Smart Growth and Our Commonwealth’s Infrastructure
André Leroux
March 25, 2009
- Unemployment
- Foreclosures
- Energy Costs
- Public Debt
- Transportation
- Water
- Economic Competitiveness
- Climate Change
- Health Care
- Education
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.
Connecting People to Place
LAND REQUIRED TO BRING ALL RESIDENTIAL/COMMERCIAL PRODUCT TO MARKET IN ONE PHASE (228 ACRES)

CSD PHASING
Belle Hall Infrastructure Study, Mount Pleasant, SC
## Phase I initial investment

<table>
<thead>
<tr>
<th></th>
<th>ACRES</th>
<th>COST/ACRE</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belle Hall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TND:</td>
<td>34</td>
<td>$176,749</td>
<td>$6,010,000</td>
</tr>
<tr>
<td>Belle Hall</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CSD:</td>
<td>228</td>
<td>$97,591</td>
<td>$22,250,000</td>
</tr>
</tbody>
</table>

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

The Transect

Determinism & Top-Down Planning?
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

1986 - 2000

282,000 Units Added

Acres Developed per New Housing Unit

1970 - 1985

450,000 Units Added

2000 - 2005

282,000 Units Added

Acres

> 1.5  
0.75 - 1.5  
0.25 - 0.75  
< 0.25  
Residential Acreage Decline  
Housing Unit Decline
Zoning: 1 Unit Per Acre

Photo: Visualizing Density, Lincoln Land Institute
Fueling Demand for Expensive and Inefficient Infrastructure

Suburban Lot Size
% of new units, 2000 - 2030

- 1 acre or more: 70%
- ½ acre: 25%
- ¼ acre: 5%

New Housing Units 2000 – 2030
1 dot = 40 units
Balancing regional needs versus local instincts.
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

Water Shortages, 2030
50 Systems Exceed Permit Limits

Municipalities exceeding 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 (SMARTRAQ (Atlanta). 2006.)
  - Smart growth studies (SGA/NAR. 2004) Homebuilder surveys (NAHB. 2002)
  - Academic research (Dowell Meyers. 2001)

### Housing supply by type & preference, 2025

**2025**
**Expected total units: 140 Million**
**(34 Million more than 2003)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Supply – % (units)</th>
<th>Preference – % (units)</th>
<th>Gap (Units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lg. Lot (&gt;7k s/f)</td>
<td>54% (76 m)</td>
<td>25% (35 m)</td>
<td>-22 m</td>
</tr>
<tr>
<td>Sm. Lot (&lt;7k s/f)</td>
<td>21% (29 m)</td>
<td>37% (52 m)</td>
<td>30 m</td>
</tr>
<tr>
<td>Attached</td>
<td>25% (35 m)</td>
<td>38% (53 m)</td>
<td>26 m</td>
</tr>
</tbody>
</table>

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 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

- DEP & Standard Practice Safe Yield
- WMA Registration
- MWRA Practice Safe Yield
- Water Available to Non-MWRA Communities with Deficits
- Communities With Active Interest Cushion for Partial Communities
- Projected Growth to 2030
- MWRA 5-Year Average Demand
- MWRA Current Demand

36 mgd

50 mgd

12 mgd
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 Communities
- Potential Communities
- Indicated as higher stress in USGS studies and/or WRC designations.
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.”
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