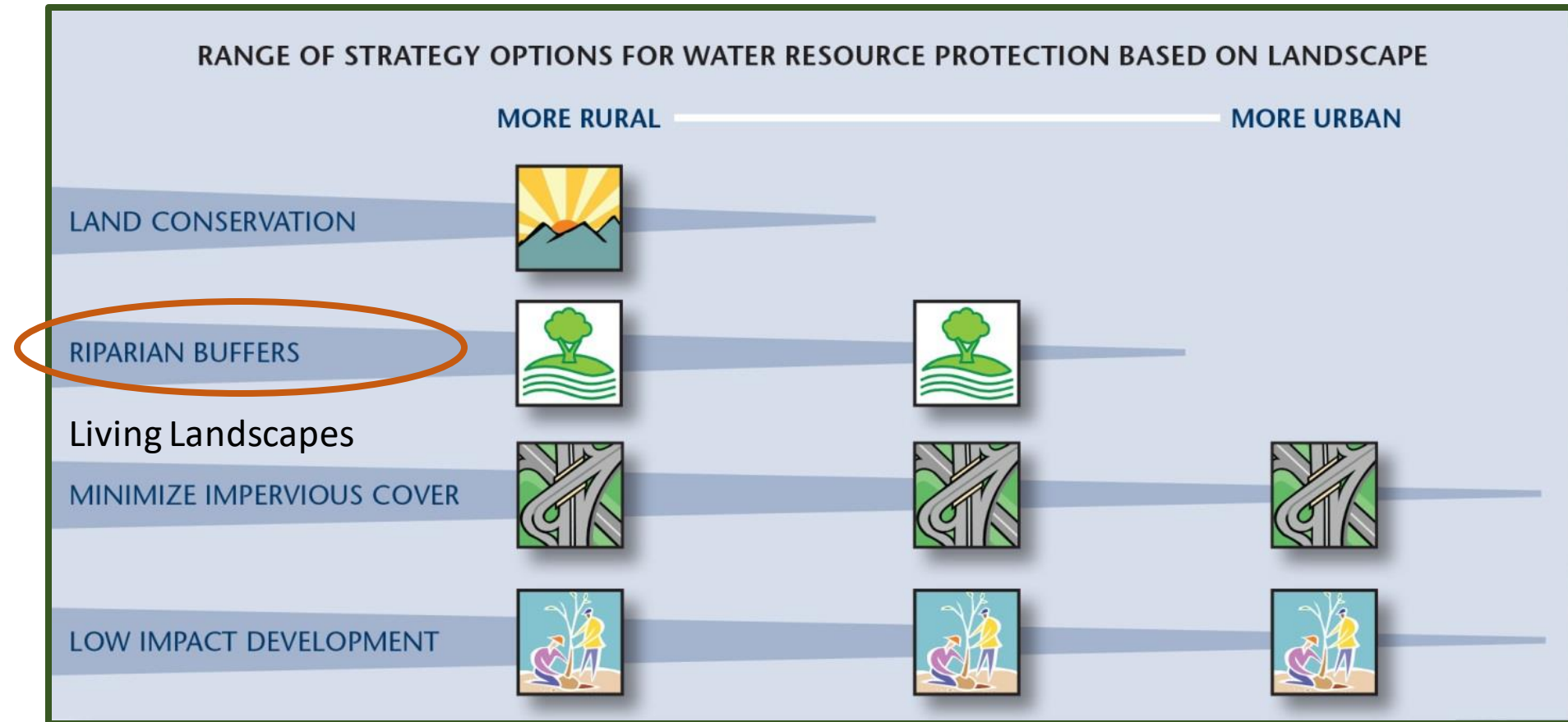
How is Land Conservation Carried Out?

Conservation Easement

Voluntary legal agreement between a landowner and conservation organization (easement holder) that **permanently** limits certain uses of the land in order to protect conservation values



Clean Water Strategies



Riparian Buffers

Vegetated areas along
the shores of surface
waters and wetlands

Transition between
upland and water

Protect a waterbody
from adjacent land use

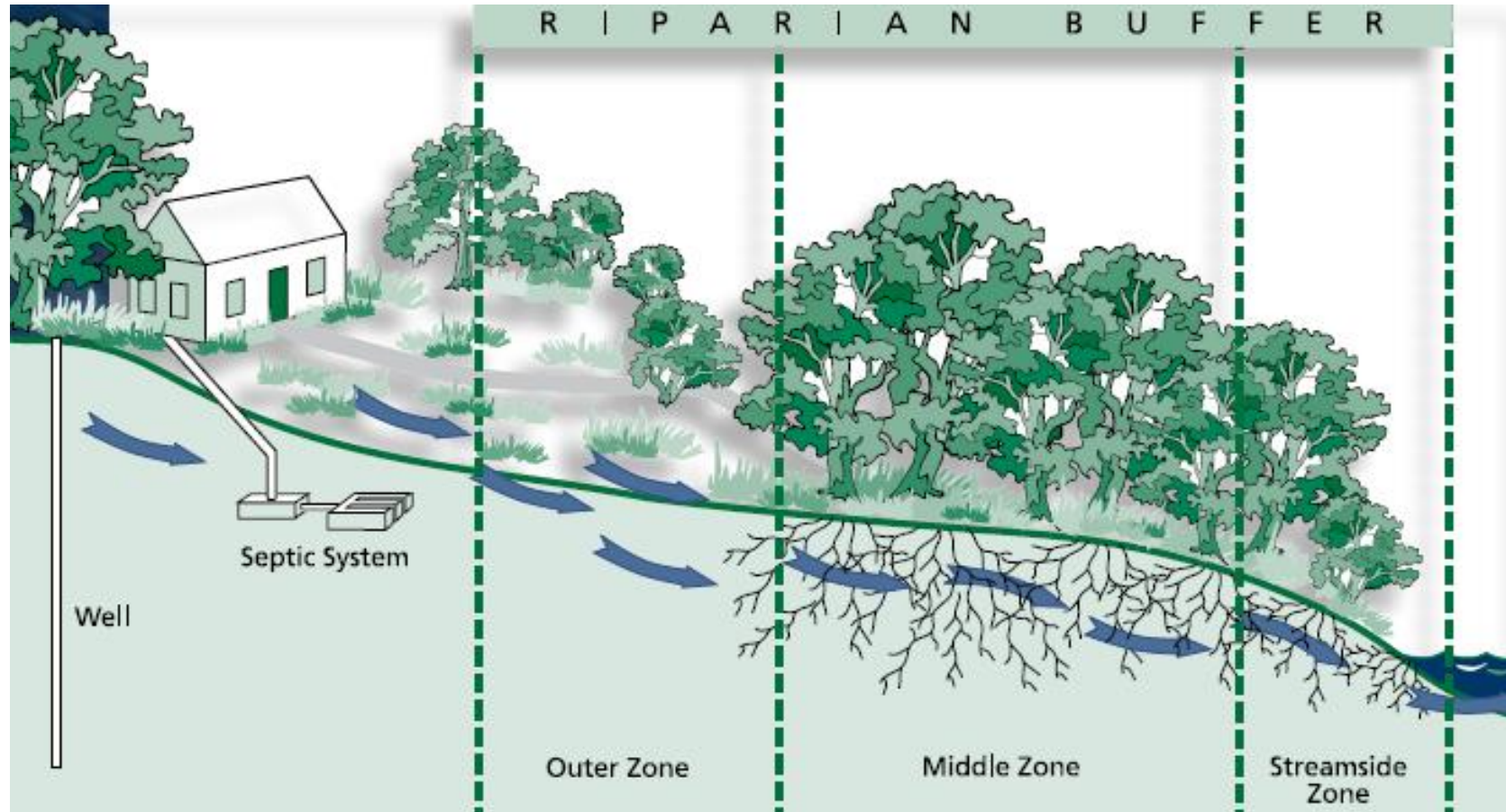
Primary Benefits of Riparian Buffers

Reduce flooding

Protect water quality

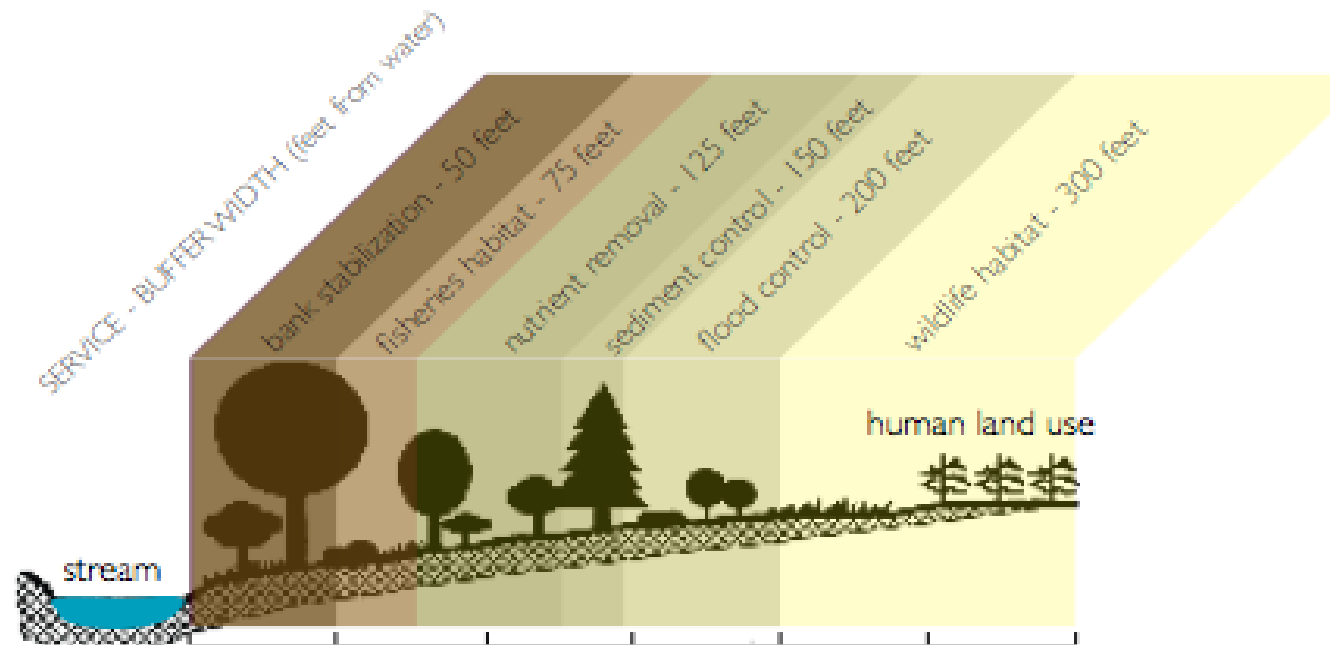
Stabilize banks

Buffers can be naturally present OR planted and maintained



Buffer Widths Affect Benefits : larger = more benefits

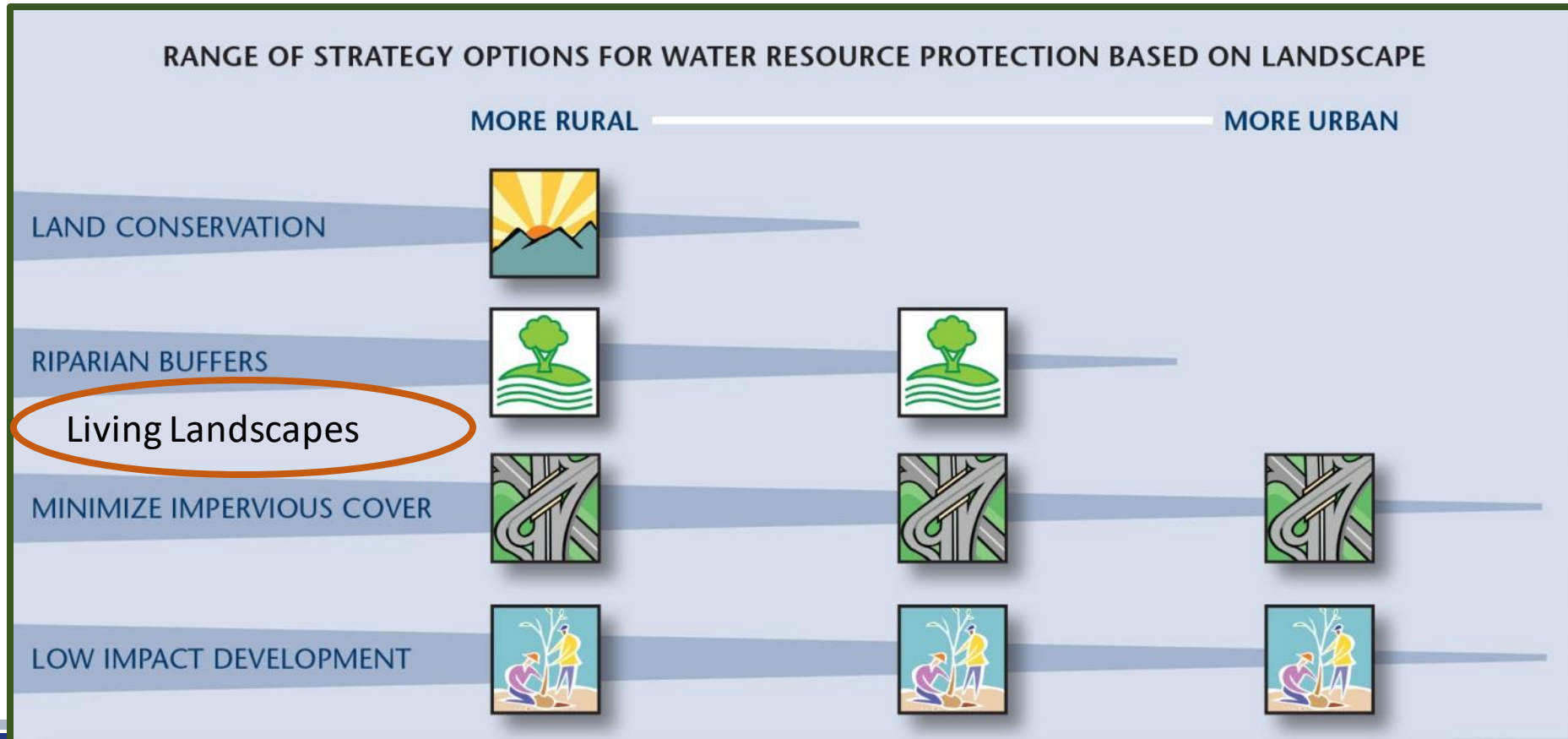
Figure 5. Environmental Services Provided by Various Shoreland Buffer Widths



Source: adapted from Connecticut River Joint Commission, 2000.

From Piscataqua Region Estuaries Partnership Assessment Report

Clean Water Strategies – Living Landscapes

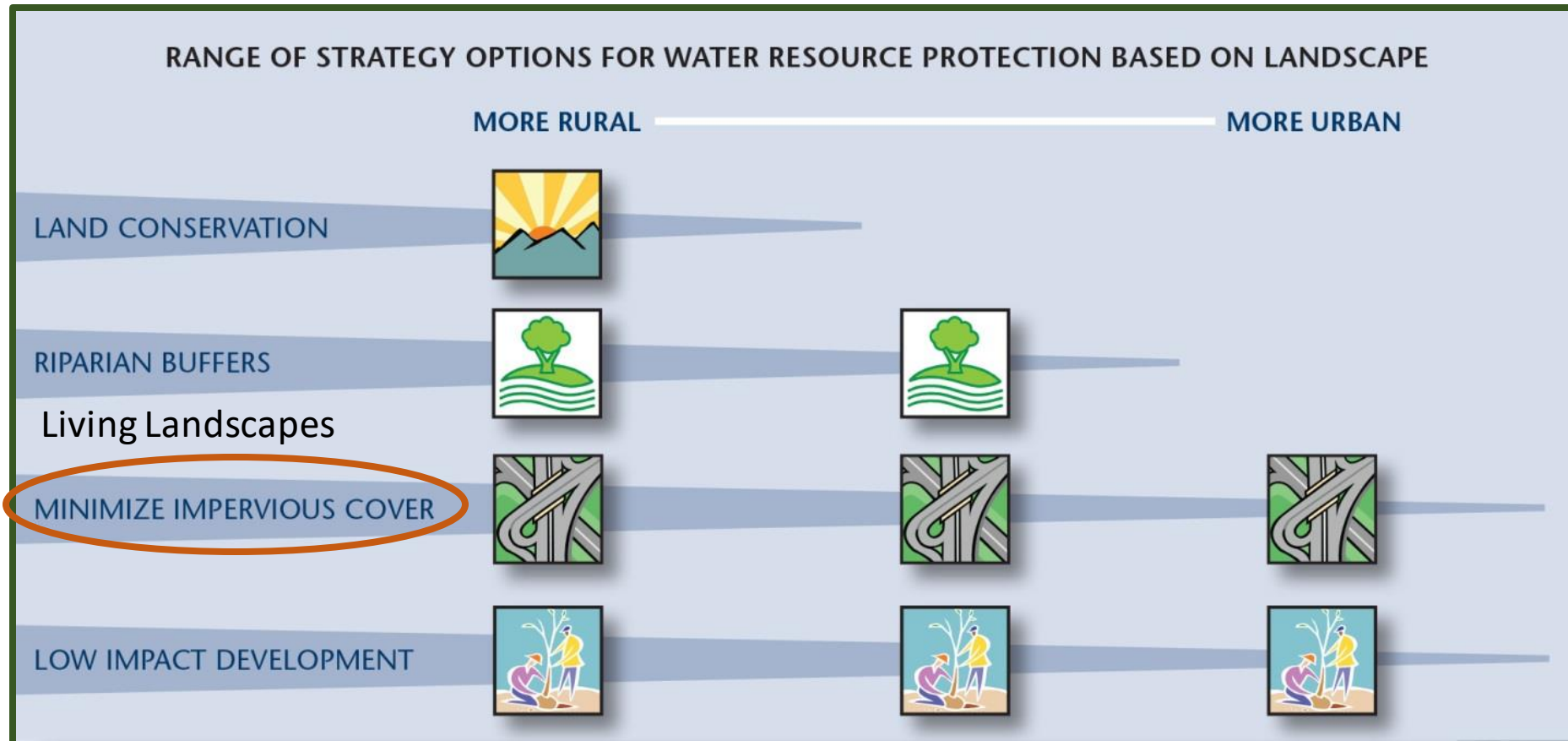


Living Landscapes



Image:<http://lindenlandgroup.com/blog>

Clean Water Strategies



Graphic by Tricia Miller,
MillerWorks
Graphic Design

What Options When There's Lots of Impervious Cover?



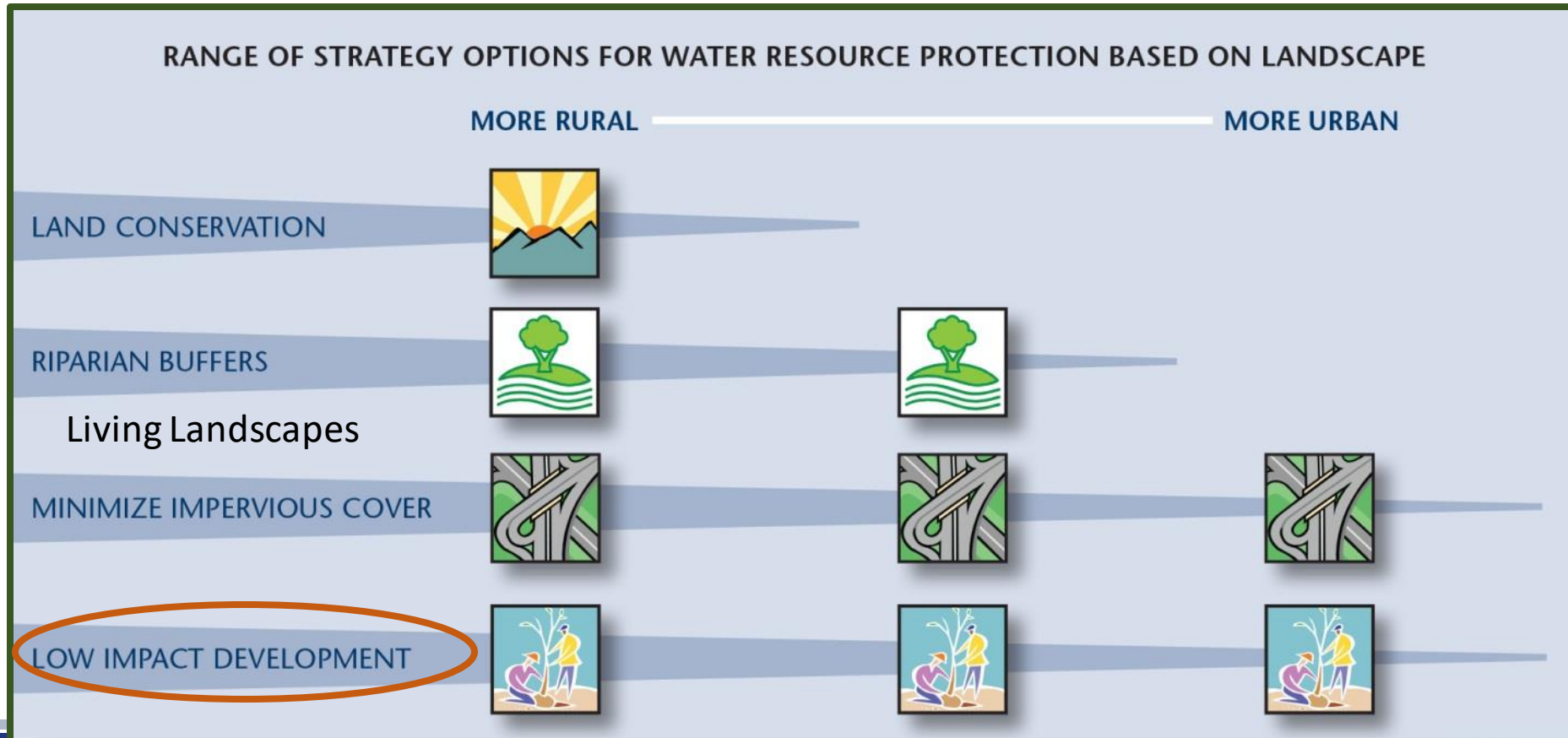


Limit or Disconnect



Porous Pavement & Rain Garden

Clean Water Strategies



Does Low Impact Development Work?

Research Field Facility at UNH

Tc ~ 19 minutes



“High level treatment typically only occurs with the use of

filtration systems”:

Eg. raingardens, bioretention, tree filters, bioswales, gravel wetlands



THANK YOU!



Photo: J. Peterson