

Smart Growth and Our Commonwealth's Infrastructure

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March 25, 2009

MASSACHUSETTS
SMART GROWTH
ALLIANCE

- 
- **Unemployment**
 - **Foreclosures**
 - **Energy Costs**
 - **Public Debt**
 - **Transportation**
 - **Water**
 - **Economic Competitiveness**
 - **Climate Change**
 - **Health Care**
 - **Education**

SCARCITY



Founding Alliance Members

- **Boston Society of Architects**
- **Citizens' Housing and Planning Association (CHAPA)**
- **Conservation Law Foundation**
- **Environmental League of Massachusetts**
- **Fair Housing Center of Greater Boston**
- **MA Association of Community Development Corporations**
- **Metropolitan Area Planning Council**

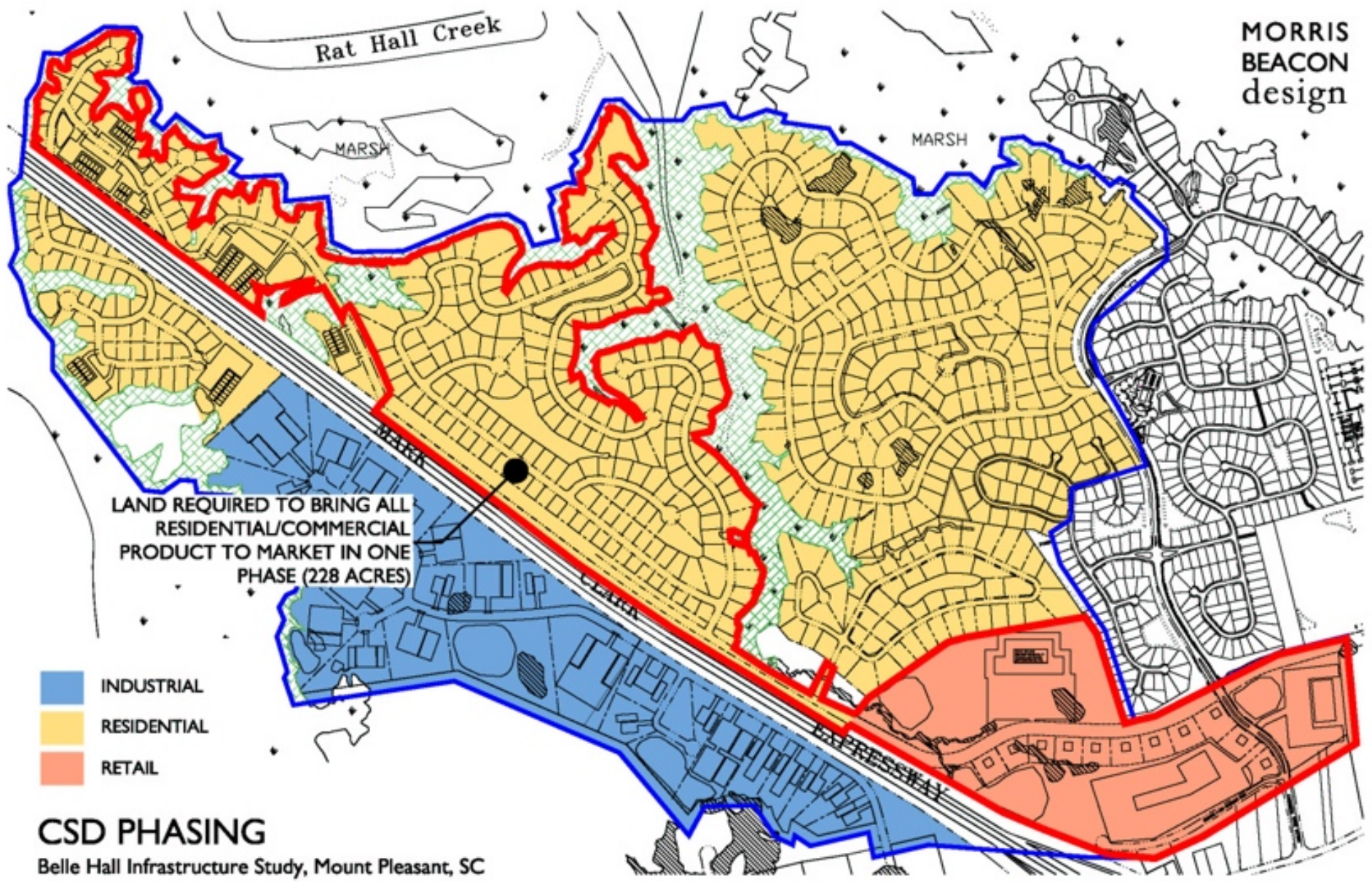
What We Do

- **The Massachusetts Smart Growth Alliance promotes healthy and diverse communities, protects critical environmental resources and working landscapes, advocates for housing and transportation choices, and supports equitable community development and urban reinvestment. Blah blah blah blah Blah blah blah blah Blah blah blah blah Blah blah blah blah Blah blah blah blah**



Connecting People to Place

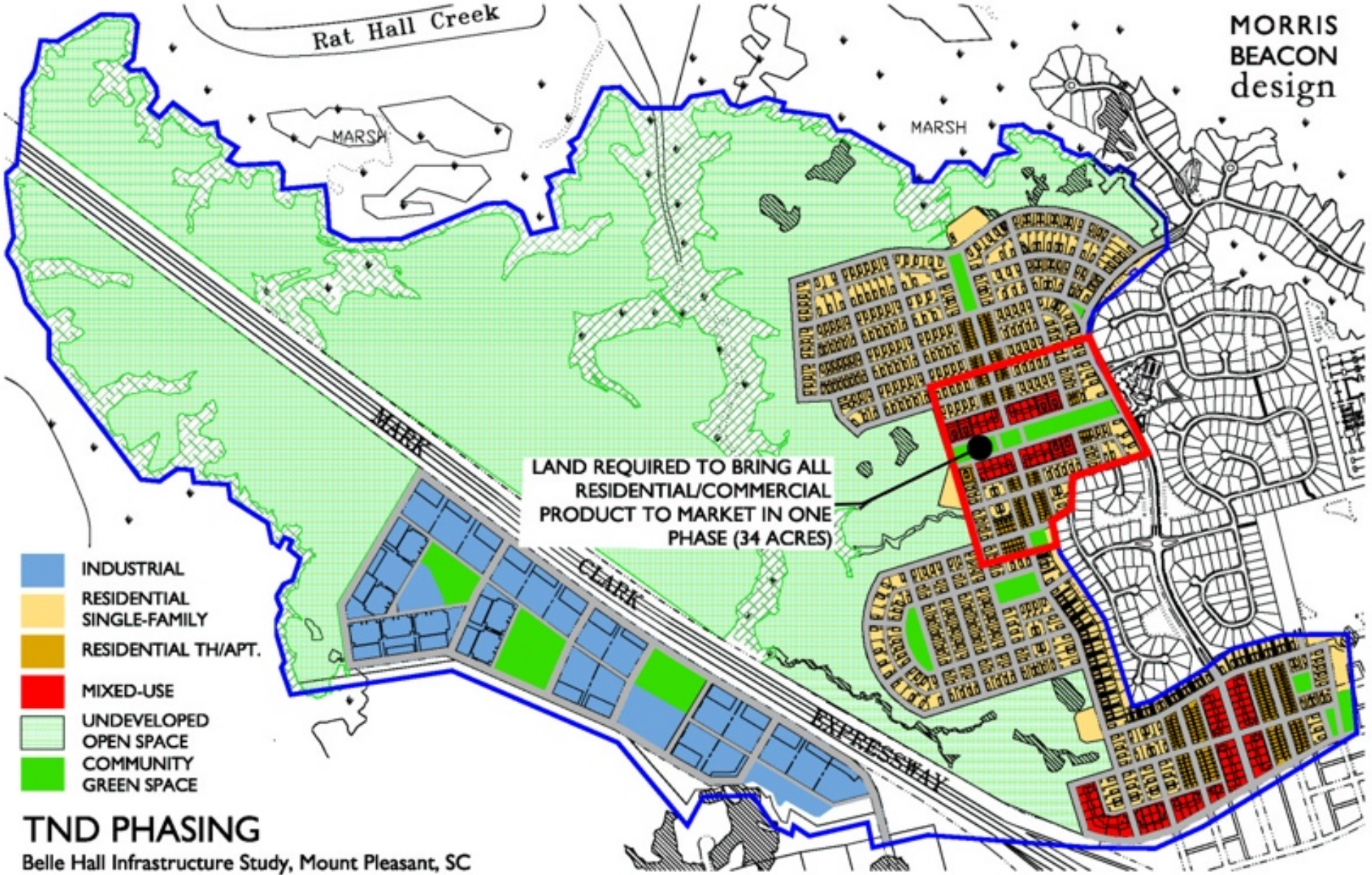




LAND REQUIRED TO BRING ALL
RESIDENTIAL/COMMERCIAL
PRODUCT TO MARKET IN ONE
PHASE (228 ACRES)

- INDUSTRIAL
- RESIDENTIAL
- RETAIL

CSD PHASING
Belle Hall Infrastructure Study, Mount Pleasant, SC



LAND REQUIRED TO BRING ALL
RESIDENTIAL/COMMERCIAL
PRODUCT TO MARKET IN ONE
PHASE (34 ACRES)

- INDUSTRIAL
- RESIDENTIAL SINGLE-FAMILY
- RESIDENTIAL TH/APT.
- MIXED-USE
- UNDEVELOPED OPEN SPACE
- COMMUNITY GREEN SPACE

TND PHASING

Belle Hall Infrastructure Study, Mount Pleasant, SC

Phase I initial investment

	ACRES	COST/ACRE	TOTAL COST
Belle Hall			
TND:	34	\$176,749	\$6,010,000
Belle Hall			
CSD:	228	\$97,591	\$22,250,000

Phase I of the conventional scenario costs 270% more than the Phase I scenario of the TND



**Smart Growth is
democratic.**

**Smart Growth
encourages
participation.**

- **Focus Groups: 2001**
- **Vision Report: November 2002**
- **Trip to DC & Zoning Overlay Campaign: 2003**
- **North Canal Charrette: 2004**
- **Alleyways and Canals: 2005**
- **40R District: 2006**



Lawrence Alleyways



Photos courtesy of Lawrence
CommunityWorks



Washington Mills, Lawrence

Photo courtesy of Architectural Heritage Foundation



**Smart Growth
promotes fairness
and complete
communities.**

It expands opportunity.

Living on a sphere, 'Smart Growth' is an oxymoron.

The choice is not between growth and no growth. It's between managing growth intelligently or allowing it to proceed haphazardly.

Lots nearly twice as big:

1970-1985: 0.3



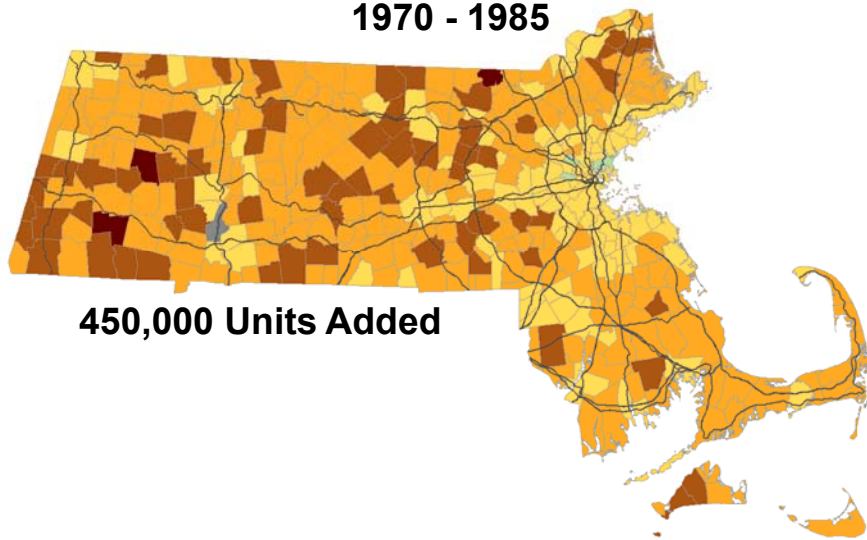
1985-2000: 0.6

acres developed / new unit

Fewer Homes on Larger Lots = Housing Shortage

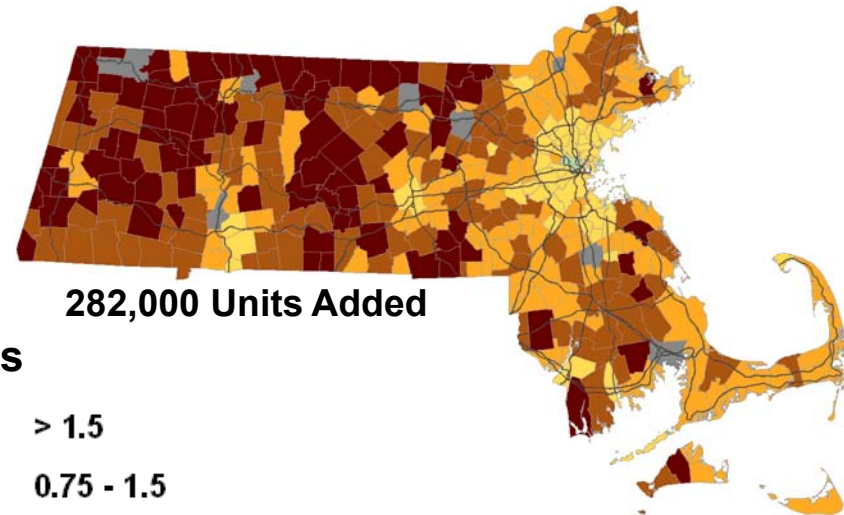
Acres Developed per New
Housing Unit

1970 - 1985



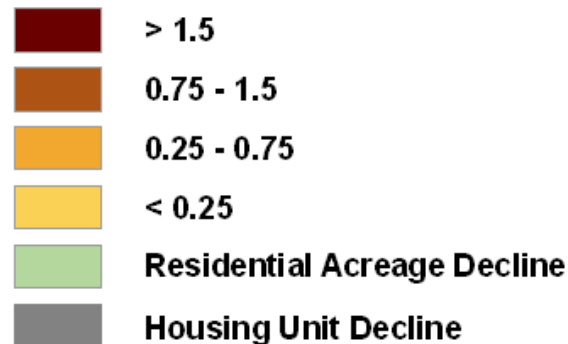
450,000 Units Added

1986 - 2000



282,000 Units Added

Acres



Zoning: 1 Unit Per Acre



Photo: Visualizing Density, Lincoln Land Institute



Photo: Visualizing Density, Lincoln Land Institute

Fueling Demand for Expensive and Inefficient Infrastructure

Suburban Lot Size

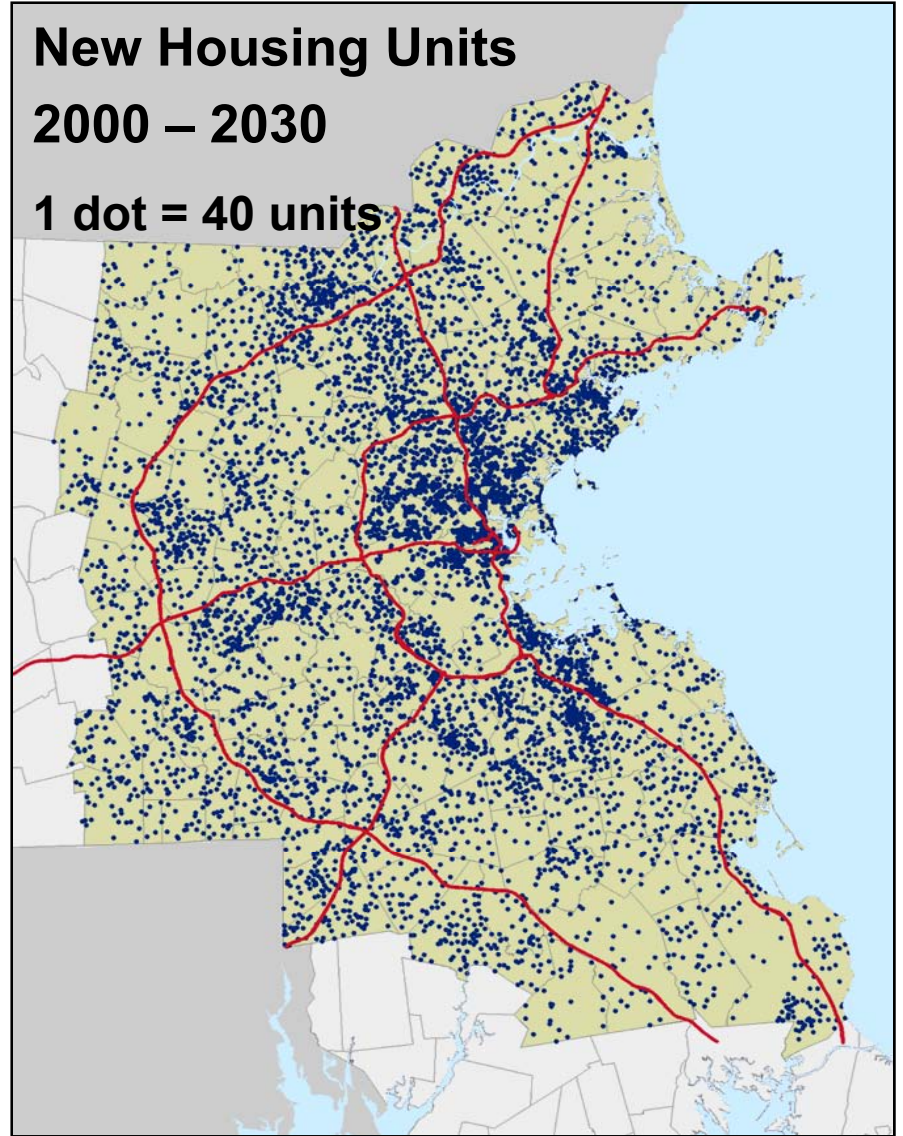
% of new units,
2000 - 2030



New Housing Units

2000 – 2030

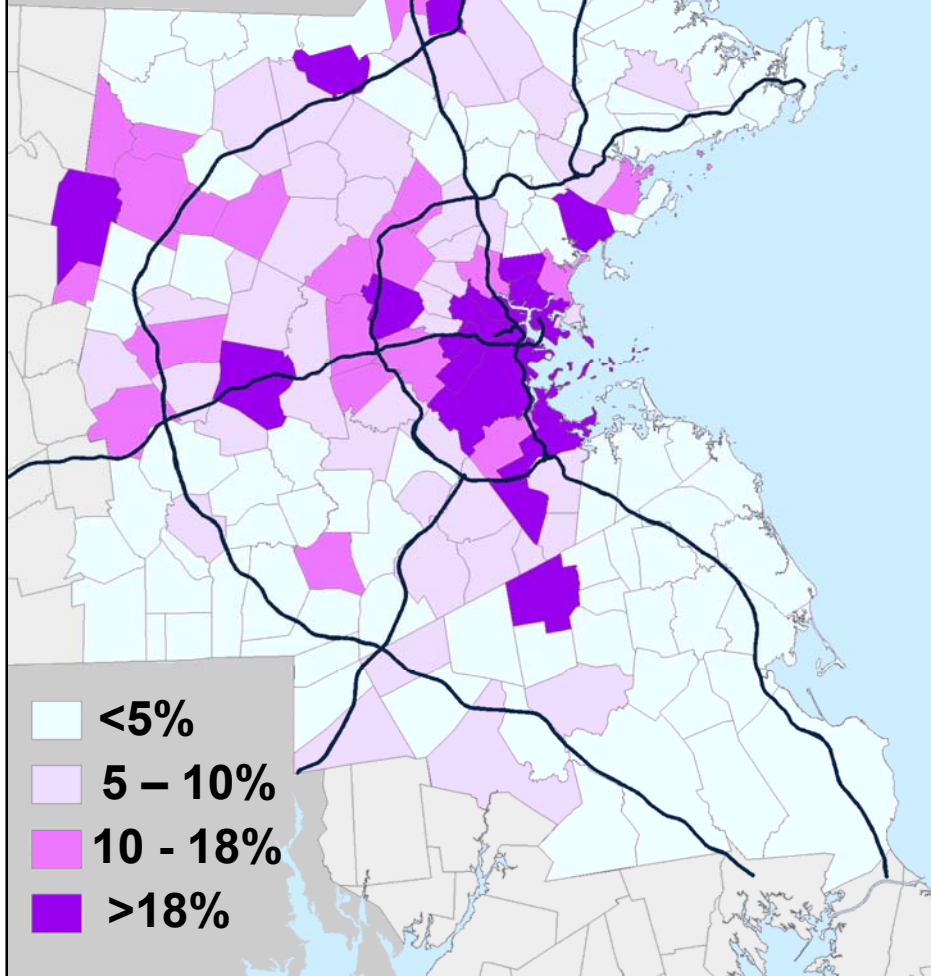
1 dot = 40 units



A photograph of a modern urban street scene. In the foreground, there is a concrete sidewalk with a yellow tactile paving strip. A black metal fence runs along the edge of the sidewalk. Behind the fence is a road. In the background, there are multi-story apartment buildings with balconies and windows. The sky is clear and blue. The text "Balancing regional needs versus local instincts." is overlaid in the center of the image.

**Balancing regional
needs versus local
instincts.**

Populations of Color
% by town, 2000
Region = 18%



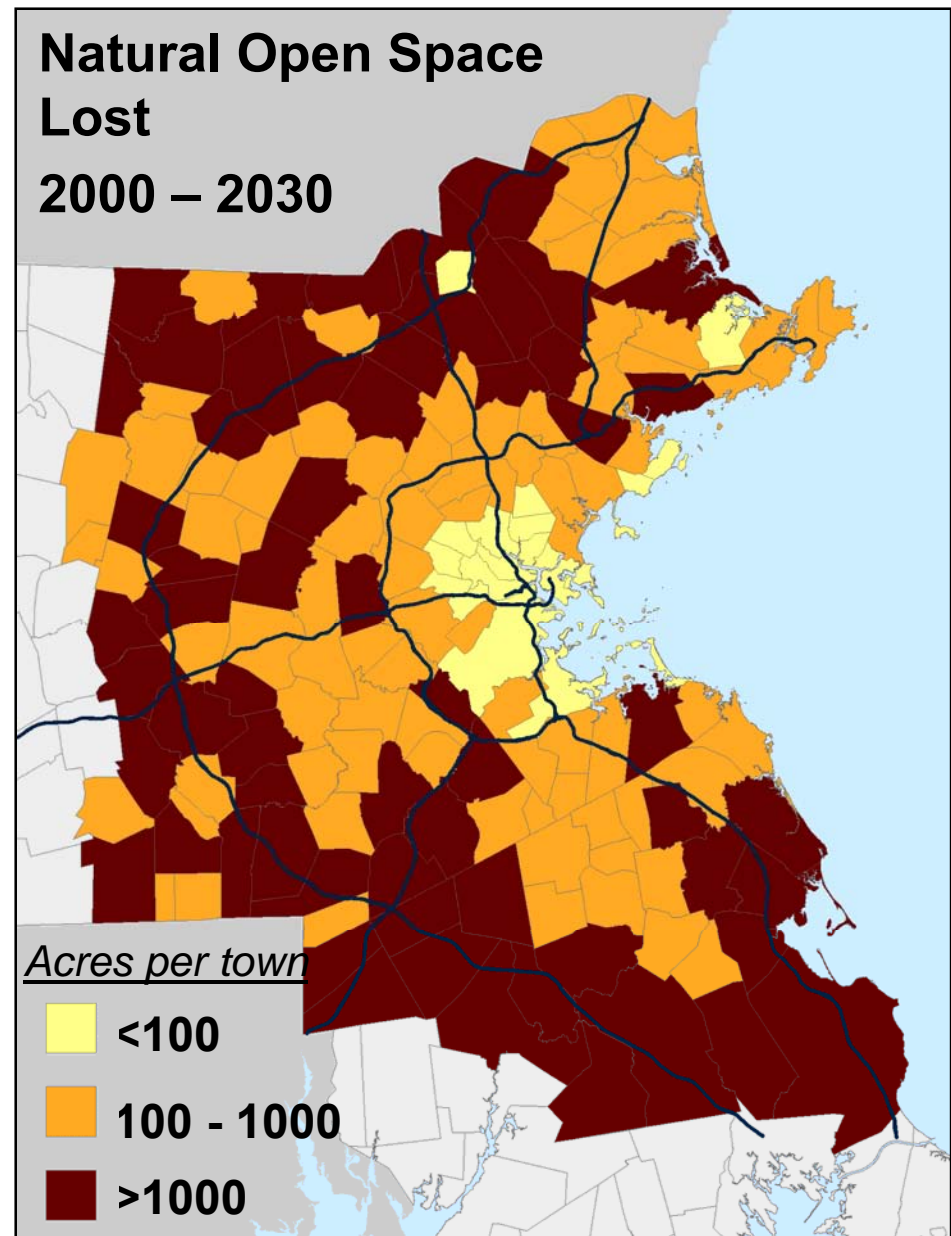
Barriers to Mobility

- **Persistent segregation**
 - **Inadequate homeownership opportunities, especially for first-time homebuyers and minorities**

Loss of Open Space

= Degradation of Air and Water Quality, Loss of Landscape, Exacerbates Climate Change

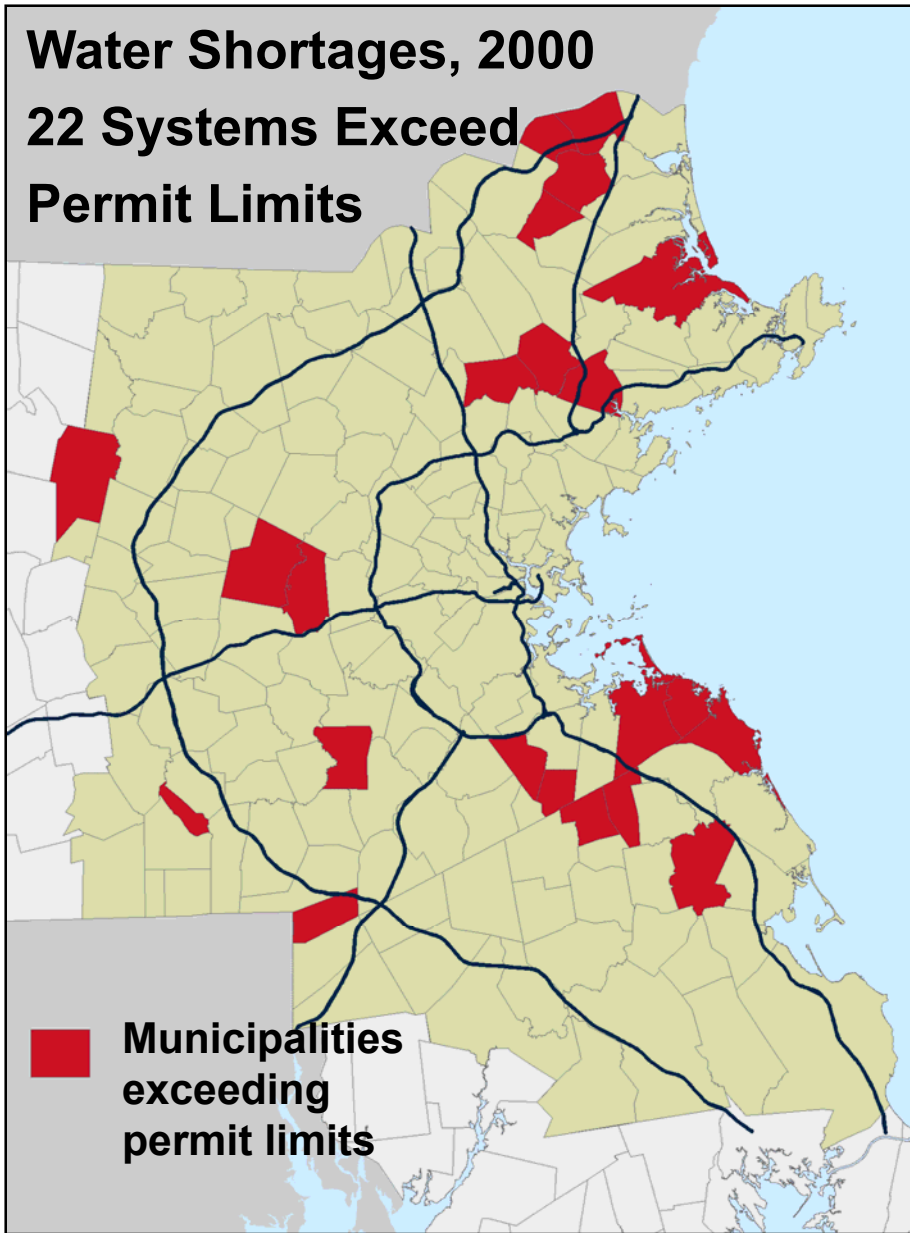
- 40 Acres per day statewide
- Metro Boston alone will lose 152,000 acres by 2030




Water Shortages, 2000

22 Systems Exceed

Permit Limits

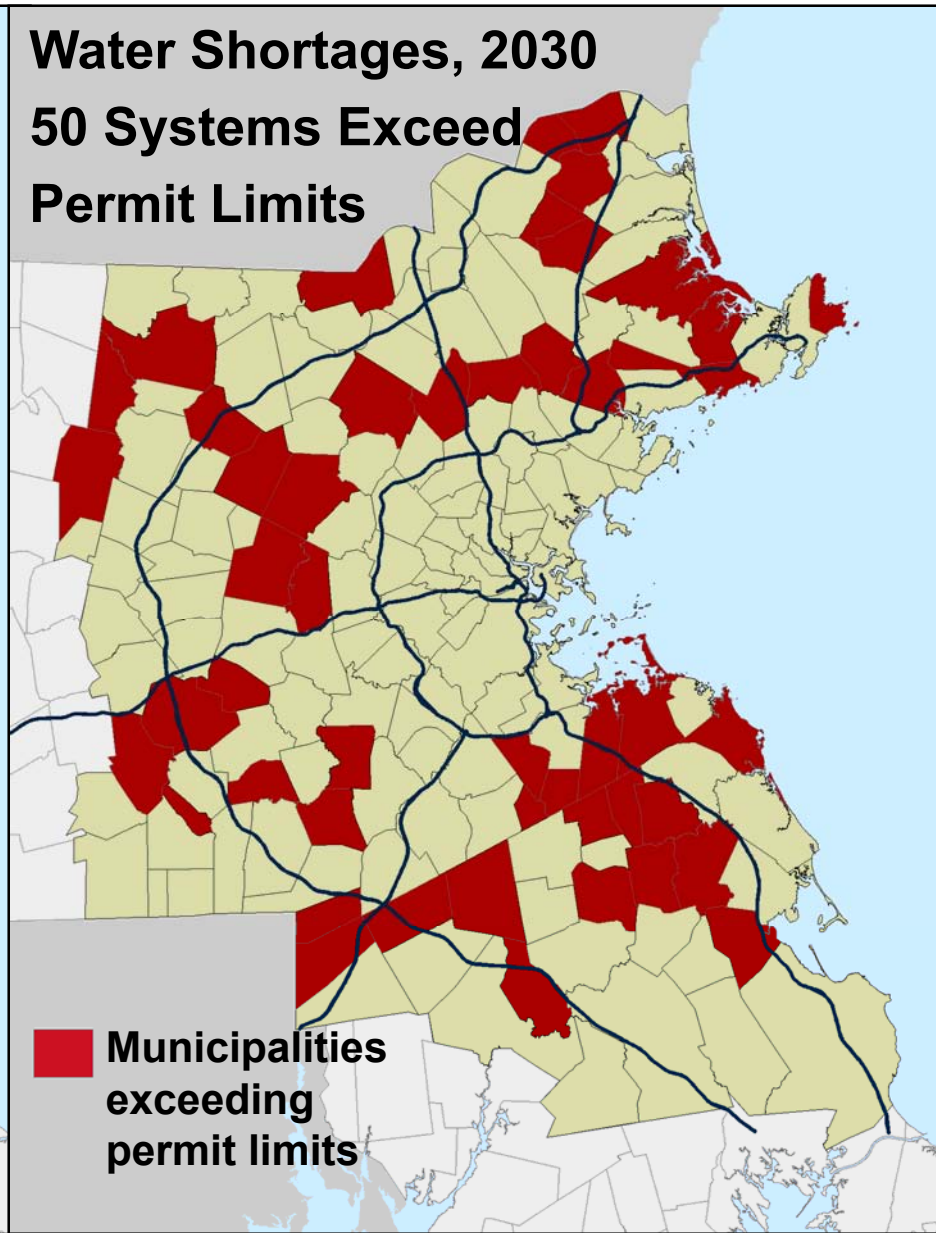



 Municipalities
exceeding
permit limits

Water Shortages, 2030

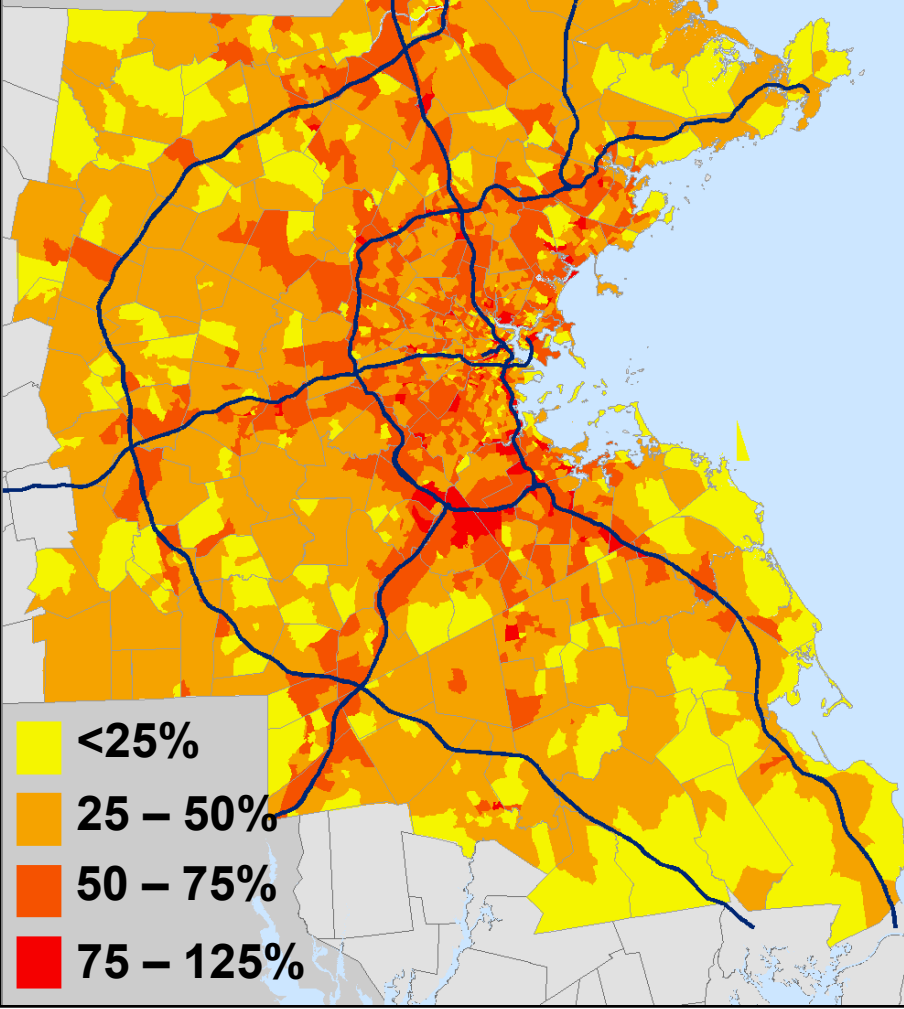
50 Systems Exceed

Permit Limits

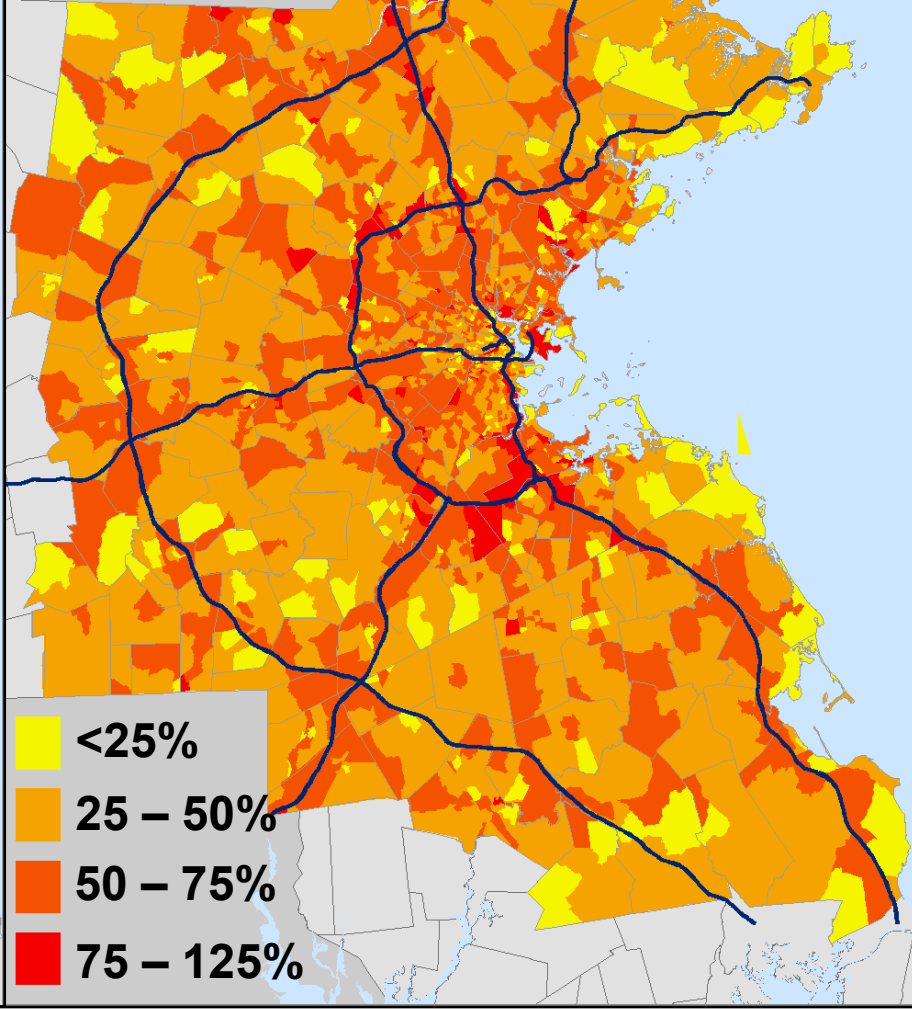


 Municipalities
exceeding
permit limits

**Traffic Congestion,
2000
(% Capacity)**



**Traffic Congestion,
2030
(% Capacity)**

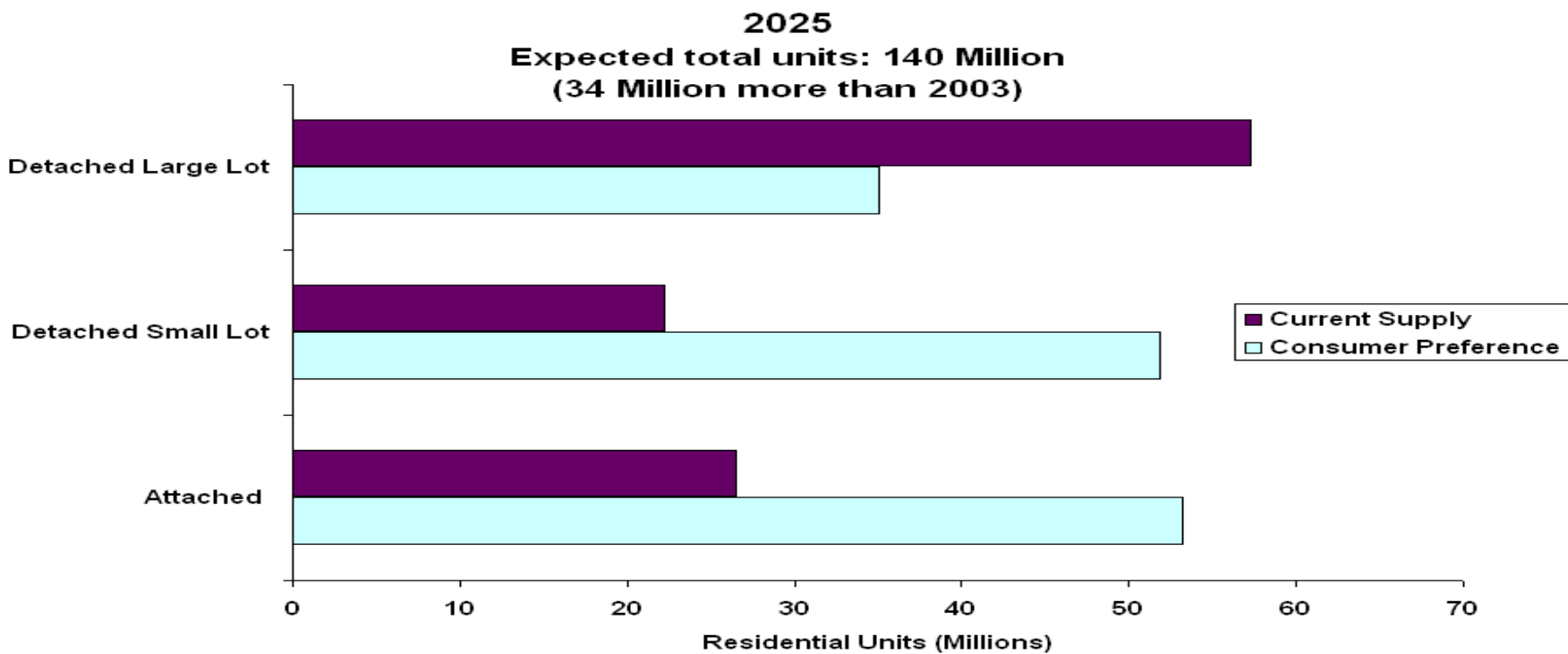


Market demand for smart growth: It's here and growing

- **Consumer surveys show about one-third of the home buying market wants the smart growth product**
 - **Private sector reports (Robert Charles Lesser & Co. Compiled 2007)**
 - **Regional/Metropolitan organizations preference surveys (SMARTAQ (Atlanta). 2006.)**
 - **Smart growth studies (SGA/NAR. 2004)**
 - **Homebuilder surveys (NAHB. 2002)**
 - **Academic research (Dowell Meyers. 2001)**



Housing supply by type & preference, 2025



Type	Supply – % (units)	Preference – % (units)	Gap (Units)
Lg. Lot (>7k s/f)	54% (76 m)	25% (35 m)	-22 m
Sm. Lot (<7k s/f)	21% (29 m)	37% (52 m)	30 m
Attached	25% (35 m)	38% (53 m)	26 m





Transportation Crisis

- Turnpike carrying \$2.2 B Big Dig debt
- MBTA facing \$161M operating deficit

Systems Thinking

- **Mobility**
- **Connectivity**
- **Proximity**

“Transportation choice” should be goal, along with clean and dependable service that runs often

SMART GROWTH MYTHS:

- It's "BIG."
- It's top-down.
- Design solves everything.

In Fact, smart growth can be:

- Decentralized.
- Democratic.
- Increase choice.

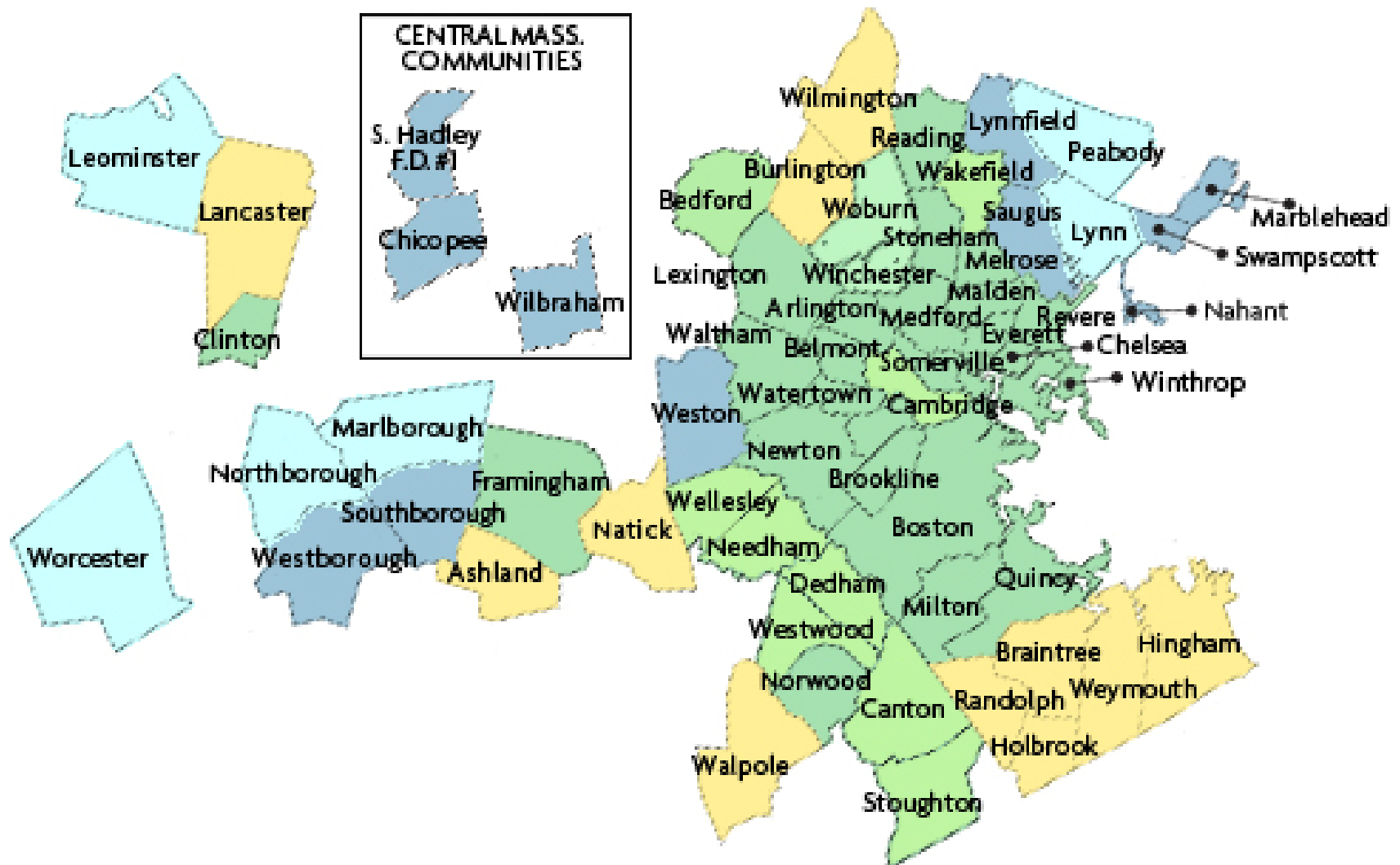


MWRA SERVICE AREA

- Water only
- Partial/emergency water only
- Sewer only
- Full sewer, partial/emergency water only
- Water and sewer

CENTRAL MASS. COMMUNITIES

S. Hadley F.D.#1
Chicopee
Wilbraham



MWRA Expansion Rationale

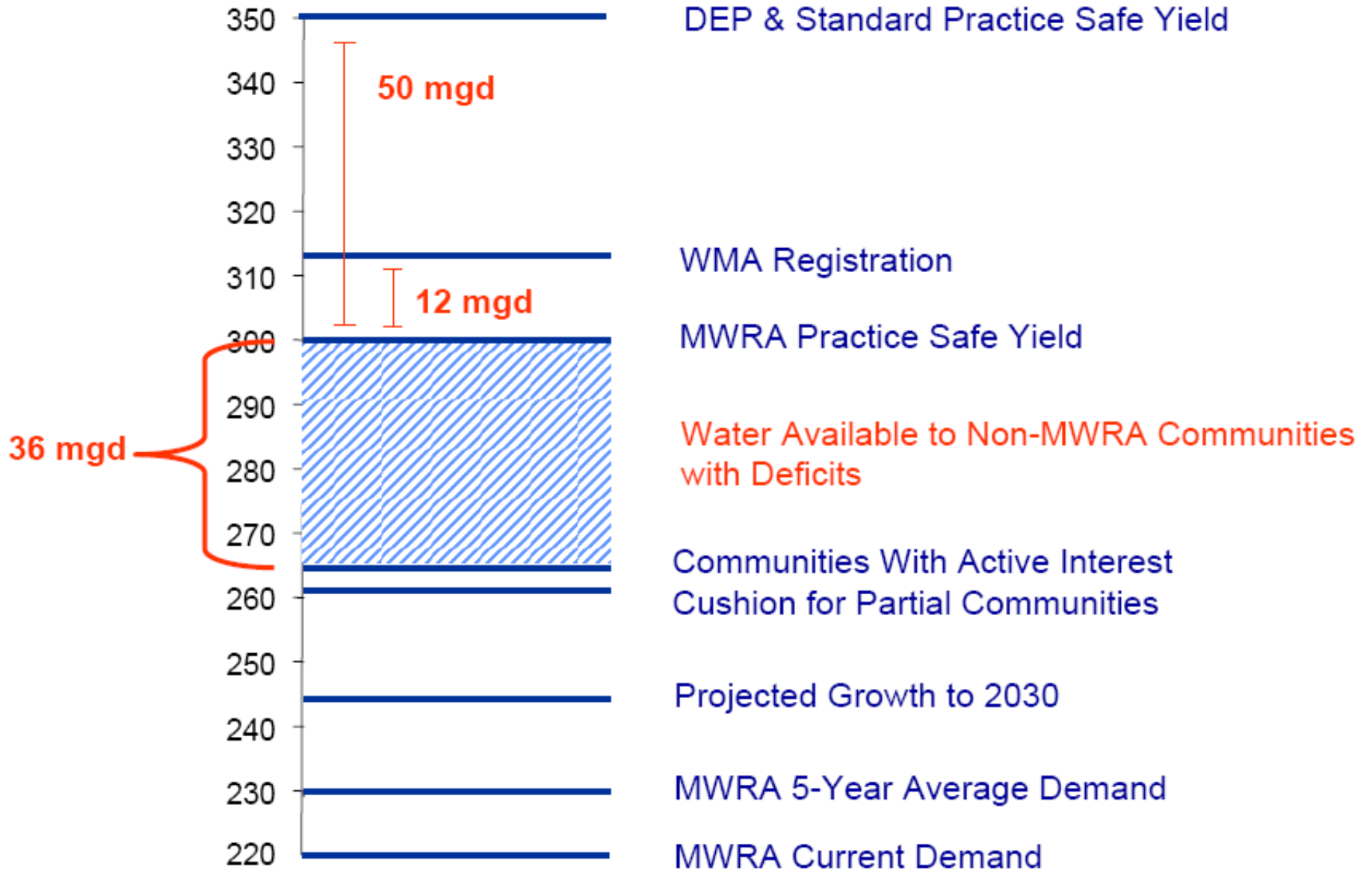


Why Are We Here?

- Confluence of these dynamics:
 - MWRA has excess capacity because of conservation measures
 - MWRA's service area is surrounded by watersheds (or portions of watersheds) that are highly stressed
 - MWRA has a need for new sources of revenue as pressure on rates continues



Conservatively, We Have 36 MGD Available



Furthermore:

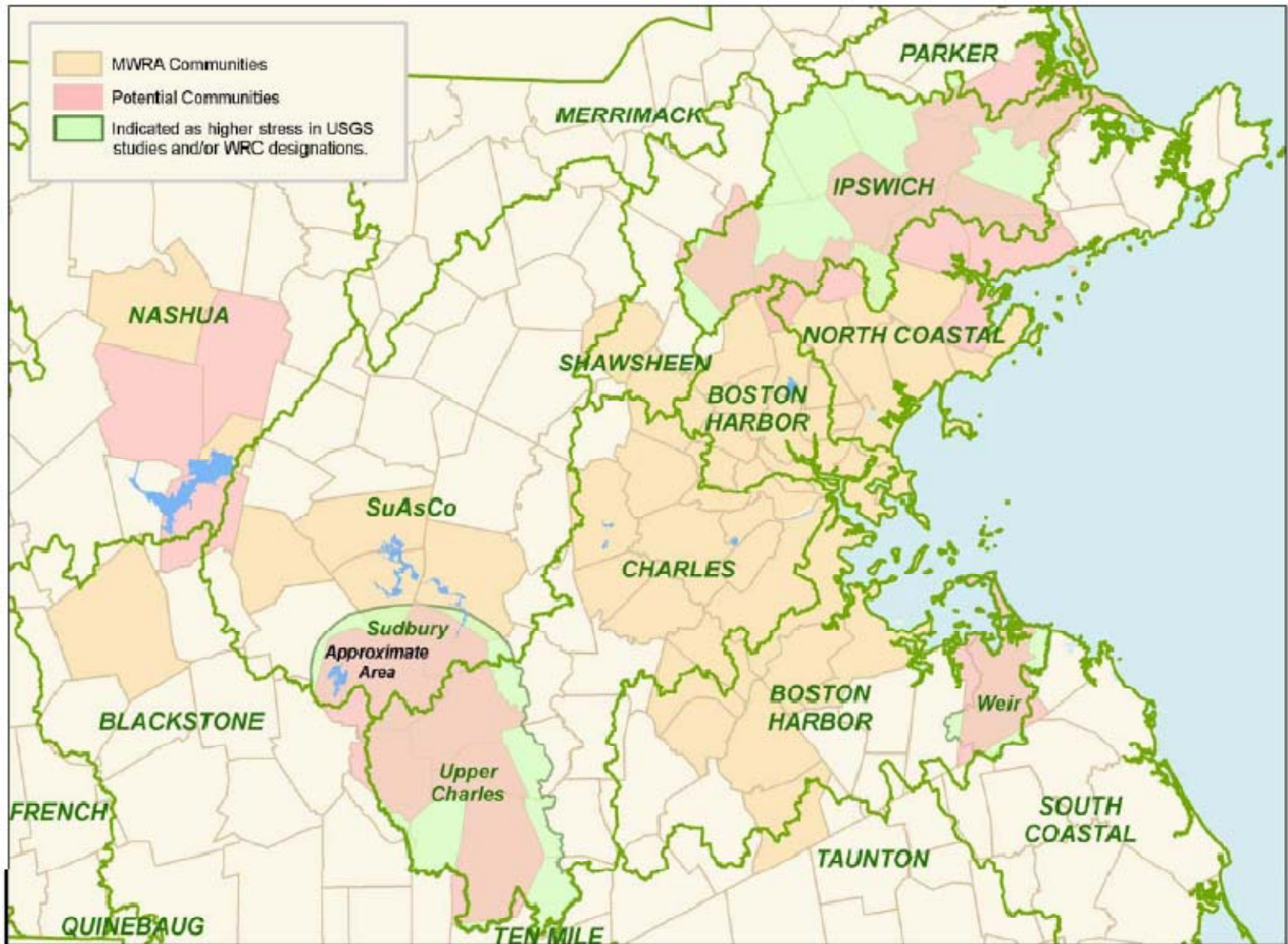
- **MWRA contends that they are seeing a 3 mgd decrease in demand every year**
- **Spilled more than they sold last year**

MWRA Proposal for 36 mgd excess:

- 1. Sell 12 mgd**
- 2. Increase releases**
 - 6 mgd Swift**
 - 6 mgd Nashua**
- 3. Keep last 12 mgd in reserve**



MWRA Water Service Area and Potential System Expansion



MWRA Accepts Smart Growth Criteria if:

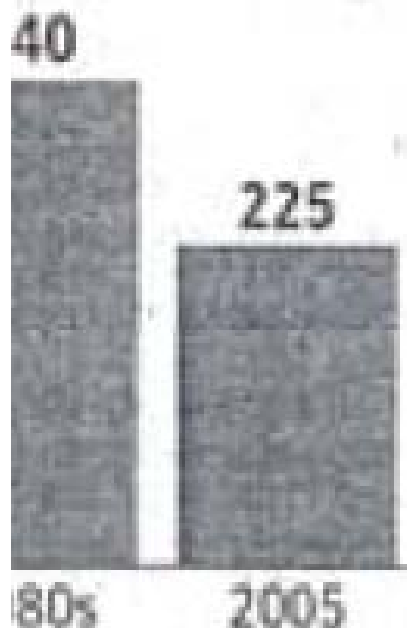
- It is not an unduly prohibitive barrier to entry for municipalities**
- There is administrative capacity to evaluate and implement the criteria**

- MWRA's proposition:
 - By properly coordinating use of MWRA's multi-year reservoirs with groundwater withdrawals in stressed rivers (which often support high population densities), more optimum water resource planning can occur

But state officials should also use water to advance the sustainable development principles that underlie the state's smart-growth strategy. A strong preference should be established for granting MWRA membership to towns planning to steer growth toward transit centers or redevelopment of built-up areas, and away from the state's vanishing open space. "We endorse the principles of smart growth," said Fred Laskey, the MWRA executive director. "How to implement it has to be figured out."

REPRODUCED FROM THE METROPOLITAN AREA PLANNING COUNCIL REPORT

MWRA WATER Demand in millions



per day

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day.
Handled correctly, a modest expansion could achieve both environmental and smart-

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FOR WISDOM

growth goals, by relying at least partially on MWRA water. North Shore communities could depend less on wells that draw from the same groundwater sources as the usually depleted Ipswich River. Both wildlife habitat and river recreation will benefit if the Ipswich and other stressed river basins in Eastern Massachusetts get some relief.

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FOR MWRA WATER

Demand in millions



politan Area Planning Council, representatives of the river watershed associations, environmental activists, and others to offer their views. The MWRA expansion proposal could be a catalyst for the formation of a long-term policy to ensure that water distribution is in line with transportation decision-making and housing development is curbing the sprawl that squanders the two most basic natural resources: water and land.

Two Paradigms

Infrastructure provision vs. systems model

- **MWRA:**
 - Water quality
 - Volume of flows
 - Price
 - Facilities, etc.
- **Alliance:**
 - Infrastructure management concerns important, but also:
 - Articulate local, regional and state land-use objectives
 - Ensure that state capital investments are consistent with sustainable development goals, coordinated among agencies, and are mutually reinforcing
 - What kind of communities do we want?

1. Elevate the Issue

- **Convene a Water Resources Summit. EEA should convene a summit that includes senior-level representatives of all relevant state, municipal, and non-government interested parties. The goal of this summit should be to build on the 2004 Water Policy Task Force effort and produce a set of recommendations, including any necessary statutory measures, that can be acted upon to put the Commonwealth onto a path of long-term sustainable water resources management.**
- **Engage more stakeholders.**

2. Grow Smart

- **Fostering smart growth is crucial to sustainably managing our water resources. Smart growth communities are compact and pedestrian-friendly, and offer a mix of uses as well as housing and transportation choices. Smart growth communities are significantly less taxing on our water resources than conventional development. Important smart growth strategies include encouraging low-impact development (LID) techniques, zoning reform, and an aggressive program for repairing old and leaky infrastructure, while not funding infrastructure that supports sprawling development.**

3. Keep Water Local

- **Keeping groundwater, stormwater, and wastewater local (i.e., within the same watershed) should be a central tenet of our water programs. The goal is to replicate the natural hydrological cycle as much as possible in our greatly altered and re-engineered landscape.**

4. Conserve and Reuse

- **The Commonwealth has the ability through a number of programs to require and/or encourage communities to conserve and reuse water. In some communities, water usage doubles in the summer because of lawn watering. This dramatic increase in non-essential water use leaves less water for essential uses and for maintaining healthy streamflows in our rivers, and it hinders economic development. State policies and programs should focus on both incentives and regulations to reduce the most inefficient aspects of water use.**

5. Govern Effectively

- **The staffing of the Commonwealth's water resource agencies should be consolidated or at a minimum better coordinated, funding must be increased, important research and technical work must be completed to develop watershed-specific standards for streamflow, and greater effort must be undertaken to work collaboratively with the Legislature, municipalities and other stakeholders.**

MWRA's Expansion Proposal:

Exemptions:

- Communities simply replacing local water supply sources. For example, if the community is seeking MWRA water to replace but not supplement its local supply (such as Reading, which pursued admission to MWRA to reduce impacts of its withdrawals on the Ipswich River Basin); OR
- Communities acquiring a negligible amount of water equivalent to the water needs of a specified percentage (perhaps 5%) of the community's existing housing stock, OR
- Communities that are largely built-out (little vacant developable land remains).

The Menu Approach:

1. Require density benchmarks for new growth and monitor municipal performance on an annual basis.
2. Implement a zoning based system with compact development districts combined with OSRD requirements.
3. MWRA determination of consistency with the Commonwealth's Sustainable Development Principles.

Suggested Criteria by MA Smart Growth Alliance:

- Is there a section(s) of the municipality's proposed water service area (PWSA) zoned for dense development? For housing development, density in excess of the the Chapter 40R densities for multi-family (20 units per acre), single-family (8 units per acre), and 2- and 3-family housing (12 units per acre) is presumptively sufficient.**
- If so, is mixed use development allowed?**
- If residential is a permitted use in the section(s) designated for dense development, is multi-family housing allowed?**
- Does the municipality have the ability to discharge additional wastewater from new development in the section(s) zoned for dense development?**
- Are there impediments to dense development in this section(s), such as excessive frontage, setback or parking requirements?**

Suggested Criteria (Cont.)

- **Does the community have transit-oriented development and/or multi-mode transportation options?**
- **Are there sections of the PWSA zoned for low-density commercial development?**
- **If a section(s) of the PWSA is zoned for single-family housing, is cluster zoning mandated or encouraged (through by-right development or a density bonus)?**
- **Is low-impact development to increase water recharge a requirement for new developments and redevelopment in the municipality?**
- **Has the town implemented the 2006 Massachusetts Water Conservation Standards?**
- **Other factors relating to whether the municipality's rules and practices are consistent with the Commonwealth's Sustainable Development Principles, Executive Order 385, and the EEA Water Policy. These include:**
 - **whether supplying MWRA water will effectively relieve pressure on a highly stressed watershed**
 - **is the town seeking to have the MWRA water satisfy the town's increased summer demand principally due to lawn watering**
 - **is the community discharging wastewater out of basin, and if so, has it implemented inflow and infiltration measures**
 - **does the town have a water reuse program**

A New Paradigm

- **Encourages local water infiltration and treatment**
- **Adoption of LID practices**
- **Zoning reform and changes**
- **Foster innovation**

Example: Spot Sewering

Sudbury Project w/CWRA:

- **Allow for village multi-use density zones serviced by a limited size, groundwater discharge, wastewater treatment plant.**
- **By limiting the size, sewerage is only provided to the zone, and by employing smart growth techniques like transfer of development rights, growth can be accommodated while village open space character is preserved.**
- **Additionally, treating and disposing of wastewater in the subwatershed of origin protects the natural water cycle by increasing groundwater recharge and replenishing and sustaining drinking water sources.**
- **Groundwater discharge also increases treatment options for the removal of pharmaceuticals and personal hygiene products from the waste stream.**

Union Crossing properties



50 Island Street





View looking south on Union Street with new entry to Building 4 and café/restaurant

Union Crossing: Green/ Sustainable Features

- **LEED for Homes Platinum-certifiable** design (Building 9)
- Re-use of historic mill buildings close to shops, schools, services, and public transit will create a **mixed-use, walkable community**
- Incubator space for **clean tech companies** and university satellites
- Unprecedented **energy-efficiency** for an historic mill + **on-site renewables** = significantly lower operating costs
- **80% less energy for heating and 50 % less CO2** than a conventional historic mill rehab project
- **Healthy living environment** - indoor air quality, sound mitigation, day-lighting, healthy materials and finishes
- **Public access + environmental restoration** - new green space and access to the river, storm water management, native habitat

Union Crossing: Green/ Sustainable Features

- Proven programs for **financial and physical health**, including “wallet wise” seminars, Individual Development Accounts, health screening room, access to fresh food (community gardens and Community-Supported Agriculture).
- Tenant education programs, including youth-led outreach and **incentives for recycling, energy conservation, green cleaning.**
- **Wireless access** throughout the building with portal for program activities and building performance data.



View of new roof deck at the Dye Works building overlooking the Merrimack River



Connecting People to Place

