DEVENS
Eco-Industrial Park

www.devensec.com
www.ecostardevens.com
Devens Overview

• 35 miles outside Boston
• 4400 ac. former base
• Superfund Site
• 1993 Sustainable redev.
Why Sustainable Redevelopment?

- Job loss and economic re-development
- Strong emphasis on cleaning up the site and ensuring environmentally responsible redevelopment
- Remediation, monitoring
- Focus on industrial ecology as a strategy – mimic ecological processes (system of industries)
- Environmental protection integrated from the beginning
- 1993 BSA Planning Charette with Surrounding Towns
Planning Charrette to Establish Vision for Devens Future

- sustainability as an integral part of the base redevelopment;
- focus on industrial ecology and a zero-emissions, no waste systems, similar to a biological community;
- protect aquifer, remediation, sustainable agriculture, comprehensive recycling strategy
Devens Overview

- 5.5mil. sq.ft. of dev.
- 5,500+/- jobs created
- 4,400 ac dev/1800 ac. OS
- Top economic development site
- 400 residents
- MassDevelopment - Landowner
- DEC – Regulatory Authority
Devens Today

- ~95 businesses
  - 70% small-medium sized (< 300 employees)
  - Mostly light industrial – manufacturing, distribution
  - Pharmaceutical cluster, almost no retail
Devens Today Cont.....

- Significant infrastructure upgrades to support existing and future businesses
- LEED certified, green building projects
- Significant building re-use
- Low-Impact Development Techniques
- Additional housing
- More focus on eco-industrial park concepts as they occur
Bristol-Myers Squibb

- $1 Billion investment
- Collaboration with MWCC (job training)
- Waste exchange: Microbial exchange with Veryfine
- Exploring mining phosphorous from waste water
- TDM
BMS New $250M expansion:

- 231,000 sf Biologics Development Building (BDB)
- 131,500 sf Clinical Man. Building (CMB)
- New space for developing and manufacturing biotechnology drugs for clinical trials.
- 350 to 380 new employees.
Adaptive Reuse:

- Former Gillette packaging facility.
- New tenants: SMC and Instrumentation Laboratory – Medical Device Man.
- New Loading Docks
- Owner installing over 2.5 MW solar PV on roof and adjacent roof of 66 Saratoga Blvd.
Little Leaf Farms

- ~110,000 sq.ft. greenhouse (Phase 1)
- Hydroponic baby green lettuce production
- Rainwater harvesting (80% of water demand)
- Automated process, pesticide-free
- Locally sourced/farm to table same day.
- Exploring CHP
Health Partners New England

- 78,000 sq.ft., 108 bed critical care facility.
- Serving critical care need in State
- Low Impact Parking Lot Design
- Open Space – critical sidewalk linkage to Mirror Lake
Devens Recycling

- 2007 MA DEP Waste Ban
- C&D recycling
- Waste diversion
- On-site processing into new material/feedstocks
- Opportunities for synergistic co-location
Laddawn:

- Old Davis Library – adaptive reuse
- Plastics manufacturer (incl. biodegradable)
- 100% Renewable Energy
- Employee health and Wellness
- 22,467 sq.ft., two-story building expansion
- Maximize the use of the site, minimize potential impacts on nearby residences
USFWS Visitor Contact Sta.

• Parking and meeting pavilion
• Outdoor Education
• Connection to Oxbow NWR and Devens trail system
• Amphitheater
• Canoe launch/parking (not open)
• River/Wildlife viewing Platform
Grant Road Neighborhood Redevelopment

- Former military housing neighborhood
- 124 unit mix of 1, 2, 3, 4 unit NZE homes and townhomes & 2x20 apts
- Affordable (25% deed restricted low-moderate)
- Higher density (7-20 UPA)
- EE & WE in and out
- Connected/accessible, walkable
- Live, work, play community
New Grant Road Neighborhood Redevelopment

- Neighborhood scale - designed for people first!
  - homes framing the street
  - Trail connections, dedicated bike lanes
- Healthy/active socially engaging neighborhood
  - sidewalks on both sides
  - community gardens and active parks
- Green Infrastructure
- Phase 1 underway
Sustainable Infrastructure

- Redevelopment of WWTP and RIB’s
- LID road drainage
- Bike lanes
- TDM
- Multi-purpose trails
- Renewable energy
- Over 9MW Solar PV, wind energy (10% of total energy)
How we foster EID and SD?

• Right mix of education, incentives, guidelines & regulations
Education:

- Fact Sheets - Composting, reuse & recycling guidance
  - Benefits of Street Trees
  - EPA LID Fact Sheets and MA Smart Growth Toolkit, UNH
- Case Studies - GI and ZNE (seeing is believing!)
- Devens Eco-Efficiency Center & Great Exchange
## Devens LID Case Study: 27 Jackson Road

<table>
<thead>
<tr>
<th>Description</th>
<th>Savings (USD)</th>
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<tbody>
<tr>
<td>Reduced site paving</td>
<td>-$32,000</td>
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<tr>
<td>Reduced curbing</td>
<td>-$50,000</td>
</tr>
<tr>
<td>Reduced stormwater piping</td>
<td>-$14,000</td>
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<tr>
<td>Reduced stormwater structures</td>
<td>-$68,000</td>
</tr>
<tr>
<td>Increased landscaping</td>
<td>+$12,000</td>
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<tr>
<td>Increased site preparation</td>
<td>+$10,000</td>
</tr>
<tr>
<td>Increased soil mix</td>
<td>+$18,000</td>
</tr>
<tr>
<td><strong>Total Estimated Savings:</strong></td>
<td><strong>-$124,000</strong></td>
</tr>
</tbody>
</table>

**Apex bio-filtration landscape islands (Phase 1)**

**Apex bio-filtration landscape islands (Phase 2)**
Devens Sustainable Housing Pilot Case Study

• Showcase EE & WE, sustainable & affordable construction ($225-$350K)
• LID components (reduced pavement widths, porous walkways, on-site roof runoff infiltration (no gutters) and bio-filtration rain gardens)
• IAQ/GHG reduction
• Cluster/OS protection, smart loc.
• Climate adaptation - more resilient buildings & infrastructure

HERS -36 for single family, enough excess power an EV for 30,000 miles/yr.
Incentives:

- Green Building Incentive Program (USGBC’s LEED Suite):
  - Sustainable Sites
  - Materials and Resources
  - Energy and Atmosphere
  - Indoor Environmental Quality
  - Water Efficiency
- Projects receiving LEED® certification - 15% fee refund
- LEED by Example: MassDevelopment build to LEED Plus
- Devens Eco-Efficiency Center
I ncentives cont...

- Expedited permitting (75 days new; 30 days reuse)
- SWM credit for LID and green roofs
- Relaxed frontage requirements for more EE & WE dev.
- RE Building and Electrical Permit Fee Reductions
- Net Metering & demand response (municipal utility)
Regulations to facilitate SD & EID:

Site Plan
- Green Roof & Green Wall Requirements (GHG)
- EV & carpool parking, parking maximums, anti-idling (UHI, GHG/TDM)
- Tree Protection/Planting and Steep Slope Overlay (ecological connectivity)

Subdivision
- Complete Streets Standards (street trees, LID drainage, reduced pavement widths, ped scale design, bike lanes, traffic calming)
- Additional street types (neighborhood, parkway – more green, less grey)

General Regulations
- LID stormwater standards (DEP & UNH)
- RE standards EE, water efficiency
- GHG mitigation standards (Stretch Code, green roofs, inventory)
- Waste management

http://www.devensec.com/devserv.html
Devens – An Eco-Industrial Park

- Concept to achieve original reuse plan objectives
- Ecological Systems Approach (System of Industries – Circular Economy)
- Value Added for facilities locating to Devens
- Devens Eco-Efficiency Center and EcoStar Program as tools to facilitate eco-industrial development
- 501(c)3 non-profit, established in 2008

- Promoting Sustainable Practices

- Education – roundtables, workshops, tours

- Technical Assistance – waste reduction, energy efficiency, walk-through review

- Networking venues – enable partnerships

- Community projects – clean ups, collections

- Goal is to help firms take actions that conserve resources, provide triple bottom line benefits
Economic Benefits

• Each year ~70 entities learn and pursue new strategies and technologies

• Efficiencies reduce operating expenses, strengthen bottom line, protect jobs

• More sustainable business practices provide competitive advantage in the marketplace
Environmental Benefits

- Constant focus on opportunities for facilities to take action to decrease environmental footprint
  - Reduced consumption of materials, energy, water
- Raised awareness of environmental regulations
- Community activities promote local ecosystems
Social Benefits

- Community spirit enables collaborations, creates a better place to do business
- Firms contribute to / participate in activities organized for locals in need
- Not-for-profit entities able to invest more in mission-focused community services
• Started in 2007 as a one time, two-hour event to redirect excess inventory, reusable materials

• Over 200 firms, non-profits, and municipal entities in four states have achieved cost savings from 625,000+ pounds repurposed
Key Accomplishments

• Providing cost-saving services for 10 years
• Awards from local, state and regional entities
• 125 educational programs delivered
• 75 waste reduction and energy efficiency programs implemented
• 625,000 pounds of excess materials repurposed
• Regional household hazardous waste collection center that benefits 11 towns, serves as model
• Nearly $4,000,000 savings delivered
Monitoring & Evaluation

- Can’t manage what you don’t measure
- Continuous improvement
- 5-year review required by law
- Case studies
Devens Sustainable Indicators Report

- 2000 Report on progress toward SD Reuse Plan goal
- 2012 update DEC, MD, DEEC and UMASS
- Continue to further the goal of SD within DREZ
- Survey of Businesses
- Presentations to businesses, residents
- In-person interview with businesses (survey follow-up)
Indicator Study Results

% commuters using transit, biking, walking = 4% to 10%

Use of rail – lf of rail sidings serving businesses from 8000 lf to 14,300 lf

% of RE generated within Devens from 0 to > 3+MW.

% of green buildings within Devens from 0 to 14%. 80% of buildings built since 2008 are green buildings.

Total chemical use per square foot

- Results used to direct current and future programming efforts of agencies
- 2017 scheduled update
Summary

- Devens redevelopment modeled on Sustainability
- Not one size fits all - mix of Guidelines, Incentives, Regulations to foster SD
- Eco-Industrial park
- Devens Eco-Efficiency Center – value added
- Monitoring and evaluation for continuous improvement
- Live, work, learn and play community
Thank You!

Devens Enterprise Commission

www.devensec.com

Devens Eco-Efficiency Center

www.ecostardevens.com