

*Photo by
Richard Benjamin*

Urban Coastal Greenways

A New Approach to Address Redevelopment in the Urban Coastal Environment

Rhode Island Coastal Resources Management Council



Overview

- CRMC
- Regulatory Tools for Addressing NPS Pollution
- The Challenge: Metro Bay
- The Solution: Metro Bay SAMP and Urban Coastal Greenways Policy
- UCG Requirements



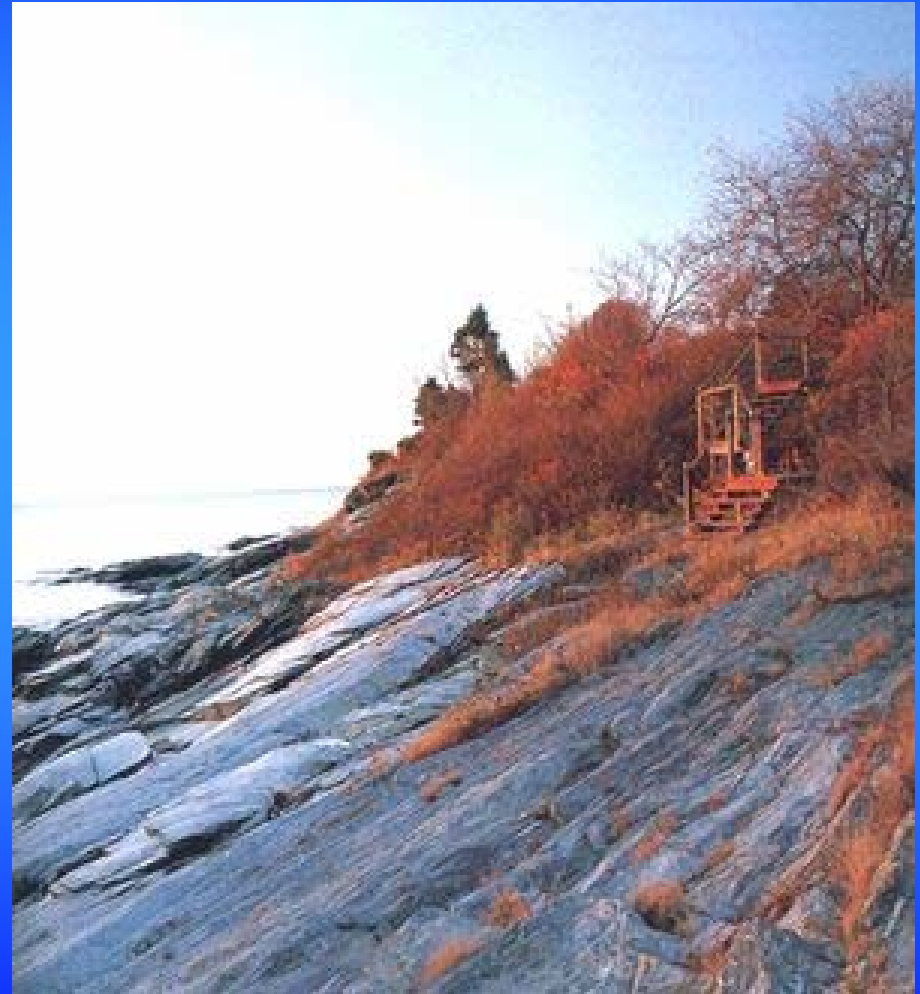
Programmatic Goals

It shall be the policy of the state to preserve, protect, develop, and where possible, restore the **coastal resources** of the state...

...Preservation and restoration of **ecological systems** shall be the guiding principle upon which decisions are made.

CRMC Jurisdiction

- Tidal waters
- Shoreline Features
- Areas contiguous to shoreline features
 - 200ft. from inland edge
- Freshwater wetlands in the vicinity of the coast

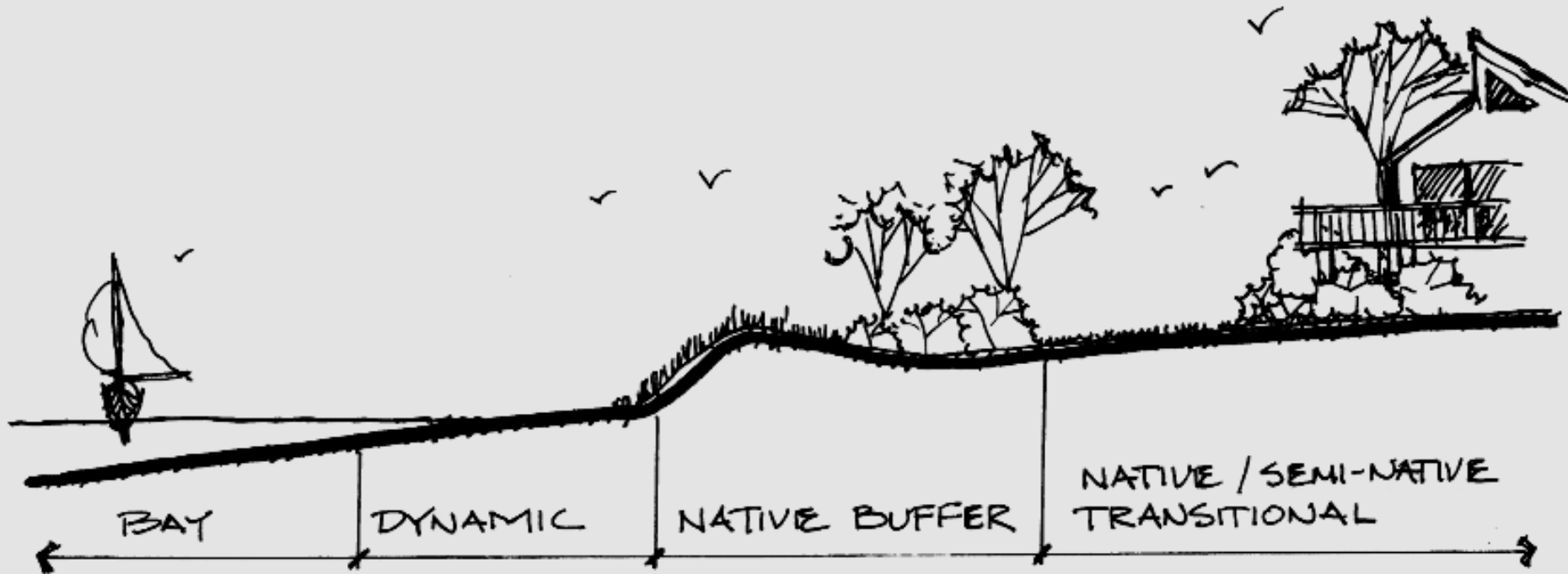


RICRMP (a.k.a. the “Red Book”)

- Stormwater treatment standards (Section 300.6)
- Buffer program (Section 150)



Coastal Buffers

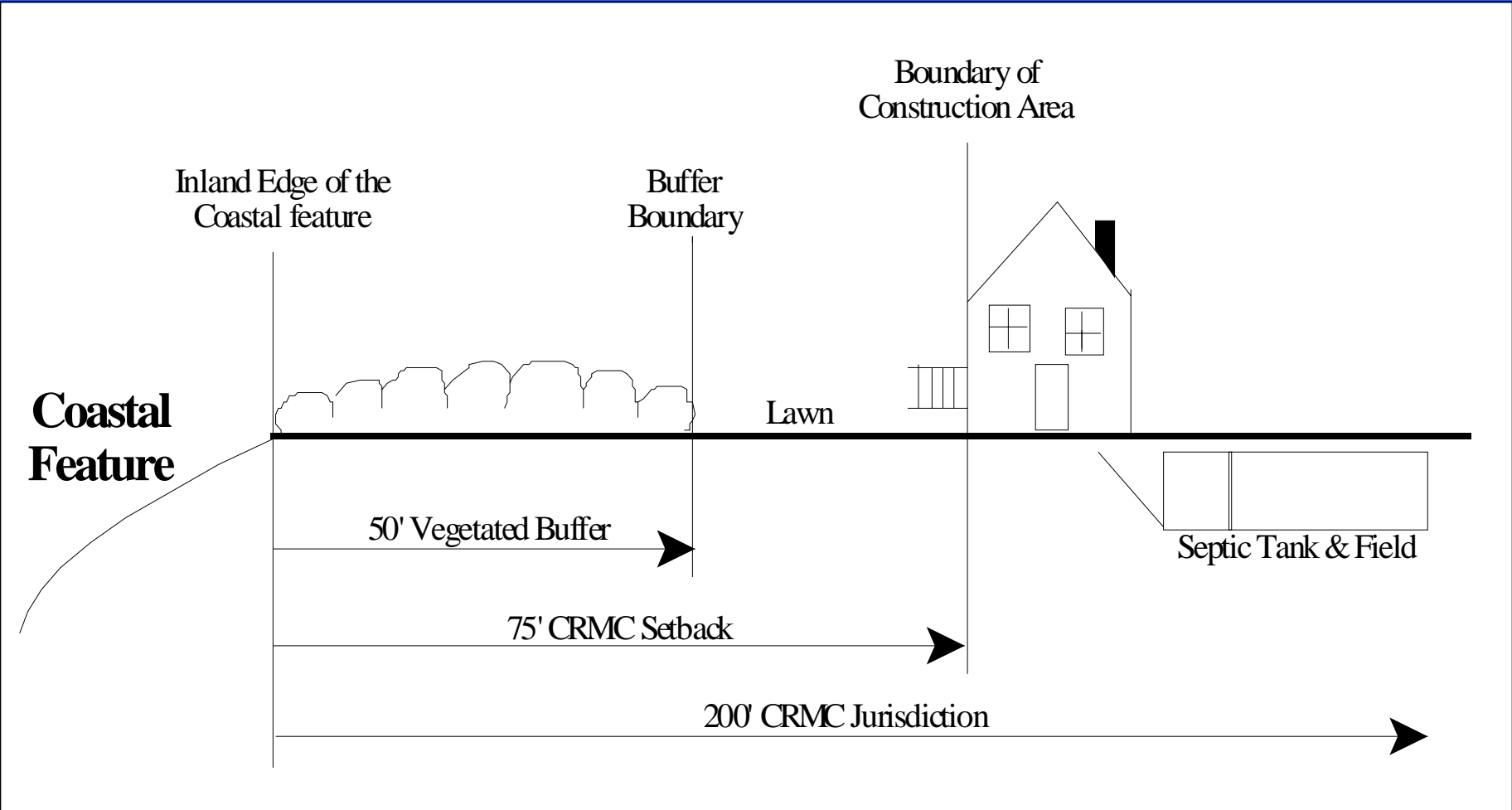


Dynamic → Sensitive → Useable land

Coastal Buffer

Land area adjacent to a shoreline feature that is vegetated with native plants and which provides a natural transition zone between the coast and adjacent upland development.

RICRMP Section 150: Coastal Buffers



CRMC Setback & Buffer Rules

(Redbook Sections 140 & 150)

- **Applies to residential coastal lots**
- **Minimum 50' setback from coastal feature**
- **Buffer width based on lot size and water type**
- **Minimal buffer management allowed**
- **Variance is only option for reducing buffer...**
no Public Benefit from granting the variance

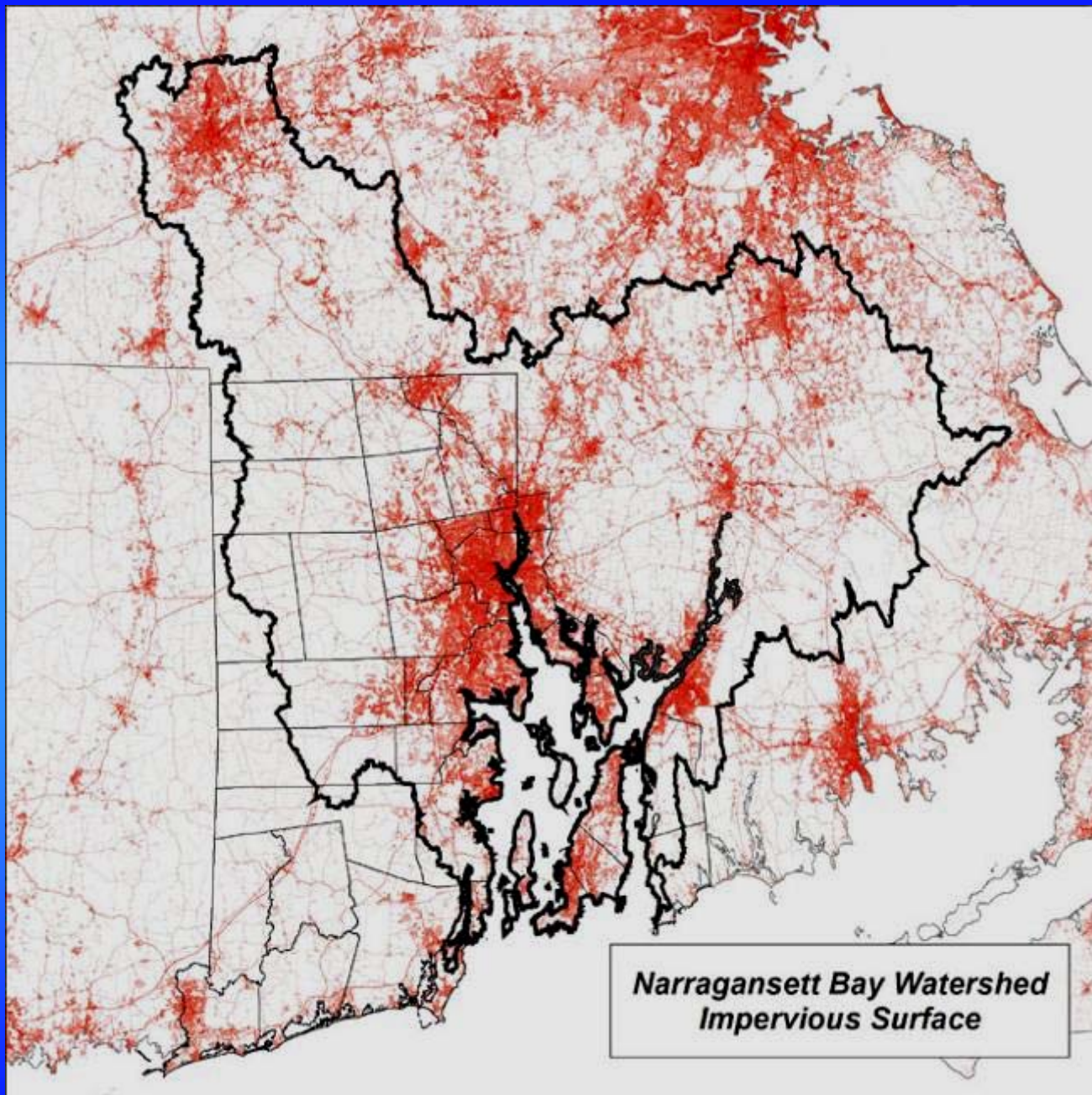
Coastal Buffers for NPS Pollution Attenuation

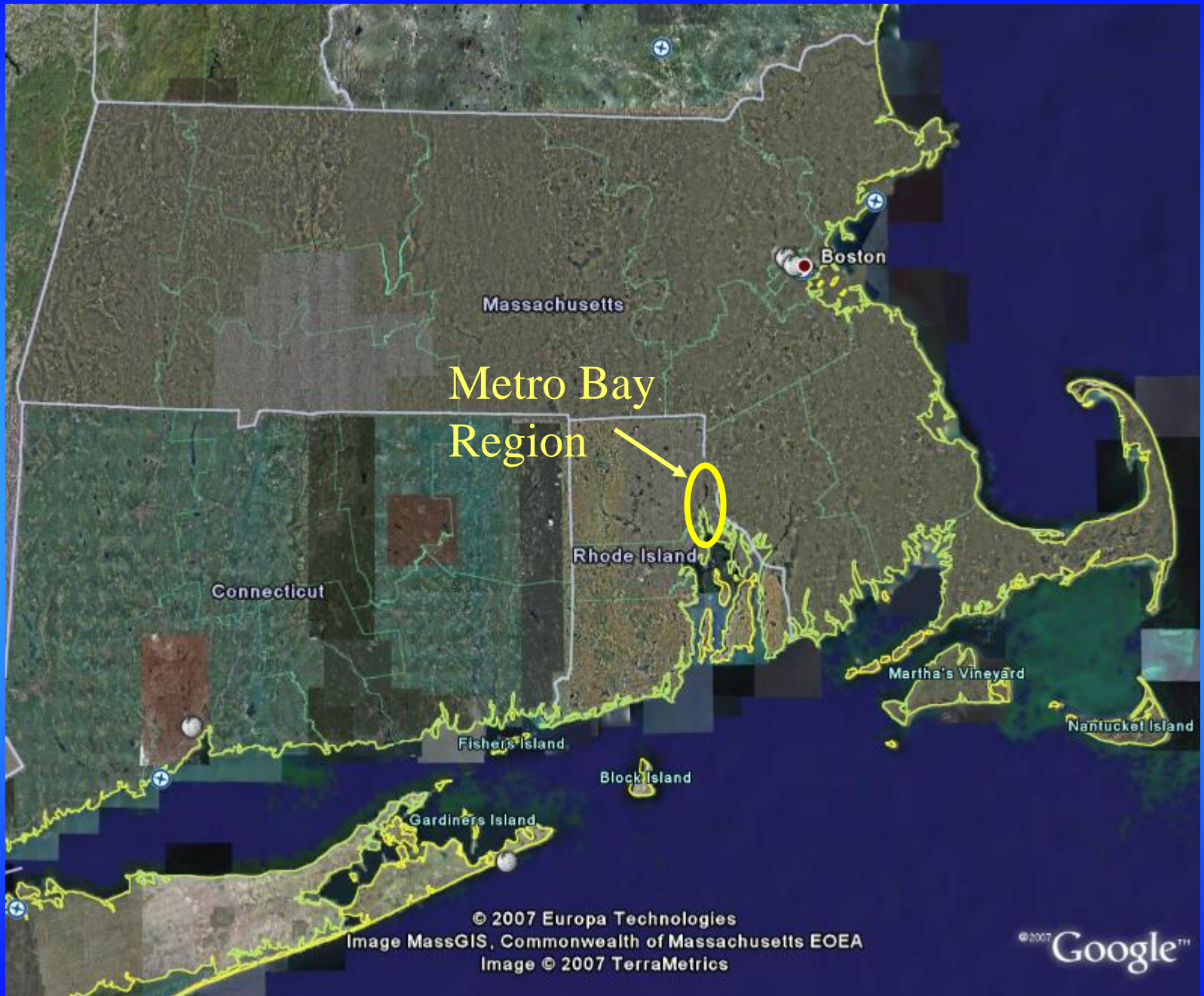
- Slow water down
- Enhance sediment filtration
- Increase infiltration of surface water into the soil and groundwater
- Expose contaminants to extended periods of biological, physical and chemical removal mechanisms
- These functions increase with buffer width



Factors that Reduce Buffer Effectiveness

- Increased Slopes[†]
- Highly Permeable Soils[†]
- Dense Soils[†]
- High Sediment Loading
- Altered Hydrology
 - Impervious Surfaces
 - Subsurface Drains
 - Concentrated Flow (Dillaha, 1989)





Metro Bay
Region

Boston

Massachusetts

Connecticut

Rhode Island

Martha's Vineyard

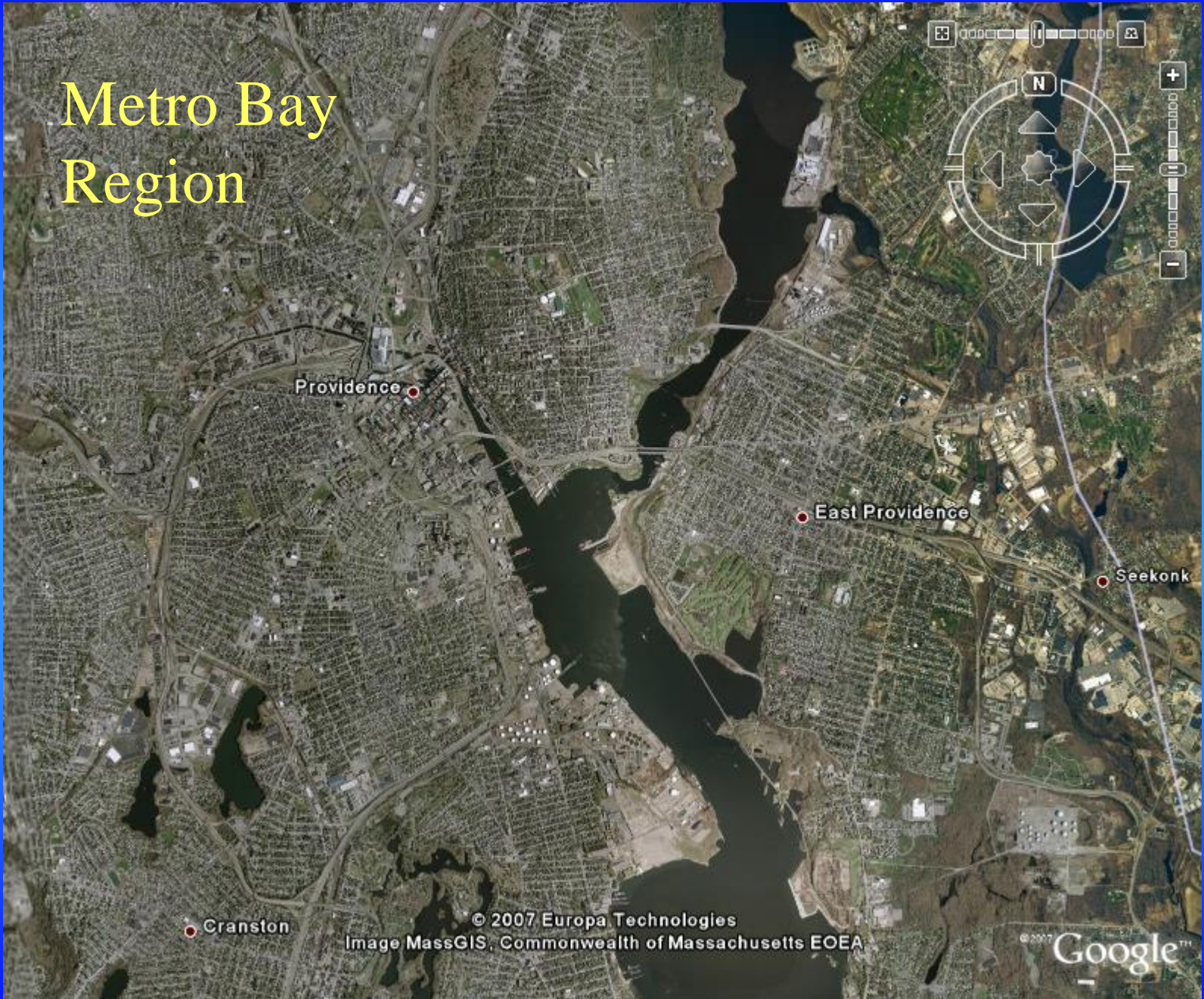
Nantucket Island

Fishers Island

Block Island

Gardiners Island

Metro Bay Region



Providence

East Providence

Seekonk

Cranston

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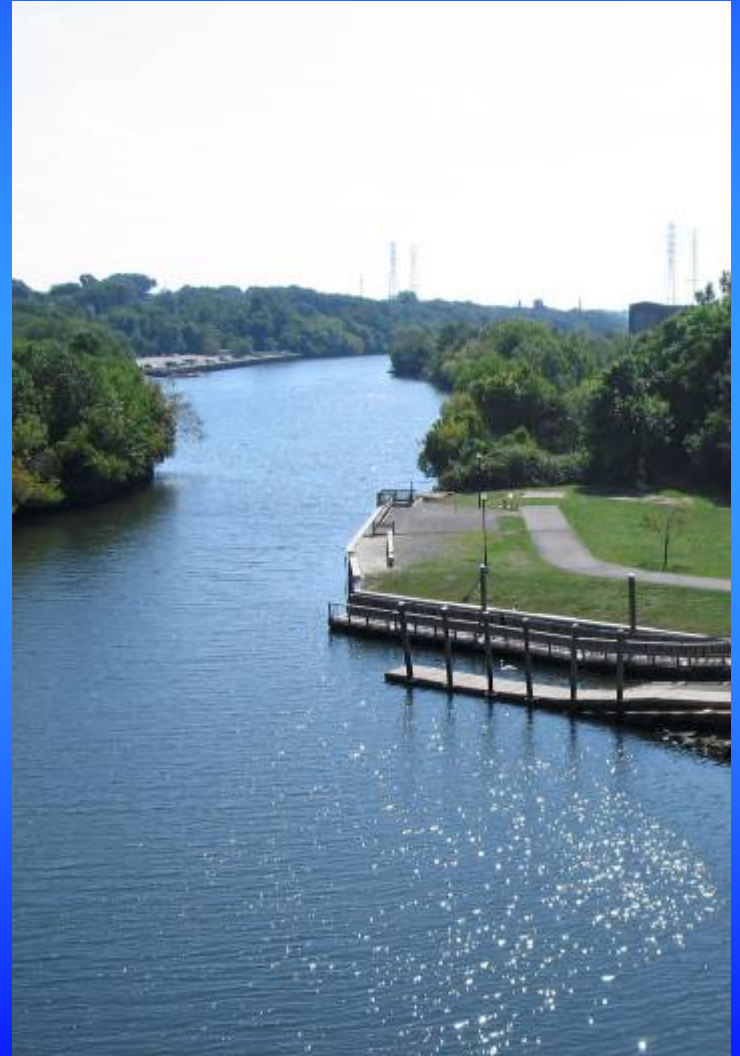
Upper Providence River and Port of Providence



The Challenge:

A New Coastal Buffer Policy that...

- Acknowledges constraints of coastal *urban* redevelopment.
- *Protects or restores* coastal habitat.
- *Streamlines* permitting while allowing *flexibility* in meeting regulatory requirements.
- Reduces variance requests and increases *public benefit*.
- Increases *consistency* and *predictability* of process.



Metro Bay Region SAMP Boundary

Cranston

Providence

Pawtucket

East Providence

~ 24 mi. of shoreline



Urban Coastal Greenways Policy

For the Metro Bay Region

Cranston, East Providence, Pawtucket, and Providence

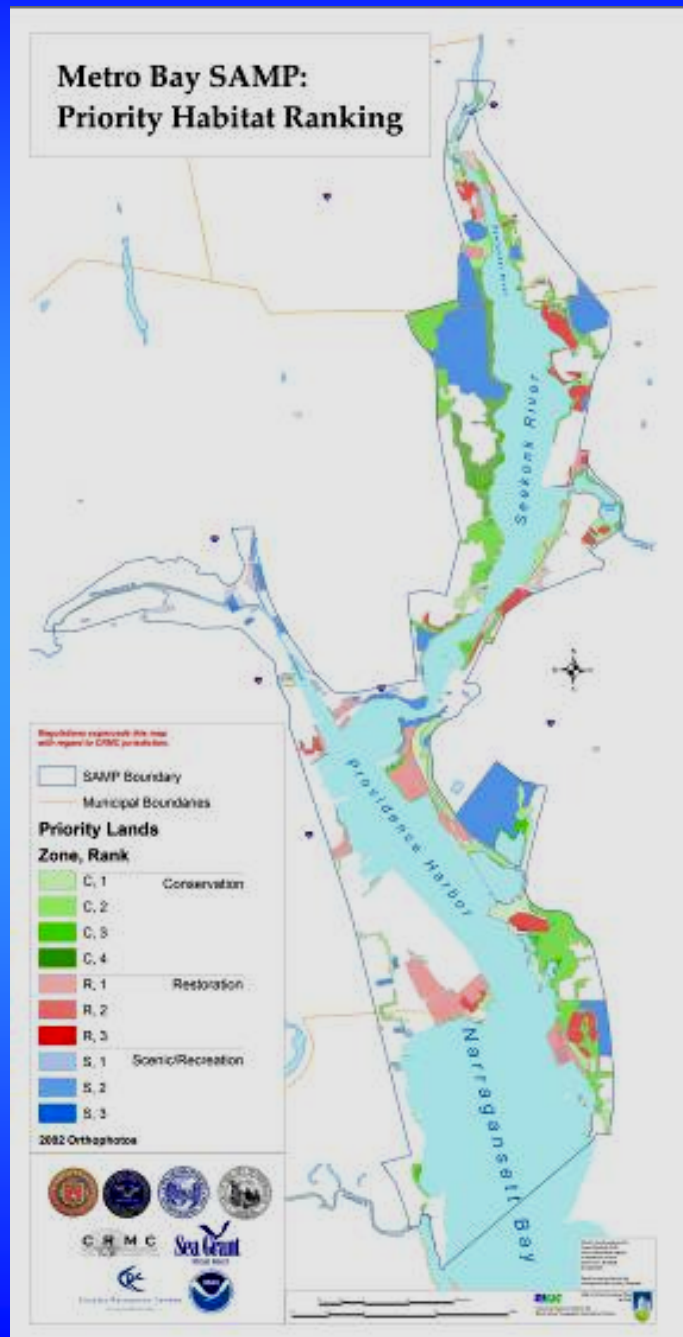
An Amendment to the Providence Harbor Special Area Management Plan



Adopted by the RI Coastal Resources Management Council
on October 10, 2006

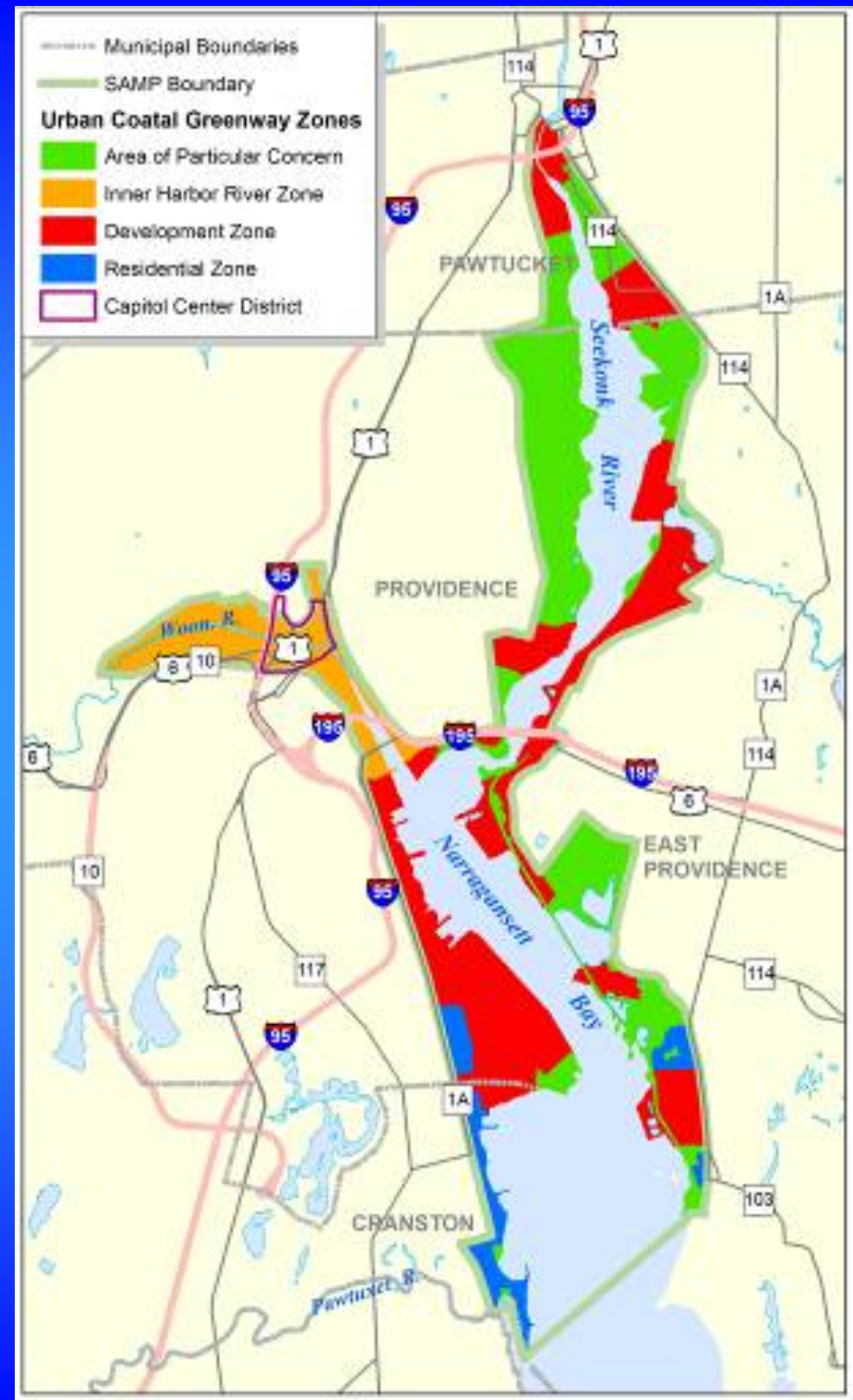


Multiple Data Set Analyses to Determine UCG Zones



UCG Zones

- Areas of Particular Concern
- Inner Harbor and River Zone
- Capitol Center District
- Development Zone
- Residential Zone



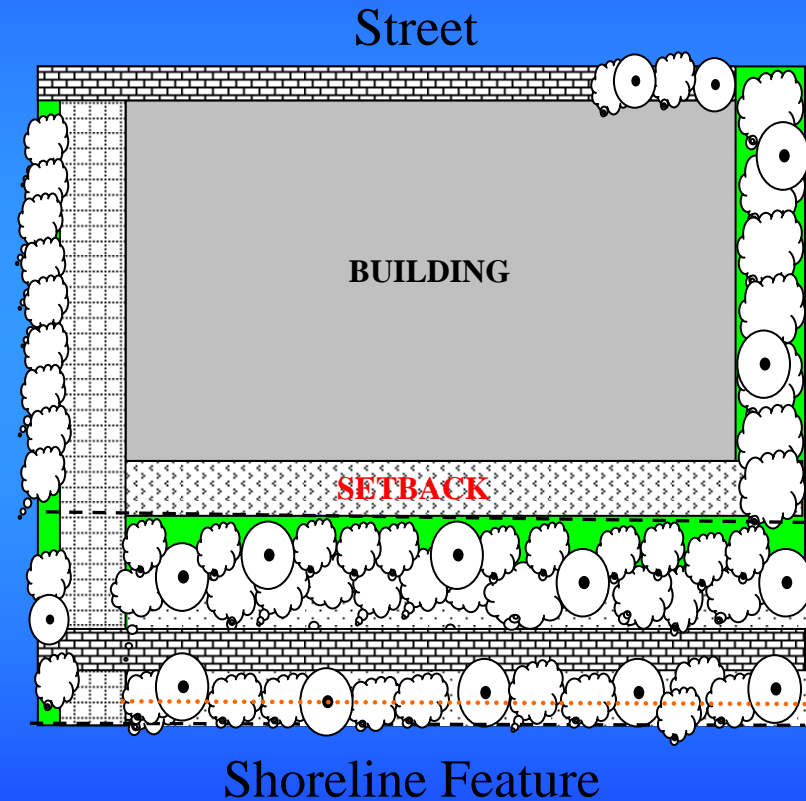
Main Goals of the UCG Policy

- **15% Vegetation of Entire Development Site**
 - Sustainable Vegetation
- **100% Stormwater Management**
- **Public Access**
- **Flexible Greenway Widths**
 - by UCG Zone
 - Exceptions for “Small Parcels”
 - Compensation Options
(i.e., public amenities or habitat restoration fund)



15% Vegetation Requirement

- Sustainably landscaped.
- May include green roofs, rain gardens, landscaping elements, surface stormwater treatments, etc.
- “Appropriate mix” of trees, shrubs, & low-maintenance grasses.



Stormwater Management Requirement

- Onsite treatment of water quality volume (first 1 inch from impervious surfaces)
- Addresses 80% TSS removal standard



Stormwater Management Requirement

- Use of Low Impact Development (LID) practices (i.e., bioretention, filter strips, green roofs, porous pavement, etc.) and other methods that support infiltration and groundwater recharge.



Source: Claytor 2005

Stormwater Management

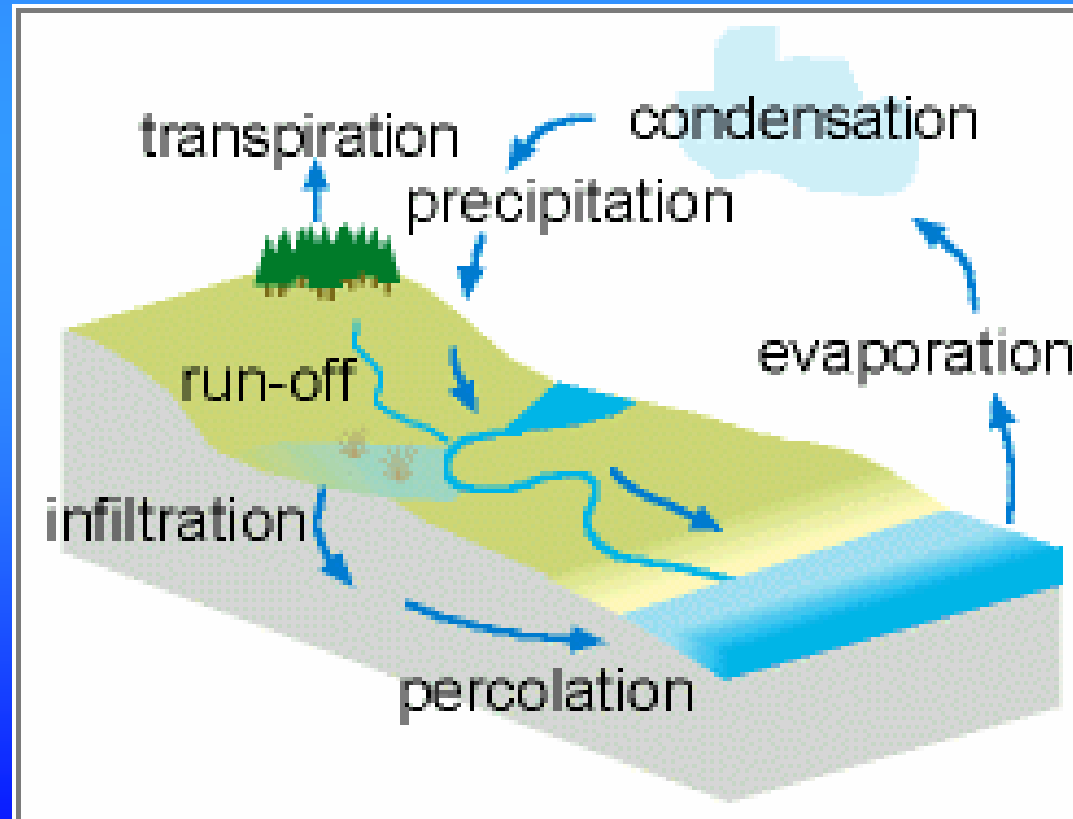
“Applicants shall incorporate LID techniques such as filter strips, vegetated swales, vegetated detention ponds, bioretention areas, stormwater infiltration planters, green roofs, etc. to the maximum extent practicable.”

(UCG Section 150.1)

Low Impact Development

- Stormwater management strategy aimed at maintaining or restoring the natural hydrologic functions of a site:

- Infiltration
- Groundwater recharge
- Runoff volume, peak flows and T_c
- Water quality



Low Impact Development

- Uses small-scale, distributed practices to manage runoff close to source
 - Bioretention
 - Vegetated Swales
 - Green Roofs
 - Stormwater Planters
 - Permeable Paving
 - Rainwater Collection



Low Impact Development is Multipurpose!

- Many LID practices are appropriate for urban retrofits on space-constrained sites
- Many LID practices utilize vegetation – can be counted towards 15% site vegetation requirement and they function as desirable landscape amenities

The UCG Policy Will...

1. Streamline the permitting process for appropriate redevelopment and make the process more predictable;
2. Increase public access to and along the coast; and
3. Protect ecologically valuable habitat corridors and coastal waters within the urban setting.



Save The Bay Center, Fields Point



Initial planting – May 2005



June 2006

Photos courtesy of Save The Bay



Save The Bay Center, Fields Point



Green Roof



Bioretention



Permeable Parking Area

Additional Efforts

- Incorporating LID into Greenwich Bay SAMP
- CRMC Section 300.6 revisions: LID as primary means of stormwater management (CRMC jurisdiction)
- RI General Assembly legislation H6143 (Smart Development for a Cleaner Bay Act of 2007): LID as primary means of stormwater management (statewide)



Thanks to: Jim Boyd - CRMC

Jen McCann - URI CRC

Contact us for more information

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