New Haven Mill River District
Plan Overview and Re-zoning Efforts
Agenda

01 Overview: Study area, Goals of Study, Process & Timeline

02 Three Themes for Development

03 Waterfront Planning

04 The Future of Manufacturing

05 Zoning and Land Use
Study Area

Mill River “Proper” .... **109 acres**
4,761,478 sf

Tail ......................... **27 acres**
1,194,700 sf

Island ......................... **12 acres**
519,537 sf

Fair Haven Edge.......... **58 acres**
2,525,160 sf

**TOTAL**.................... **206 acres**
9,000,875 sf

New Haven Green............... **16 acres**
705,130 sf
Goals of Study
Goals of Study

1. Preserve + protect, and grow existing businesses, while fostering opportunities for future growth.

2. Consider needs of all community members, business and residents, and integrate into the long-term plan.

3. Build on the district’s diversity of food manufacturing and distribution, construction and design support, as well as precision manufacturing.

4. Enhance the distinctive role that the Mill River serves in the overall economic health of the city.

5. Identify future district improvements and infrastructure to lower barriers to additional growth on underutilized parcels

6. Prepare design and development guidelines to enhance district character and provide a framework to further integrate district to the City.
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Concept #1: Home Improvement Marketplace

- Pedestrian-friendly retail environment built around home improvement & interior design.
  - Existing businesses represent 1.5 times the revenue and offer substantially more products than a typical Home Depot.
- Interim programming like cart / kiosk marketplaces for underutilized sites.
Concept #1: Home Improvement Marketplace

- More specifically, the home improvement marketplace provides an example of what we hope to accomplish for the district.
Concept #2: Industrial Village

- Small scale manufacturing & assembly
- Retail front ends supporting integrated consumer product manufacturing
- Live-work environment
- Designated manufacturing zones with buffer strategies
- “Tech shop” factory incubator training academy
Concept #3: Mercantile Food Hub

- Growing, processing, distributing and retailing food products
- Urban greenhouses and potential interim uses
- Local food market to address $154 million in unmet demand for grocery products
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Flood Zones in the Mill River

The waterfront along the Mill River is in transition; currently its future as usable maritime infrastructure is questionable as the industries that fall within the district are being threatened by increased flooding by stormwater and hurricane surges.
Existing Conditions:
Marine Infrastructure

NORTH OF GRAND AVE
- Non-navigable waterway (no dredging, low bridge); no useable waterfront
- Mostly soft edge (riprap, grass, earth, and vegetation)
- Remnants of prior wood structures

GRAND AVE TO CHAPEL ST
- Mostly usable waterfront; various conditions (newly installed to completely degraded)
- Interspersed soft edges where infrastructure has been removed

SOUTH OF CHAPEL ST
- Mostly riprap as river widens
Marine Infrastructure

1

2

3

4

5

6
Marine Infrastructure
Scenario I: Intensive Infrastructure Investment

- Significant infrastructure
- Flood Gate, Berm, Pumps
- Storm Surge/Flood Capacity
- New Park
- No Dredging

Interim Uses (0-10yrs):

- Interim open-space uses established for Simkin site
- Decision should be made to stop dredging in the Mill River above Chapel Street bridge

Long Term Strategies (10-50):

- New flood gate and pumps at Chapel Street bridge
- Create berms on east and west sides of river to protect areas outside of surge area
- Saint-Gobain and Simkin sites are cut to create large surge capacity
- Radiall site filled to create protected development site
- River basis is used for large park as well as major flood control and surge protection
- Development sites can be created along the berm and the riverine open space.
City-wide Waterfront Planning

Example of Possible Flood Gate location

Example of Possible Flood Gate location
City-wide Waterfront Planning

Example of Possible Flood Gate location

Example of Possible Flood Gate location
Scenario II: Natural Attenuation

- Minimal Intervention
- Waterfront Parcels Continue to Flood
- Augmented Natural Ecological Succession
- Reclaimed Land Becomes Nature Park
- Select Marine Infrastructure Maintained

Interim Uses (0-10 yrs):
- No flood/storm surge control infrastructure investment
- Limited intervention to assist natural restoration processes (seeding strategies)
- High risk sites used as interim open space

Long Term Strategies (10-50):
- Businesses in flood area move elsewhere due to financial pressure
- Natural processes reclaim land
- Site regains flood resilience and can be reclaimed as passive recreation space
- Working waterfront can be maintained but should integrate storm water management
Scenario III: Paired Capacity Investment

- Raise/Protect Two Development Sites
- Lower Two Sites for Stormwater Parks
- East Parcels Not Protected
- Some Marine Infrastructure maintained

Interim Uses (0-10 yrs):
- Interim open-space uses established for Simkin site
- Decisions made about dredging the Mill River

Long Term Strategies (10-50):
- Cut Simkin site for flood/surge capacity
- Site will manage stormwater for adjacent site and have integrated long-term open space programming.
- Cut Saint Gobain site for flood resilience
- Program low-intensity recreation
- Fill salt pile site for flood prevention and to create development potential
- West development sites raised out of flood plain and incorporate hybrid typologies
- East sites require parcel-by-parcel decisions
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05 Zoning and Land Use
The death of manufacturing in the US is greatly overstated

Manufacturing has stopped shedding jobs....

And contributed more than 500k jobs to the recovery

Source: NP analysis of BLS data
The Future of Manufacturing

The “China Gap” is closing

Manufacturing
The end of cheap China
What do soaring Chinese wages mean for global manufacturing?
By David Roodes and Nick Leiber on June 21, 2012

China is losing its manufacturing lead as a production hub
FINANCIAL TIMES
September 13, 2012 8:02 pm
By George Magnus

Small U.S. Manufacturers Give Up on ‘Made in China’
Bloomberg
Businessweek

The End of Chinese Manufacturing and Rebirth of U.S. Industry
Forbes
The Future of Manufacturing

Manufacturing in the future will look very different from 20 years ago

Additive Manufacturing

- Creating products by layering materials rather than subtracting materials
- Technologies
  - 3D printing
  - Laser sintering
- Examples of current products
  - High speed gearboxes
  - Jet engine ducts
  - Dental implants
- Future products
  - Biomaterials
  - Precision parts

Molecular / Nano Manufacturing

- Creating products through assembly at the molecular level
- Nano products
  - Carbon nanotubes
- Synthetic biology

Bespoke Production

- Creating small batch or custom products
- Typically found in jewelry, food products, textiles, clothing, furniture
The Future of Manufacturing

Projected Growth Rates

**Additive Manufacturing**
- Equipment sales growing an average 26.4% per year
- Projected global sales of $6.9 billion by 2019
- For perspective Chinese Plastics Injection Machine market is $3.9 billion

**Molecular / Nano Manufacturing**
- Consumer nano-based products have increased from 54 in 2005 to 1317 in 2010
- Silver represents 25% of the involved material

**Bespoke Production**
- Unknown but as examples
  - Nike custom shoe business is now $100 million annually
  - *Makerbot* sold 10000 3-D printers in 2011
  - *Zazzle* (online mass custom retailer): web traffic has increased from 1 million per month to 4 million per month

Source: Wohlers Associates; Research and Markets
Source: Project on Emerging Nanotechnologies
The Future of Manufacturing

Moving from the “Creative Economy” to the “Creator Economy” requires more “Maker Space”

Collaborative Industrial Tools

Garment Incubators

Food Incubators
The Future of Manufacturing

Industrial Arts – blending job creation, the creative economy, and industrial reuse

Boutique Foods

Glass Production

Metal Fabrication
The Future of Manufacturing

Technology has made the definition of manufacturing for the purposes of land use and zoning much more interesting.

Traditional Print Shop found in industrial areas

Kinkos

Plastic injection molding machine

3-D Plastic Printer
The Future of Manufacturing

Time for “New Industrialism” zoning?

- Time to market is critical for most manufacturers – a long regulatory process is an impediment
- Changes in manufacturing technology and processes is making a NAICS – use based approach obsolete
- Emerging business models challenge the Euclidean (industrial, commercial, residential) zoning model
  - The manufacturing service bureau – think Kinkos for products
  - Retail front end / manufacturing back end sites commonly found in food, industrial arts, garment products
  - Logistics for some manufacturers involves UPS more than 18 wheelers
- Better to address the real conflict issues through performance-based approach that leverages advancements in environmental and safety standards
  - Noise, smell, light, air, vibration, traffic, hazard materials
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Proposed ILX and ILX-1 Districts
Description of ILX and ILX-1 Districts

Create a new category of Light Industrial / Mixed Use (ILX):

• Intended to preserve and protect the city’s light industrial base, and offer opportunities for economic growth in sectors including research and development, warehouse, wholesale, and retail.

• Appropriate performance standards ensure that industrial uses do not cause negative impacts, while ensuring that permitted non-industrial uses are compatible with the existing light industrial base.

• Design standards shall promote public health, safety, and welfare by encouraging sustainable development and transportation, and enhancing connections to adjacent districts and public open spaces.
Description of ILX and ILX-1 Districts

The ILX district may contain one or more sub-districts, defined as follows:

- **ILX District**
  - Office uses shall be allowed by-right on the upper floors.
  - Showrooms/accessory retail allowed by-right
  - Some limited non-accessory retail allowed by-right.

- **ILX-1 Sub-district (same as ILX above and in addition):**
  - Live/work loft uses shall be allowed by-right on upper floors
  - Residential uses shall be allowed by-right on the upper floors of existing buildings,
  - Unlimited non-accessory retail by-right on ground floor of multi-story buildings
Proposed ILX and ILX-1 Districts
Permitted Uses

Existing permitted uses in an IL (Light Industrial) District:

- Light industrial, R&D uses permitted by right.
- Home improvement permitted by right.
- Wholesaling permitted by special permit
- Warehousing uses banned.
- Adult businesses permitted by right.
Permitted Uses

Existing permitted uses in an IL (Light Industrial) District:

• Live/work loft residences permitted by special permit; all other residential uses banned.
• Some retail uses permitted by right; restaurants and many other retail uses permitted by special permit, or banned.
• Stand-alone office uses are generally banned; office use is permitted if it is accessory to a permitted use (such as admin offices for a manufacturing company).
Permitted Uses

We propose the following overview of uses for the proposed ILX district:

- Light industrial, R&D uses will be permitted by right, as in IL.
- Retail uses that provide outlets for manufacturing (brew-pubs, bakery stores, showrooms) will be permitted by right.
- Many other retail uses will be permitted by-right, if located on ground floor of mixed-use building, and don't occupy more than 25% of total building or 5,000 sf, whichever is more.
- Stand-alone office uses will be permitted by-right, if located on upper floor of mixed-use building (other than lobby space).
Permitted Uses

Within an ILX-1 subdistrict, all of the uses permitted in an ILX district are available, plus the following:

• Multi-family residences permitted by-right, if located on upper floor of mixed-use building (other than lobby space), and structure is an existing building or an addition to an existing building.
• Live/work lofts permitted by-right, if located on upper floor of mixed-use building
• Residential uses subject to deed restrictions, soundproofing, and shatter-proof windows (per planning study).
• Retail uses will be permitted by-right of unlimited size, if located on ground floor of mixed-use building.
## Permitted Uses

<table>
<thead>
<tr>
<th>Uses</th>
<th>IL District</th>
<th>ILX District</th>
<th>ILX-1 District</th>
<th>BA-1 District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-family Residential</td>
<td>X</td>
<td>X</td>
<td>R (mixed-use)</td>
<td>R (mixed-use)</td>
</tr>
<tr>
<td>Live / Work</td>
<td>SP</td>
<td>SP (mixed-use)</td>
<td>R (mixed-use)</td>
<td>SP</td>
</tr>
<tr>
<td>Showroom / retail outlet (e.g., bakery)</td>
<td>X</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Retail</td>
<td>R (some)</td>
<td>R (many, if mixed-use, up to 25% sf)</td>
<td>R (many, if mixed-use)</td>
<td>R (many)</td>
</tr>
<tr>
<td>Restaurant</td>
<td>SP</td>
<td>R</td>
<td>R</td>
<td>R</td>
</tr>
<tr>
<td>Office</td>
<td>X</td>
<td>R (mixed-use, upper floors)</td>
<td>R (mixed-use, upper floors)</td>
<td>R</td>
</tr>
<tr>
<td>R&amp;D / High Tech</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>X (over 2,000 sf)</td>
</tr>
<tr>
<td>Light Manufacturing</td>
<td>R</td>
<td>R</td>
<td>R</td>
<td>X</td>
</tr>
<tr>
<td>Wholesale</td>
<td>SP</td>
<td>SP</td>
<td>SP</td>
<td>X</td>
</tr>
<tr>
<td>Warehouse</td>
<td>X</td>
<td>X</td>
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</tr>
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</table>
Parking Standards

Current city-wide parking ratios for different uses are generally stated in Section 45 as follows:

- Office: 1 space / 600 nsf
- Industrial, heavy commercial, miscellaneous services: 1 space / 2 employees on largest shift
- Retail: for 600 - 5,000 sf sales service area, 1 space / 200 sf of sales service area
- Retail: for over 5,000 sf sales service area, 1 space / 100 sf of sales service area
- Restaurant (eating & drinking): 1 space / 4 seats
- Residential: 1 space / unit [Sect. 16, 17]
- Live / work: 1 space / unit [Sect. 18A]
Parking Standards

Existing parking standards impose burden on developers:

• Impossible to determine parking required for industrial, retail, and restaurant uses, without knowing actual user and number of employees or size, or the layout of premises.
• Ambiguity about ratios to apply to certain uses (e.g. R&D, wholesale, warehouse) since these uses are not specifically identified.
Parking Standards

**Preliminary recommendation:** Based on analysis to date, we propose the following parking ratios, which provide greater predictability and incentives for development. These could be applied city-wide as well:

- Industrial and heavy commercial, miscellaneous services: 1 space / 1,600 gsf.
- Retail: 1 space / 500 gsf.
- Restaurant: the greater of 1 space / 110 gsf, or 1 space / 4 seats.
Form-Based Standards

Setback

A Primary Street 0'
B Side Street Frontage 0' - 10'
C Side Street Parking 0' - 70'
D Rear Lot Line 0' - x'

Frontage

E Primary Street 100% on first floor
F Side Street 50’ min

Features

G Planting/Fence Zone 2’ min
Performance Standards

The following categories of performance are currently regulated in the zoning code and other non-zoning city ordinances:

<table>
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<tr>
<th>Category</th>
<th>Regulation</th>
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<tr>
<td>Ionizing radiation</td>
<td>Section 48 of Zoning Code</td>
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<td>Noise</td>
<td>Section 48 of Zoning Code; Title III, Chapter 18</td>
</tr>
<tr>
<td>Vibration</td>
<td>Section 48 of Zoning Code</td>
</tr>
<tr>
<td>Exterior Lighting / Glare</td>
<td>Sections 48 (glare) and 60.1 (lighting plan) of Zoning Code</td>
</tr>
<tr>
<td>Dust and emissions, pollution, sewage</td>
<td>Section 48 (pollution, sewage) of Zoning Code; Title III, Chapters 3 (dust, emissions) and 13 (emissions)</td>
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<tr>
<td>Reflective heat impact</td>
<td>Section 60.2 of Zoning Code</td>
</tr>
<tr>
<td>Fire prevention</td>
<td>Section 48 of Zoning Code; Title III, Chapter 13</td>
</tr>
<tr>
<td>Outdoor storage</td>
<td>Section 46 of Zoning Code</td>
</tr>
<tr>
<td>Transition between industrial and residential uses</td>
<td>Section 47 of Zoning Code</td>
</tr>
</tbody>
</table>
Proposed ILX and ILX-1 Districts
Zoning/Standards Crowdsourcing

We asked for examples and best practices related to:

- Existing form-based zoning codes for mixed-use industrial districts.
- Performance standards allowing for reduced friction between industrial and non-industrial adjacent uses.
- Parking ratios for the mix of uses in this district.
- Standards to reduce parking when uses mix on a single site.

We posed these questions to:

- The UGA New Urbanist mailing list, the Cyburbia planning online forum, the Urbanophile Web Blog, and the Urban Manufacturing Alliance.
Zoning/Standards Crowdsourcing

*Responses included these following observations:*  

- Why not flip it around? Why not ask residential uses to be more cognizant of the nuisances they will be subject to?  
- Any list trying to mitigate all possible combinations of nuisance will inevitably be incomplete and lead to complaints.  
- IBC building codes may already deal with much of the friction with basic occupancy separation.  
- Arbitrarily establishing parking standards may be too prescriptive.  
- Screening industrial areas seems superficial but is effective.  
- Air criteria may be a low-hanging fruit for performance standards.  
- Complicated standards become difficult to comply with.
Zoning/Standards Crowdsourcing

*Responses included these examples of best practices:*

- Pearl District in Portland.
- City of San Francisco code for Showplace Square district.
- Nina Rappaport (at Yale) on “Vertical Factories.”
- Quonset Business Park in Providence, RI.
- City of Denver code on form-based mixed use industrial.