This is a template slide.
Re-title the slide and the section above
UrbForM
Urban Forest Management
UrbForM creates a comprehensive business model for the management of urban forests with a focus on environmental integrity, community enhancement and job opportunities.
Enhances the urban tree canopy
Creates job opportunities
Reduce city-wide expenses
Promotes urban aesthetics
Promotes higher tree maintenance
Augments urban environmental conditions
Plants maintain and harvests forests
Why is it better than pre-existing condition?

- Harvest
- Production of Products and goods
- Nursery/Planting
- Maintenance

UrbForM
UrbForM
Business Model
Simplified Business Model
• Only 68 cubic feet of wood per acre per year comprises a commercial woodlot
• Per 100,000 seedlings produced in a forest, only 50 reach maturity
• 25% of US tree canopy are in developed areas
• The growth rate of a properly maintained tree is 40% greater than unmanaged
What is wrong with current operations

• The **departments** responsible for urban trees **do not have** forestry agenda

• **Parks and Recreation** is about providing **open space** and playgrounds, **Streets and Sanitation** are about utilities, pavement, and garbage.
What is wrong with current operations

- these **agendas** are often promoting **fewer** rather than more trees
- the **parks** department is **not maintaining** a quality canopy, and **Streets and Sanitation** is **not maintaining** street trees
Current Citywide operations maintain 20% of canopy

- **500,000 trees total** in city streets.
- **10,000 street trees removed and replaced** each year from city by streets and sanitation which is **2% of total cover**
- **9,420,000 board feet** of wood Ground up into chips each year.
- **117 city employees** (Division of Forestry) to do this task.
- **$1,170,000 paid** each year in salaries
What is the potential

- $12,436,200 of Potential Profit each year through sawn wood, firewood, and chips/mulch.
- City currently makes $176,000 each year
• **125 people** would create revenue of **$100,000** each year.
• **23 Modules** in the city with **5 employees each**.
• A **main warehouse** would have **7 employees**.
• **6087 acres** for each module.
3 Responsibilities

• Harvesting of trees and converting them into viable products
• Maintenance of trees in zone
• Planting of new trees and transplanting from tree farms
The anatomy and end-products of a tree.
Pruning and Maintenance

The overall health and beauty of the trees will be the responsibility of each module. A healthier tree gives a better yield to the harvester as well as improves the quality of the urban tree canopy.
Tree farms are set up in abandoned lots to supply the foresters with a resource of new trees. The trees are grown to a proper size and then transplanted into the city. This process cycle allows for expansion of the urban canopy and increase of potential product for harvesting.
Operational Space Required:
- Wood storage uncut = 2500 square ft
- Wood storage milled = 900 square ft
- Kilns = 900 square ft
- Sawmill = 270 square ft
- Fork truck = 38 square ft
- Truck dual axel = 180 square ft
- Truck with Flatbed = 270 square ft
- Office = 500 square ft
- Equipment storage = 900 square ft

Total Area Need
6458 square feet

A SAWMILL OF THIS SCALE would only require square footage equal to that of a typical CHICAGO DOUBLE LOT.
UrbForM
Urban Sawmill

START-UP COST

Initial Investment .......................... $278,000

Income Per Module ....................... $540,000 Annually

Projected Income ....................... $38,000 Per Employee
Module Mapping

Scope
City of Chicago

How much acres per module?
6087

How to divide?
2 or 3 wards are combined.

How many Modules?
23
**R-factor (Revenue Factor)**

**R-factor** is based on **Tree coverage rate**.

**R-factor (Tree coverage)** 1 is
- 10~15 % Tree coverage
- 435 trees/year are removed on 6087 acres.
- $540626 revenue can be earned.

(Average Module Definition Value)
Sample Development

Before
R-factor - 1.1 (435 x 1.1 = 478.5 trees)
Revenue = (540626.09) x (1.1)
= 594,688 $

After
R-factor - 1.7 (435 x 1.7 = 739.5 trees)
Revenue = (540,626.09) x (1.7)
= 919,064 $
# Illinois vs Chicago Urban Forest

<table>
<thead>
<tr>
<th>Urban Trees</th>
<th>Urban tree cover (%)</th>
<th>Portion of state tree cover (%)</th>
<th>Urban Area (km²)</th>
<th>Portion of state that is Urban (%)</th>
<th>Compensatory value (millions $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>155,544,000</td>
<td>33.7</td>
<td>5.5</td>
<td>9,165</td>
<td>6.1</td>
<td>98,310</td>
</tr>
</tbody>
</table>
Domestic value of woods
$6.3 billion*

Value of woods (in Chicago)
$38 million

Number of modules to create
23

Number of Board Feet per Module
409,565.21

Cost per module ($1.40/board feet)
$573,391.30

Revenue generated per module
$540,626.09
Imports (in Millions $)

- NAFTA: $8,128
- Latin America: $541
- Western Europe: $234
- Japan/Chinese Economic Areas: $35
- Other Asia: $458
- Rest of the World: $150
- World Total: $9,554
Consumption of Industry Outputs

- Construction: 45.7%
- Manufacturing: 47.6%
- Other: 6.7%

Housing Market Indicators (1997)

- New Housing Units ( Millions): 1.8
- Renovation and Remodeling Expenditures (Billions $): 118
A mature tree removes 330 lbs of CO$_2$ per year.

Chicago trees currently remove 412,500 tons of CO$_2$ per year.

With this plan an estimate of 600,000 tons of CO$_2$ would be removed per year.

Source: http://www.coloradotrees.org/benefits.htm
Reduction in “Urban Heat Island Effect”

Shaded walls or pavement can be reduced 9° to 36°F. Which cause less frequent repaving.

Source: http://www.epa.gov/hiri/strategies/vegetation.html
http://www.homedepotfoundation.org/pdfs/hd_treeresourceguide_a.pdf
Shaded walls and roofs can reduce air conditioner costs by 12%.

Trees reduce major runoff by 7% to 12% during flooding.

Establish Nurseries throughout different communities on vacant land to grow trees.

Green and Healthy communities begin to form adding value and prestige.

Create Jobs within these communities for the care and maintenance of the nursery.
Abandoned Lot Project

70,000 to 80,000 vacant lots in the City of Chicago.

Parks and Gardens for local communities are created.

Works of Art are created on abandon buildings.

City Farm

Mobile Farms these farms are used until site is ready for development.

Composted Soil is created by restaurant trimmings from around the city.

Jobs and Green Space are created throughout local communities.
How can UrbForM impact the Entire Metropolis?

**Scalability**
This system has the ability to operate at any size and any place!

**City Operations savings**
$1,170,000.00 of salary savings annually.

**Franchise Value**
Projected payment of $385,000.00 to the city per module operator.
JC Decaux

2,000 Pieces of street furniture are supplied and maintained by JC Decaux.
$0 Total Chicago costs.
$307,500,000 Total Chicago revenue.

Taxi Medallion

Scalable This medallion system is used in a variety of cities: Chicago, New York, Boston, Newark, Philadelphia, and Baltimore.

$189,000 Is the minimum bid for a medallion being sold at auction by The Taxi and Limousine Commission in New York.
“Nine Element” Business Model

VALUE ASSEMBLY
partner network
- municipality
- private land owner
- “co-op” structure

core capabilities
- replicability
- scalability
- renewable supply

value configuration
- low cost supply
- high value product
- franchise value

OFFER
value proposition
- hardwood products
- local green enterprise
- forest management

customer relationship
- social amenity
- green agenda
- tax relief

CUSTOMER
target customer
- local carpenters
- e-consumers
- landscape services

distribution channel
- retail chain
- direct sales

FINANCE
revenue stream
- milled wood sales
- mulch sales
- firewood sales

acknowledgement: Brief Outline of Business Models / Nov 06 / Alex Osterwalder / alexianetica.com
• ‘Alternative recycle program’ – Keep kids engaged in constructive extra-curricular activities

Decaying Trees
Distributed to K-8 grades
Students create something for the city
Students get educated

Decaying Trees
Distributed to 9-12th grades
Students learn how to manage tracts of land
Students get educated