Saving Land, Water, and Money

with smart local land use regulations

SNEP Network Webinar
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Mass Audubon
Shaping the Future of Your Community

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DEVENS
ENTERPRISE • COMMISSION

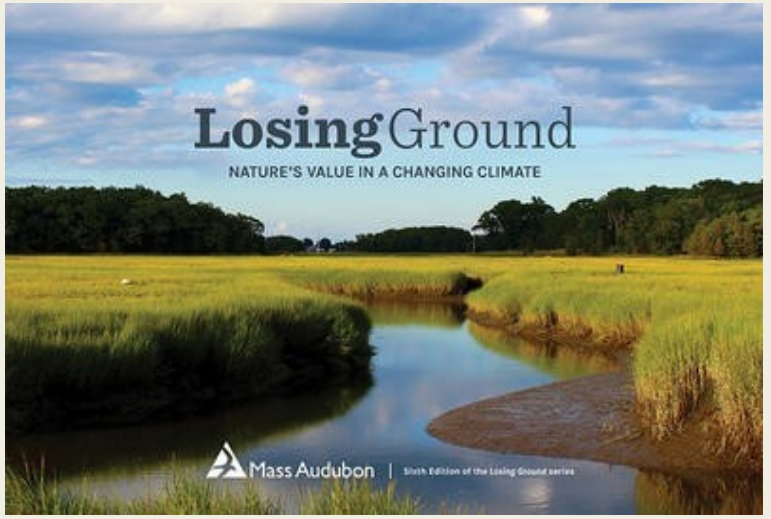
Wellfleet Bay Wildlife Sanctuary, South Wellfleet. Photo by Dennis Welsh.

Shaping The Future of Your Community Program

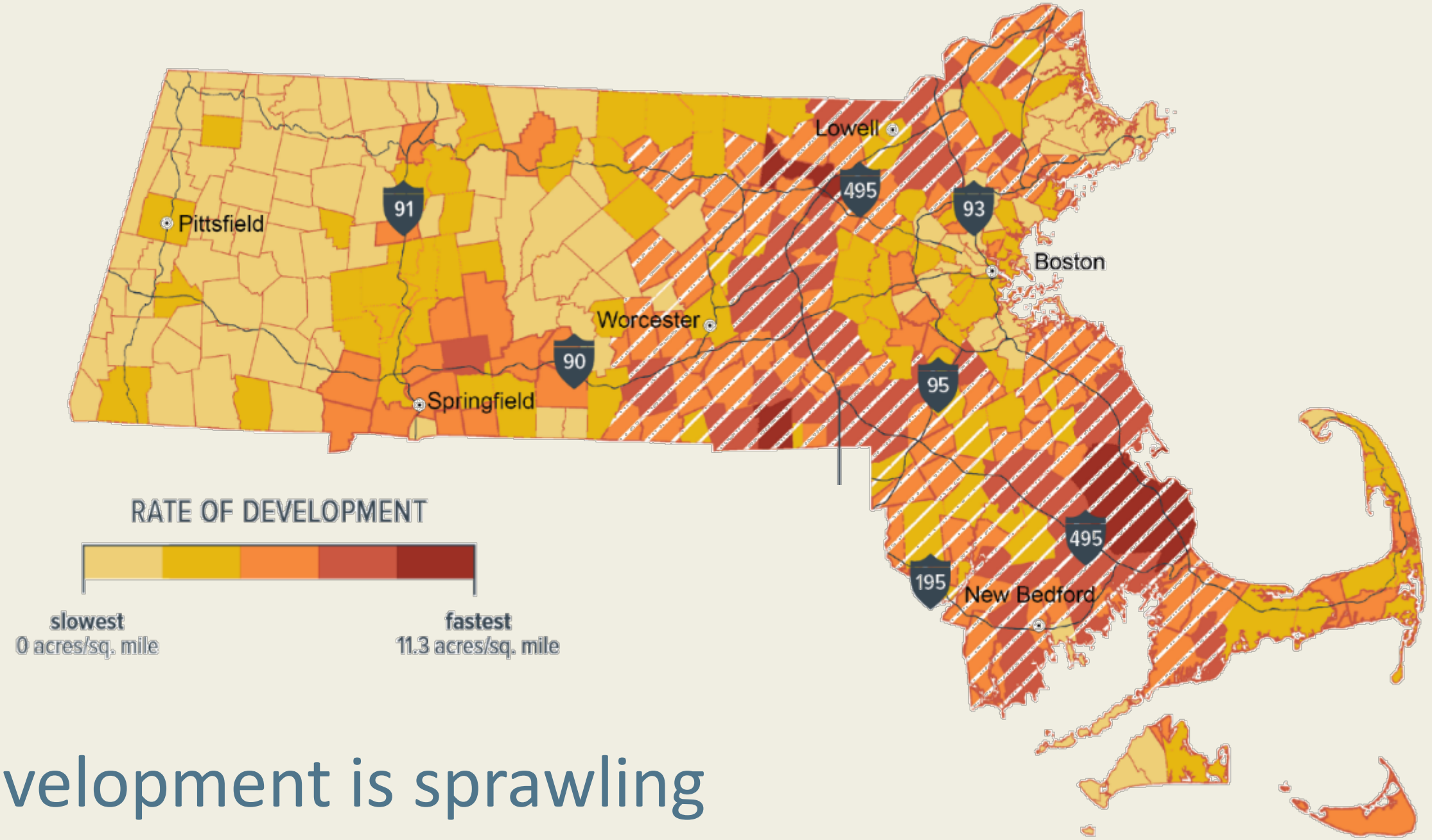
Created in 2009 to implement *Losing Ground* recommendations

Assists the fastest-developing communities chart a more **sustainable future**

- ✓ Customized workshops
- ✓ Technical assistance
- ✓ Planning advice



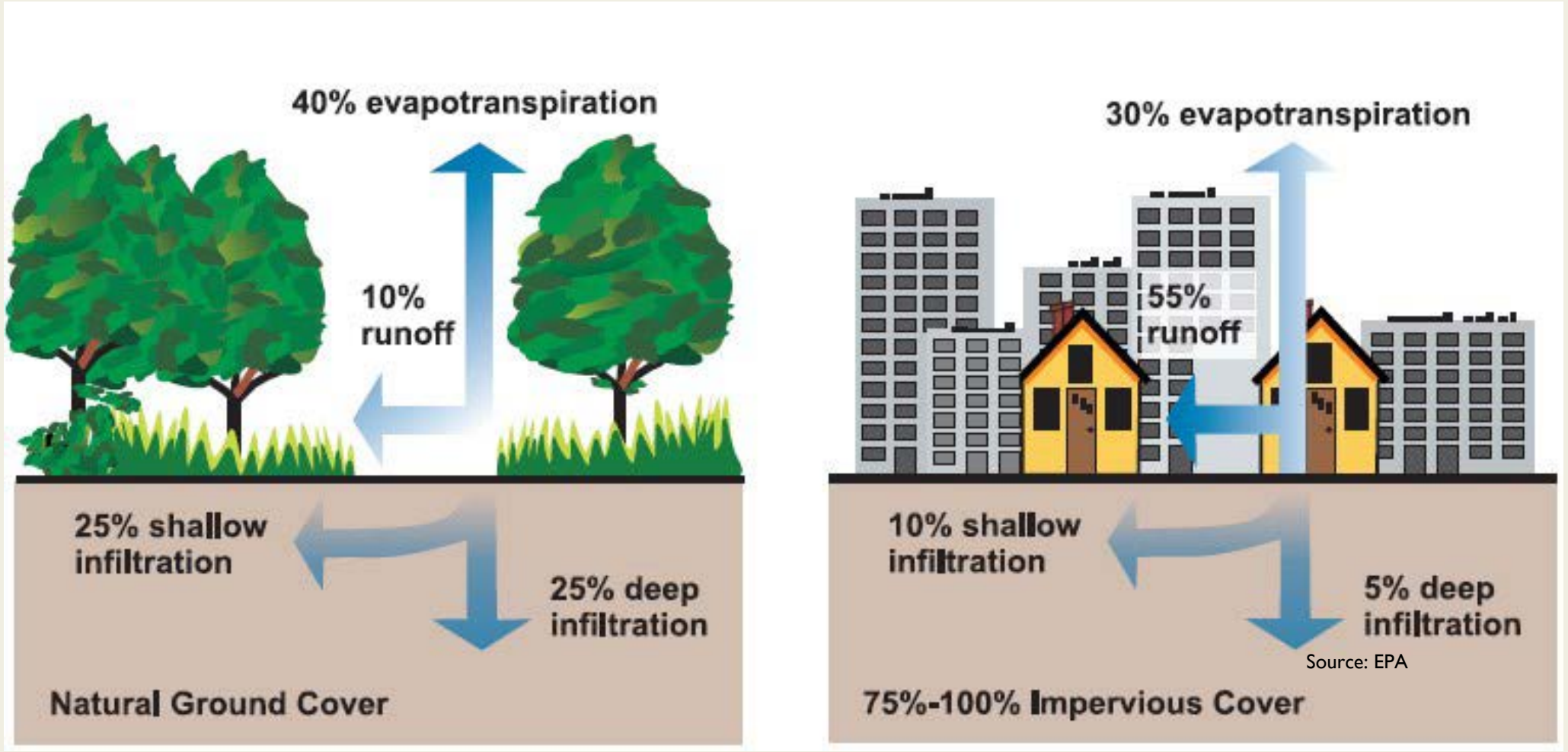
Shaping the Future of Your Community



Development is sprawling

www.massaudubon.org/losingground

Sprawling development → Impervious surface → Runoff



Source: EPA

We Need to Change Course

Traditional development

Impervious surfaces

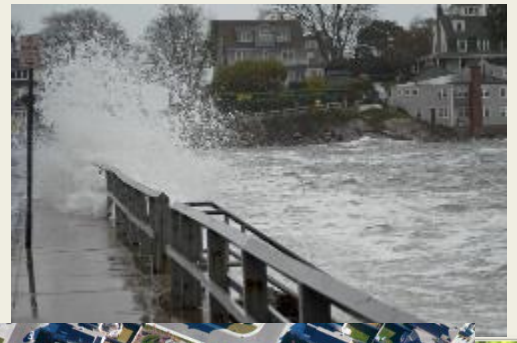
Stormwater runoff

Water quality impairments

Public health risks

Infrastructure impacts

Financial and regulatory burden



Climate change

Sprawling Development

increased precipitation

increased temperature

impervious surfaces

stormwater & WQ issues

flooding & infrastructure damage

heat-related illnesses

stresses to natural environment

Dual Threat - What do we do about it?

A classic New England village look at the Cottages on Green in East Greenwich, RI

Development is going to happen, but we can do it sustainably.

Protect what we have & develop smarter

Green Infrastructure (GI)

Natural features (or engineered structures built to mimic natural features) that perform critical natural processes, such as:

- managing surface and groundwater flows
- capturing and treating stormwater
- protecting water and air quality
- providing resilience
- protecting public health

Nature based solutions (NBS) and **low impact development (LID)** are actions or strategies that protect, restore, and/or manage **GI**

Nature based solutions at every scale

NBS protect, restore, and/or manage existing ecological systems, or mimic natural processes, to protect public health and resilience

Conserve natural GI already providing critical natural processes

Integrate LID into new and re-development to protect and manage GI

Restore resilience in urban areas through engineered GI solutions

Low Impact Development (LID)

- Treats **water as a resource**, not just a waste product
- Manages stormwater as **close to its source** as possible
- **Preserves** natural landscape by recreating natural features

A Different Direction: Greening Your Community

Sustainable development

Increased groundwater infiltration

Reduced runoff

Improved water quality

Intact infrastructure

Regulations met
Money saved

Low Impact Development (LID)

Green roofs

U.S. General Services Administration

Boston, MA: John W. McCormack US Post Office and Courthouse. This 9,654 ft^2 green roof sits atop the EPA Region 1 Headquarters on a historic 1933 building.

EPA

A small, slanted green roof in Craftsbury, VT.

LID Fact Sheets

massaudubon.org/lidfactsheets

fit your location.

Permeable pavement

Horsley Witten Group

parking lot in Narragansett, RI shows
itional asphalt on the left, where puddles
e formed, and permeable pavement on the
t, where it has soaked through.

You get what you zone for

Communities often **unintentionally discourage** LID by…

- Requiring large lots, strict dimensional requirements
- Requiring wide, curbed roads
- Requiring non-native species
- Not prioritizing LID or preservation of natural features

Avoid sprawl through smart zoning and regulations

1. Protect natural resources and open space
2. Promote efficient, compact development patterns and infill
3. Smart designs that reduce overall imperviousness
4. Adopt GI Stormwater management provisions (LID)
5. Encourage efficient parking

Give your community the LID tune-up with Mass Audubon's Bylaw Review Tool

Factors	Conventional	Better	Best	Community's Zoning	Community's Subdivision Rules & Regulations	Community's Site Plan Review	Community's Stormwater/LID Bylaw/Regulations
GOAL 1: PROTECT NATURAL RESOURCES AND OPEN SPACE							
Soils managed for revegetation	Not addressed	Limitations on removal from site, and/or requirements for stabilization and revegetation	Prohibit removal of topsoil from site. Require rototilling and other prep of soils compacted during construction	*(Not applicable)*			
Limit clearing, lawn size, require retention or planting of native vegetation/naturalized areas	Not addressed or general qualitative statement not tied to other design standards	Encourage minimization of clearing/ grubbing	Require minimization of clearing/grubbing with specific standards				
Require native vegetation and trees	Require or recommend invasives	Not addressed, or mixture of required plantings of native and nonnative	Require at least 75% native plantings				
GOAL 2: PROMOTE EFFICIENT, COMPACT DEVELOPMENT PATTERNS AND INFILL							
Lot size	Required minimum lot sizes	OSRD/NRPZ preferred. Special permit with incentives to utilize	Flexible with OSRD/NRPZ by right, preferred option		*(Not applicable)*	*(Not applicable)*	*(Not applicable)*

See how your regulations stack up against best practices

Factors	Conventional	Better	Best	Community's Zoning
GOAL 2: PROMOTE EFFICIENT, COMPACT DEVELOPMENT PATTERNS AND INFILL				
Lot size	Required minimum lot sizes	OSRD/NRPZ preferred. Special permit with incentives to utilize	Flexible with OSRD/NRPZ by right, preferred option	
Setbacks	Required minimum front, side, and rear setbacks	Minimize, allow flexibility	Clear standards that minimize and in some instances eliminate setbacks	
Frontage	Required minimum frontage for each lot/unit	Minimize especially on curved streets and cul-de-sacs	No minimums in some instances, tied into other standards like OSRD design and shared driveways.	
Common driveways	Often not allowed, or strict limitations	Allow for 2-3 residential units	Allow for up to 4 residential units, preferrably constructed with permeable pavers or pavement	

Identify contradictions and prioritize updates

Factors	Conventional	Better	Best	Community's Zoning	Community's Subdivision Rules & Regulations	Community's Site Plan Review (Zoning bylaw S 5400, pg 67)	Community's Stormwater/LID Bylaw/Regulations (2008 Stormwater bylaw)
GOAL 1: PROTECT NATURAL RESOURCES AND OPEN SPACE							
Soils managed for revegetation	Not addressed	Limitations on removal from site, and/or requirements for stabilization and revegetation	Prohibit removal of topsoil from site. Require rototilling and other prep of soils compacted during construction	*(Not applicable)*	No specific standards set, only required to minmize area of vegetation disturbed, erosion and siltation. Does specify proximity to water body, steep slopes and easily eroded soils as particular concerns. (S4110) "The subdivision as designed will not cause substantial and irreversible damage to the environment, which damage could be avoided or ameliorated through an alternative development plan." (S 3450) For roadway construction, loam/topsoil removed must be	Not addressed, aside from requiring site plans minimize soil erosion.	Erosion and Sediment Control Plan required that minimizes soil erosion and control sedimentation during construction. Phasing required to prevent disturbance over area >/= 5,000 sq ft at a time. (Stormwater bylaw section 7)
Limit clearing, lawn size, require retention or planting of native vegetation/naturalized areas	Not addressed or general qualitative statement not tied to other design standards	Encourage minimization of clearing/ grubbing	Require minimization of clearing/grubbing with specific standards	no more than 2 acres may be stripped or filled more than 6" (s3433) removal >50 cy in 1 year requires special permit (s3610)	No specific standards set, only must minimize area disturbed and number of mature trees removed (S 4110). "The subdivision as designed will not cause substantial and irreversible damage to the environment, which damage could be avoided or ameliorated through an alternative development plan." (S 3450) 5% of area of land subdivided shall be	Not specifically addressed, aside from saying site plan must minimize cut/fill volume, number of 6" trees removed, area of wetland vegetation displaced, etc.	Erosion and Sediment Control Plan requires phasing to limit disturbed area to no more than 5,000 sq ft at a time, and plan/schedule for vegetative controls/stabilization. No specific requirements stated; no mention of native
Require native vegetation and trees	Require or recommend invasives	Not addressed, or mixture of required plantings of native and nonnative	Require at least 75% native plantings	"species common to the area" required in sec. 3530, does not specify native	Trees planted must be "long-lived species adapted to the local environment and approved by the Planning Board." Native not specified. (S 4530)	Not addressed.	Not addressed.
GOAL 2: PROMOTE EFFICIENT, COMPACT DEVELOPMENT PATTERNS AND INFILL							
		OSRD/NRPZ preferred		Required minimum lot size of 35,000 sq ft for residential; lots without water or sewer shall			

Go after the low hanging fruits

- Identify greatest potential for impact
- Administrative vs. town meeting changes
- Prioritize what's important to the community
- Don't reinvent the wheel!

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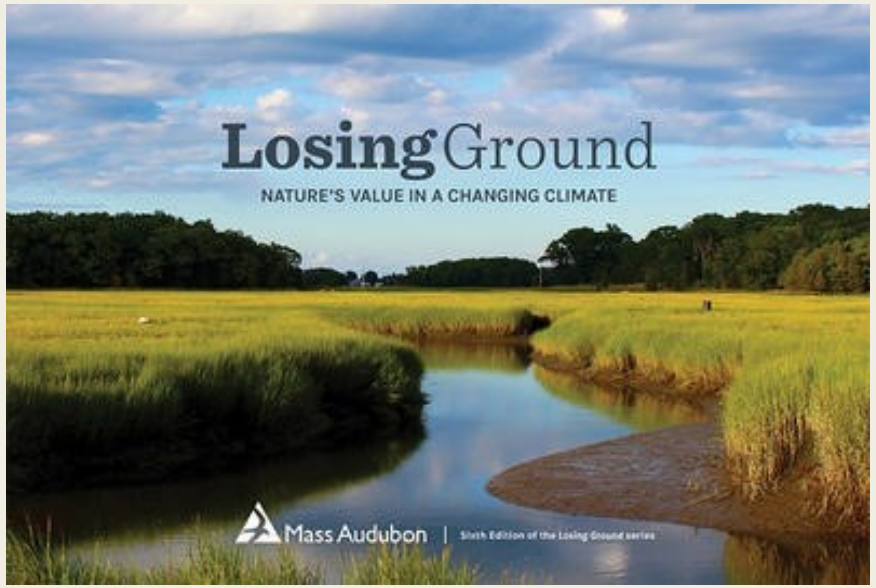
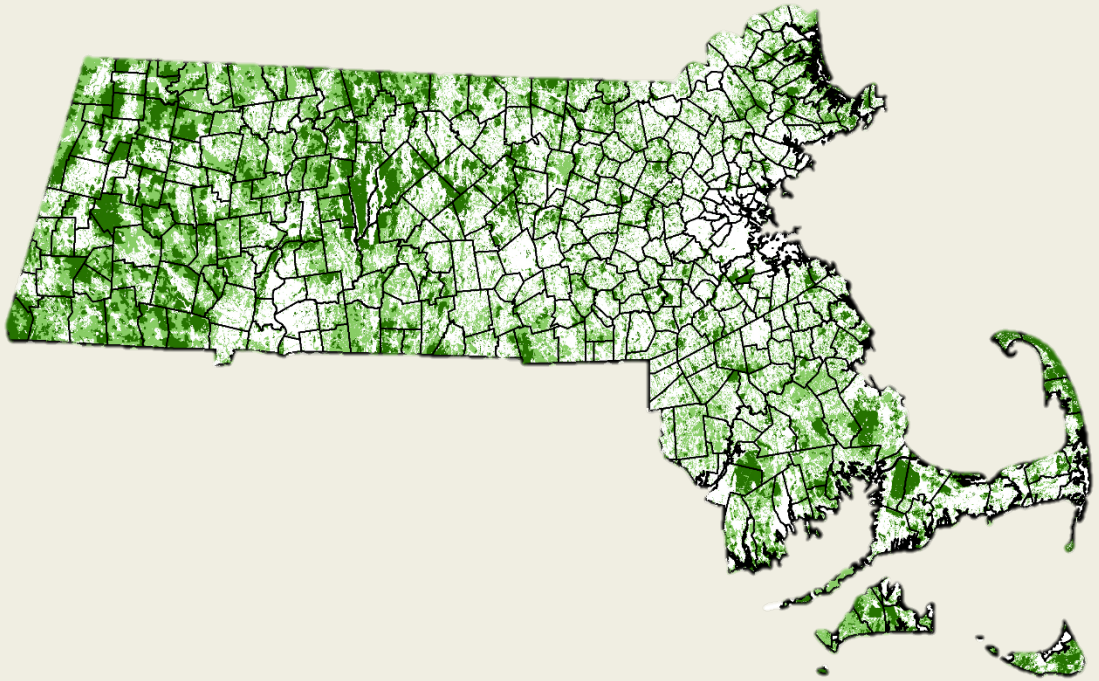
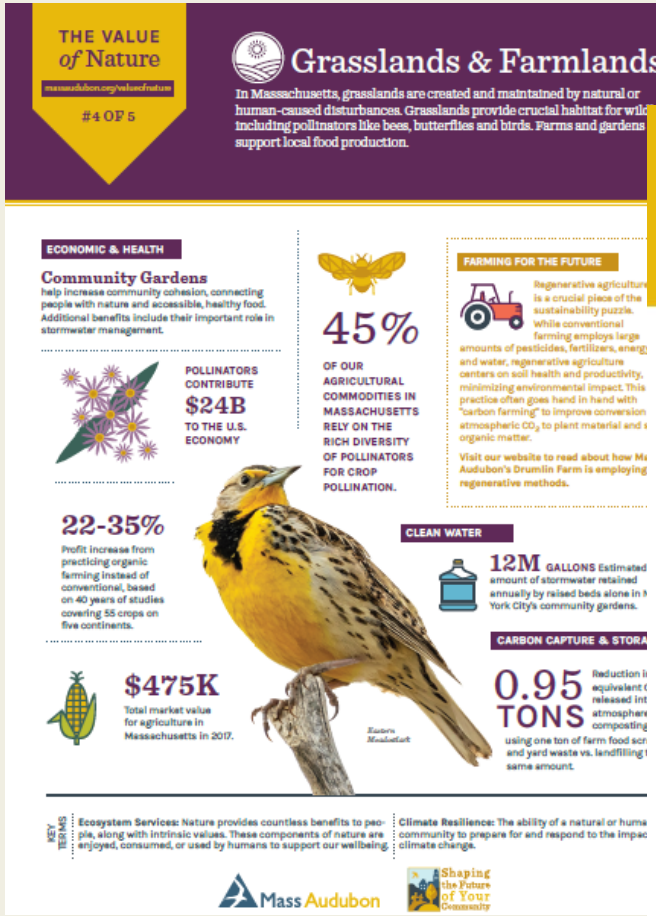
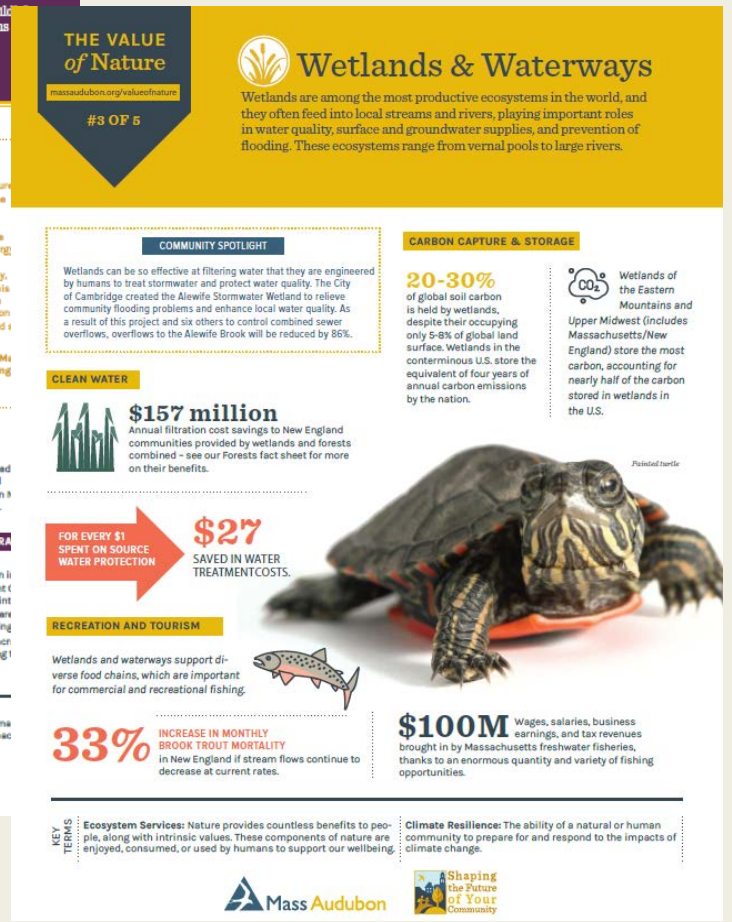
Get the tool and the fact sheets at:
massaudubon.org/lidcost

Additional resources at massaudubon.org/valueofnature









Additional Resources

Rhode Island NEMO

web.uri.edu/nemo/

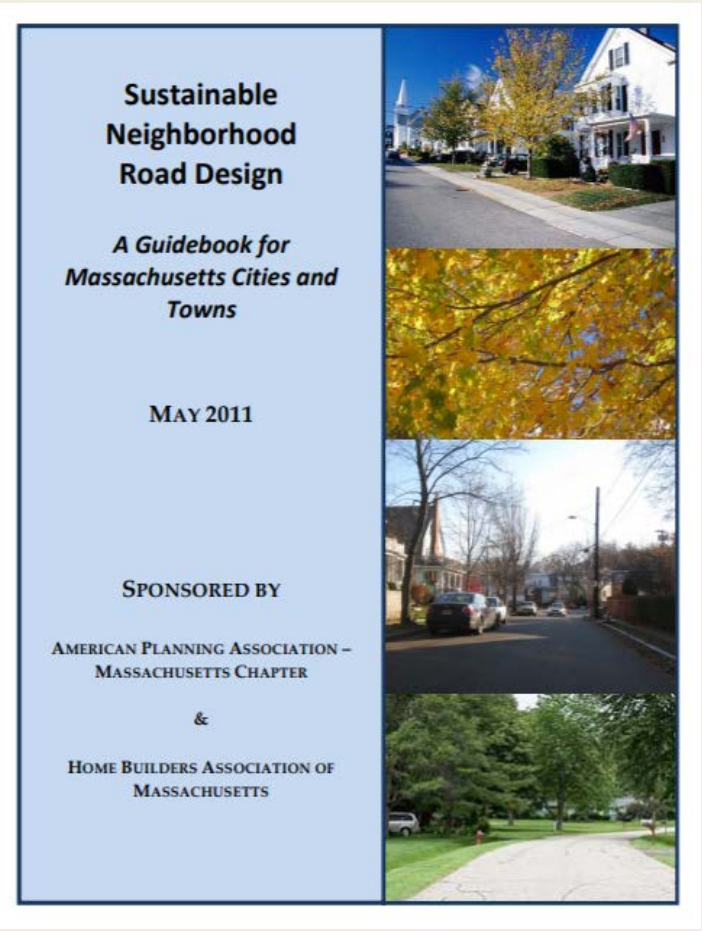
SNEP Southeast New England Program

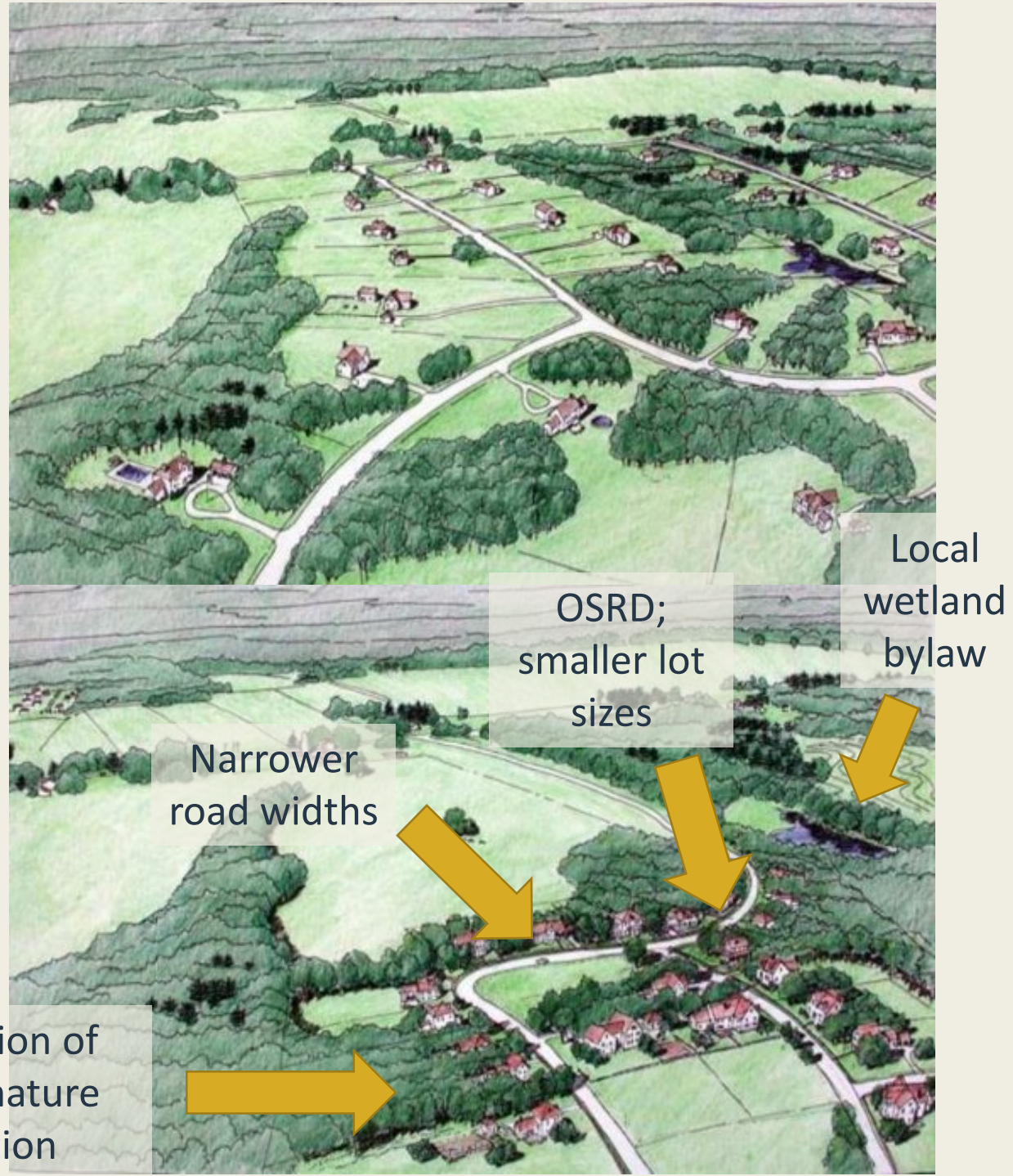
SNEPNetwork.org

greeninfrastructureri.org

MAPC
METROPOLITAN AREA PLANNING COUNCIL

Low Impact Development Toolkit



LID in practice

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