Sustainable Manhattan 2050:
Visions for Resilient Community in the Age of Peak Oil
and Climate Destabilization

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A Perfect Storm

- Exponential Population Growth
- Peak Oil and Natural Gas
- Climate Destabilization
- Environmental Degradation
Exponential Population Growth

From 6.7 billion people today
To 9 billion in 2050
Peak Oil and Natural Gas

2030: 25% less oil than today

2050: 50% less oil than today
No natural gas available in North America
Climate Destabilization

The world seems committed to an increase in global temperature of nothing less than 3 degrees C, which will cause us to cross a number of key tipping points, possibly leading to:

- The disappearance of summer arctic sea ice
- An increase in massive floods and sustained droughts
- The melting of the Himalayan glaciers
- The melting of much of the Greenland and West Antarctic ice sheets (increase in sea level of some 7 meters)
Environmental Degradation and Species Extinction

More than 60% of ecosystems are stressed beyond sustainable levels

We are now living in the epoch of the Sixth Great Extinction

By the end of the century from one quarter to one half of all species on earth will become extinct
Alternative Futures

• Civilizational Collapse
• Sustainable Enclaves for the Rich
• Urban Deconstruction and Re-ruralization
• A Meta-Industrial Society comprised of Resilient Cities and Sustainable Bioregions
Question

How can Manhattan, KS take steps now to prepare for the radically different world which will exist in 2050?
Resilient Cities

1) The Renewable Energy City
2) The Carbon Neutral City
3) The Distributed City
4) The Photosynthetic City
5) The Eco-efficient city
6) The Place-Based City
7) The Sustainable Transport City
Eco-communities: Building Blocks for a Sustainable Society

The creation of socially and economically diverse, humanly scaled, face-to-face communities of shared space, personal responsibility and mutual obligation are essential to our ability to recover the wisdom, civility and compassion necessary to make the transition to a meta-industrial society.
Resilient Cities

Compact, socially diverse, mixed-use, pedestrian friendly neighborhoods, towns and cities that integrate:

* renewable energy production and consumption
* multi-modal transportation linkages
* climatically adapted passive solar architecture
* living, working, recreation, education, shopping and worship
* ecological landscape design and land-use planning
* organic urban agriculture and local food systems
Flint Hills Square: A Green Urban District

The **GREEN** circle shows a 5-minute walking, 1/4 mile.
The **LIGHT BLUE** circle shows a 10-minute walking, 1/2 mile.
The **DARK BLUE** circle shows a 15-minute walking, 3/4 mile.

**Food**
- Harry's
- AJ's Pizzeria
- Old Chicago
- Della Voce
- Applebee's
- Chili's
- Whiskey Creek
- Olive Garden
- Longhorns
- Smash Burger
- Orange Leaf
- McAlister's
- The Chef
- Carlos O'Kelly's
- Hu Hot

**Entertainment/Shopping**
- Town Center
- Sears
- JC Penney
- Dillard's
- Kansas Store
- Varney's K-State Place
- Pathfinders
- Wareham Opera House
- Strocker Nelson Art Gallery
- Best Buy
- Bed Bath & Beyond
- Hy-Vee
- Walgreens
- Petco
- Dick's (2011)
- Discovery Center
- Union Pacific Train Depot
bioswale

atmospheric regulation
climate regulation
green technologies
erosion control
sediment control
soil formation
flow attenuation
filtration
treatment
infiltration
flow attenuation
climate regulation
habitat
detention area
filtration
recreation
infiltration
flow attenuation
evapotranspiration
land mitigation
Toward a Renewable Energy-Based Multi-Modal Transportation System
Little Rock, Arkansas
Tampa Bay, Florida
CO₂ Emissions of Road Vehicles vs. Streetcars

- Automobile: 600
- Bus: 200
- Streetcar: 0
Toward a Renewable Energy-Based Multi-Modal Transportation System
Fort Riley Boulevard and the Southeast Quadrant of Older Manhattan

Creating a Mixed-Use Boulevard and a Denser Urban Neighborhood
Proposed Locations of Housing Types

- Green: Small House and Large House Locations
- Orange: Large House and Duplex Locations
- Yellow: Small House, Large House and Duplex Locations
- Red: Duplex and Row House Locations
Christian Co-Housing Community
Kimball Avenue Eco-Community
(Agricultural Urbanism)
Retrofitting Manhattan’s North End
(Toward a Mixed-Use Urban Village)
Garage Apartments, Backhouses and Granny Flats

Creating more affordable and diverse housing options in Manhattan’s older neighborhoods
Manhattan Future Bus Routes
blue outline = 5 minute walking radius (1/4 mile)

Site Study
The Block of Kearney to Vatter and 9th to 8th

Area of Focus
From Manhattan to 3rd St and Thurston to Colorado

Lot Selection
Lots choose for: average lot size, varying house sizes/heights, depth in lot, etc.
A System of Simple Compact Net Zero Energy Backhouse Designs to fit Every Situation
Alleys Become Green” Residential Laneways