

SETTLEMENT PATTERN CONSILIENCE

Current Perspective # 26 – Beta Four

Functional human settlement patterns are the sine qua non of a sustainable trajectory for contemporary, Urban civilization – ‘modern’ human society as it has evolved to the present.

FOREWORD

The core insights from SETTLEMENT PATTERN CONSILIENCE are:

- ◆ **The geographic expansion of the Urban fabric within the United States has peaked and is now on the cusp of receding.**
- ◆ **This reversal of rapid physical expansion by Urban agglomerations in the United States was – and is – inevitable given the current status and the rate of consumption of the planet's resources.**
- ◆ **The Fundamental Transformation of settlement patterns which can result from the reversal of the rapid expansion of the Urban footprint will be necessary if citizens are to achieve a sustainable trajectory for ‘modern’ (technology- based) civilization.**

SETTLEMENT PATTERN CONSILIENCE explores strategies and processes necessary to achieve the Fundamental Transformations that are required to evolve functional and sustainable human settlement patterns – in the Urbanside, in the Countryside – ESPECIALLY “AT AND NEAR THE CLEAR EDGE.”

SETTLEMENT PATTERN CONSILIENCE articulates strategies which citizens and their Households as well as Agencies, Enterprises and Institutions can employ to avoid economic and social implosion for all who OWN, OCCUPY or GOVERN the millions of acres of land that was partially and dysfunctionally converted to scattered Urban land uses over the past 50 years.

There is now overwhelming evidence that contemporary Urban civilization is on an unsustainable trajectory. Because the topic is complex, this Perspective starts by setting the context for the Fundamental Transformation of human settlement patterns.

Within this context, SETTLEMENT PATTERN CONSILIENCE provides strategic and tactical guidance to change the current, dysfunctional and unsustainable trajectory. A Critical Mass of citizen understanding concerning these strategies and tactics within current and future reality is absolutely essential if civilization that has evolved to date is to achieve a sustainable trajectory.

The land area “at and near The Clear Edge” is the now defunct Cambium Layer which has been consigned to unsustainable patterns and densities by the past five decades of New Urban Region “growth.” The location, scale and importance of land “at and near The Clear Edge” is discussed in Sections II and IV and is summarized in Sections VIII And IX.

For a explanation of the word ‘consilience’ in the title of this Perspective see Appendix D.

THE PROBLEMS

‘The problems’ of critical importance now facing civilization include Transforming consumption based societies to reflect the reality of finite resources, feeding and watering a population of 7 billion humans while restoring and protecting the natural systems upon which human life depends.

These problems have not yet been widely acknowledged or seriously addressed but must be solved soon if society is to maintain anything like the current standard of living and quality of life that has been enjoyed by those who have monopolized the benefits of contemporary technology – those at the top of the global economic, social and physical Ziggurat.

Action to address these fundamental realities is made imperative by the escalating planet-wide conflicts reflecting the inequitable distribution of the planets finite resources.

On a finite planet with a growing population and the resources upon which Urban civilization has depended dwindling, there is a stark and critical choice:

Either, continue to muddle on an unsustainable trajectory until there is Collapse,

OR

Evolve human settlement patterns and protect natural systems in ways that will enable every citizen to have the opportunity to be happy and safe.

THE THRESHOLD QUESTION

How does one enumerate ‘the problems’ that:

- 1) Result from dysfunctional human settlement patterns, and
- 2) Are driving the unsustainable trajectory of contemporary civilization?

Does THE LIST start with the ‘current’ political hot button ‘problems’ – Jobs, food and energy costs, excessive personal and public debt, escalation of systemic health problems, decaying infrastructure, governance dysfunction and deteriorating property values?

Or does THE LIST start with the overarching realities that underlie the hot button issues – economies based on Mass OverConsumption, humans having reached ‘peak’ extraction for many resources, irrational expectations fueled by pandering politicians, myths of exceptionalism, racial and religious bigotry, and the growing gulf between the haves and the have-nots – The Citizen Wealth and Well Being Gulf?

Both the hot button ‘problems’ and the global ‘dysfunctions’ must be addressed if human civilization is to achieve a sustainable trajectory.

Both must be addressed by evolving functional and sustainable human settlement patterns – the patterns and densities of human use of land, air and water.

A logical approach to The Threshold Question is to acknowledge the wisdom of John Muir: Every one of the economic, social and physical ‘problems’ is connected to all the other economic, social and physical dysfunctions. For example:

- ◆ **Jobs** – In the realm of conventional wisdom, expanding employment opportunities depends on ‘expanding the economy.’ However, a consumption driven economy cannot produce Jobs as it has before 2006 due to the unsustainable consumption of resources and the growing demand for these finite resources. See ENOUGH?, Current Perspective # 18 linked from the *CURRENT RESOURCES* page at www.emrisse.com . Also see LIVE BY, DIE BY Current Perspective #24.
- ◆ **Food Cost** – The cost of food depends on the cost of the feed stocks for food production Urban and NonUrban. All the current major Urban food production processes evolved during a period of cheap energy – especially cheap and abundant petroleum.

Over half the population of the planet is now Urban – including half the population of China. The cost of food for Urban citizens is dependent upon the

use of energy, petrochemicals, water and other scarce and ever- more-expensive – resources. These resources must be employed to till, plant, fertilize, irrigate, harvest, process, package, transport, distribute and market food and fiber.

The cost of food is also driven by other depleted resources – marine and fresh water fisheries, potable surface and ground water as well as erosion of top soil, dwindling forests and desertification.

The costs of food for NonUrban populations are rising due to competition for scarce resources on a global scale. See discussion of Food Supply in Section VII of this Perspective.

- ◆ **Energy Cost** – The rising cost of energy is the result of diminishing naturally stored resources – aka, Natural Capital. Rising energy costs compound exponentially growing demand due to the growth of population and the growth of expectations of those who have previously not had access to the standards of living and quality of life enjoyed by those at the top of the economic, social and physical Ziggurat that is contemporary civilization. In a global economy the rising cost of energy raises the total cost of ALL renewable and nonrenewable resources.

Food and energy costs are directly and indirectly related to settlement patterns. See Section II of this Perspective.

- ◆ **Debt** – Both public and private debt is driven by an economy that depends on massive consumer consumption (aka, Mass OverConsumption). Rising debt is also exacerbated by exhaustion of resources and speculation / manipulation of markets that primarily benefit those at the top of the Ziggurat. This maldistribution of resources expands the Citizen Wealth and Well Being Gulf. See Enough?, Current Perspective # 18.

- ◆ **Governance** – Contemporary governance dysfunction reflects the fact that, except in the European Union, there has been very little SUBSTANTIAL change of governance structure in the First World to reflect 225 years of profound change in economic, social and physical parameters of human existence.

In the United States the three levels and three branches of government are the same as existed when it took a week to get a person, or an idea, from either Boston or Charleston to the Federal District. When the US Constitution was framed the vast majority of the human inhabitants of the original 13 states were not literate. An even a smaller minority of those living in the Confederacy were considered citizens. Slaves, indentured servants and laborers, the members of Pre-Columbian confederacies, tribes, clans and bands as well as most who did not

own land, ALL women did not even have the right to vote. Yeoman farmers and diligent merchants were the idealized ‘citizens’ but they were a small minority.

The governance structure must evolve to reflect the existing economic, social and physical reality. The level of Agency action must be moved to the level of Agency impact as noted in Section I and Section II of this Perspective.

- ◆ **Infrastructure** – “Fixing” deteriorating infrastructure requires an answer to the question: What settlement patterns must the infrastructure serve? Dwindling resources and growing demand requires that settlement patterns be efficient and sustainable. See Section III of this Perspective.
- ◆ **Shelter** – Declining home values beyond The Clear Edge are due to speculation and fraud as well as unrealistic and unfounded expectations. However, they are PRIMARILY the result of settlement pattern dysfunction.

The Trickle Down shelter policy has resulted in building the Wrong Size Houses in the Wrong Locations. The worst place to build the dwellings for those that need shelter would be in the former Cambium Layer of Urban growth – at, near and beyond The Clear Edge. See Section III of this Perspective.

- ◆ **The Citizen Wealth and Well Being Gulf** – Over the past 500 years those who control resources and technology have enjoyed the vast majority of the benefits from resource consumption. Democracy was reintroduced on a nation-state scale 225 years ago as a solution to inequitable resource distribution and consumption. Over the past 40 years those at the top of the Ziggurat in developed nation-states have learned to game the governance structure for their benefit. This has resulted in the ‘wealth gap’ growing into The Citizen Wealth and Well Being Gulf. See ENOUGH?, Current Perspective # 18 and MANAGING CIVILIZATION – AN OVERVIEW, Current Perspective # 23 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com For a clear summary of the drivers of the Citizen Wealth and Well Being Gulf see Reich, Robert “The Limping Middle Class” and the accompanying graphic in *The New York Times Sunday Review*, 3 September 2011. The gulf is widening as this End Note is edited. See “Income goes up...especially for the rich.” (“... the middle class saw a drop of 0.7%...”) Luby, Tami CNN Money 5 March 2012.

Documentation of these problem / cause interrelationships fill volumes that exist in every large contemporary library – some are cited in this following Perspective.

AN OVERARCHING QUESTION

What strategies will cause citizens to believe they, and future generations, can be as happy, safe and prosperous as they deserve to be?

It is better to rebuild Urbanside and conserve the Countryside so every citizen has opportunity to be happy, safe and prosperous? **OR**

Is it better to follow the current trajectory that makes a few at the top of the Ziggurat ever more well-to-do until there is a total COLLAPSE? (“Collapse” as defined by Jared Diamond in *Collapse: How Societies Choose to Fail or Succeed.*)

Should Agencies, Enterprises, Institutions and citizens and their Households work to preserve democracy with informed markets to allocate resources, **OR**

Turn to some form of oligarchy /dictatorship that is ‘efficient’ and serves those at the top of the Ziggurat?

With limited and finite resources is it better for citizens to focus on a nation-wide goal of reconstruction and renaissance to support all citizens, **OR**

Try to regenerate the selfish and greedy spirit of American ‘exceptionalism’ by sending a few individuals off to set up a base on the Moon or try to reach Mars at incredible expense?

Beyond intelligently responding to these alternative strategies, the Fundamental Transformation of human settlement patterns will have other positive outcomes such as:

- ◆ Make productive use of land that is now trapped in the dysfunctional Cambium Layer of past Urban fabric agglomeration addressed in Sections II and IV.
- ◆ Provide functional and sustainable settlement patterns for the 95 percent of population that is Urban.
- ◆ Provide a place for those who, for many reasons, are not comfortable with or not well equipped to live, work and seek recreation and services in contemporary Urbansides. (This is a prime role of Countryside articulated and advocated by Fahmah profiled in Chapter 34 of *TRILO-G*.)

These and other opportunities are examined in this Perspective and the references cited.

Because of the critical role of functional settlement patterns in achieving a sustainable trajectory for civilization, this exploration is placed in the context of:

- ◆ The status of global resources
- ◆ The economic and social well being of citizens
- ◆ The environmental well being of humans, and the natural systems and communities upon which human civilization and existence depend

These parameters are explored in Sections I through VII.

THE SCOPE OF THIS PERSPECTIVE

This Perspective provides references to recent documentation of the profound changes now afoot on the planet, in nation-states and in New Urban Regions. Because of the scope of this inquiry,

many of the contextual facts are presented in brief declarative statements. If the reader wants to explore these facts in more depth, consult the noted reference material. See End Note One.

1. For example: Those who are interested in the basis for the statement: “*Functional humans settlement patterns are the sine qua non of a sustainable trajectory for contemporary, Urban civilization*” Please see Vol I of Risse, E M. ***The Shape of the Future: (Vol I) The Critical, Overarching Impact of Human Settlement Pattern on Citizens' Economic, Social and Environmental Well-Being and (Vol II) Prospering in 21st Century New Urban Regions.*** Warrenton, VA: SYNERGY/Resources, 2000.

In SETTLEMENT PATTERN CONSILIENCE, this two volume book is cited as ***THE SHAPE OF THE FUTURE.*** A companion book (Risse, E M. ***TRILO-G: FOUNDATIONS, BRIDGES, ACTION: How to Make the World a Better Place One Alpha Community at a Time.*** Warrenton, VA: SYNERGY/Resources, 2010) is cited as ***TRILO-G.***

Liner Notes for these two books can be found on the *PUBLICATIONS* page at www.emrisse.com. Other references cited in this Perspective can be found online via the link provided, through an Internet search of the citation or at www.emrisse.com

For words that may appear to exhibit ‘irregular capitalization’ see the word’s definition in GLOSSARY linked from the *RESOURCES* page at www.emrisse.com

The End Notes in the Beta Four version of this Perspective focus on recent MainStream Media reports to emphasize that the ideas put forth here are NOT esoteric, abstract or speculative. The SYNERGY work noted in the End Notes and in the text contain references to comprehensive data and research on the topics explored.

The critical issues addressed in this Current Perspective are NOT ‘new.’ They were raised in the 1920s, the 1930s and the 1940s. See APPENDIX A – READING LIST – Resources for SETTLEMENT PATTERN CONSILIENCE and APPENDIX B – WASTING THE PLANETS RESOURCES.

Every intelligent human should have understood the absolute necessity of Fundamental Transformation of human settlement patterns, governance structure and economic systems in 1973. What has been lacking with respect to understanding human settlement patterns is a widely understood and comprehensive Conceptual Framework and a robust Vocabulary to articulate that Conceptual Framework.

Those who are not interested in the context and background of the strategies and tactics articulated in this Perspective may choose to skip directly to Sections VIII and IX. However,

there will be no broad support for these strategies and tactics until there is a Critical Mass of citizens who understand the material in Sections I through VII.

The future of democracy and informed markets to allocate resources depends upon citizen understanding of this information. The emergence of Citizen Media will be essential to achieve this task. So will Fundamental Transformation of governance structure and economic systems spelled out in *TRILO-G*.

It is very clear that there are solutions INSIDE The Clear Edge as articulated in *THE SHAPE OF THE FUTURE*. There are ways to achieve those solutions are outlined in CITIZEN HAND BOOK, now revised as PART TWELVE of *TRILO-G*.

It is just as clear that there are solutions OUTSIDE The Clear Edge as articulated in THE USE AND MANAGEMENT OF LAND and NEW METRIC FOR CITIZEN WELL BEING – PARTS FOUR and FIVE of *TRILO-G*.

This Perspective addresses these critical issues and focuses on solutions AT AND NEAR THE CLEAR EDGE BETWEEN THE URBAN SIDE AND THE COUNTRYSIDE. This Perspective represents the culmination of 64 years of inquiry, education and professional practice in the field of human settlement pattern development and New Urban Region science.

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I. THE BIG PICTURE

Section I provides a brief survey of why the current trajectory of human civilization is unsustainable and how it got that way.

A. GLOBAL REALITY – A FINITE PLANET

Due to:

- ◆ Unsustainable population growth,
- ◆ Resource depletion / exhaustion,
- ◆ The end of cheap energy,
- ◆ Inequitable resource and wealth distribution,
- ◆ Dysfunctional human settlement patterns,
- ◆ Consumption-driven economic systems, and
- ◆ Governance chaos:

There is not now – and there will not be in the foreseeable future – ‘enough’ resources to support the current rates of consumption much less meet the growing expectations of half the planet’s population. See ENOUGH? Current Perspective # 18 at www.emrisse.com

FURTHERMORE,

In the foreseeable future, humans on the planet have **NO EXIT**. See discussion of ‘No Exit’ (aka, inter-stellar and inter-galactic quarantine) in both *THE SHAPE OF THE FUTURE* and in *TRILO-G*

B. PLANET HOLDING CAPACITY

The following holding capacity estimates by SYNERGY are based historic data adjusted for the existing state of global resources. For example, but for:

- ◆ Human caused desertification in North African, the Middle East, Central Asia and elsewhere, AND but for
- ◆ Tropical forest destruction in the Southern Hemisphere – especially in South America, Southeast Asia and Australia, AND but for
- ◆ Top soil erosion, surface and ground water pollution and marine resource depletion planet-wide, THEN

The hunter / gatherer society holding capacity would be MUCH higher. The same is true for the other prototypical society designations.

Historically, hunter / gatherer societies in favorable conditions established hunting and foraging densities of about one person per 100 acres (1/100 pn/ac).

Over the past 13,000 years, advanced agrarian societies in favorable conditions established densities of about one person per 10 acres (1/10 pn/ac).

Due to economic (e.g. trade / cooperation), social (e.g. ‘civilized’ intra-society and inter-society relationships) and physical (e.g. science and technology) evolution, advanced Urban societies require far LESS land per capita for daily activities. For the impact of these historic trends, see ***THE SHAPE OF THE FUTURE*** Chapter 1 Box 2.

As noted in ***THE SHAPE OF THE FUTURE***, when cheap energy was available, and it was public policy to subsidize the scatteration of Urban land uses the minimum functional Urban densities WERE 10 pn/ac at the Alpha Community scale. This density parameter can be derived from analysis of Alpha Community scale projects with equitable allocation of location-variable costs.

The old Sweet Spot on the Cost of Services Curve of 10 pn/ac WAS THE MARKET DETERMINED MINIMUM DENSITY for sustainable settlement patterns at the Alpha Community scale.

As documented in Sections II and IV of this Perspective, the old Sweet Spot on The Cost of Services Curve has now migrated to 30 pn/ac at the Alpha Community scale due to the cost of energy (especially the cost of Mobility and Access) and the delivery of Urban services.

SYNERGY Estimated Holding Capacity Summary

Hunter-Gather Societies	1 to 1.5 Billion
Agrarian Societies	2 to 2.5 Billion
New Bronze Age Urban and Agrarian Societies	3 to 4 Billion
Technologically-Based Urban Societies with 80 percent of the population supported by Urban activities and 20 percent supported by NonUrban / agrarian activities	7 to 8 Billion

These estimates suggest that human exploitation of the planets resources’s over the past 13,000 years – and especially during the exponential acceleration of resource consumption during the

past 500 years – has left humans unable to support current or former – hunter-gatherer or agrarian – societies at anything like the current global population. See End Note Two

2. See, for example, the graphic on “Evaporating Water Supplies and Tropical Forest Destruction” as well as the sources cited in “Population growth taxing planet’s resources” by Eilperin, Juliet, *The Washington Post* 23 October 2011. For an excellent summary of a number of books exploring the need to rethink the need to ‘manage’ the planet see Achenbach, Joel, “At the helm of ‘Spaceship Earth’: A new brand of environmentalism calls for man to take charge.” *The Washington Post* 3 January 2012. One assumes this means ‘take charge’ of the problems that human actions have caused.

The depletion of natural resources and thus the holding capacity of the planet is NOT a new revelation as documented by Worldwatch and other Institutions cited in the two *The Washington Post* articles noted in End Note Two. See End Note Three

3. For an example of Worldwatch efforts see *2007 State of the World: Our Urban Future*. This is only one of a library of Worldwatch Institute reports on “Progress Toward a Sustainable Society.” A recent book *The Very Hungry City: Urban Energy Efficiency and the Economic Fate of Cities* (2012) by Troy Austin examines the future fate of Urban agglomerations that are located in highly energy dependent locations. *GREEN METROPOLIS: Why Living Smaller, Living Closer, and Driving Less Are the Keys to Sustainability* (2009) and subsequent work by David Owen also explores these relationships. In his February 2012 book *THE CONUNDRUM: How Scientific Innovation, Increased Efficiency, and Good Intention Can Make Our Energy and Climate Problems Worse*, Owen documents the idiocy of citizens buying their way out of the unsustainable trajectory of civilization without Fundamental Transformations of human activity. Owen fails to shine a light on the path forward, however, because of the four tragic flaws that are found in *Green Metropolis*. These flaws are spelled out in an otherwise favorable review of the book found in *GREEN METROPOLIS, Why Living Smaller, Living Closer, and Driving Less are the Keys to Sustainability*, Current Perspective # 17 linked from the CURRENT PERSPECTIVES page at www.emrisse.com.

The reality of the planet’s holding capacity is avoided by the leadership of Agencies, Enterprises and most Institutions. That is because:

The Agency, Enterprise and most Institutional leaders depend for their short-term political and economic survival on the myth that the planet can support expanding EVERY nation-states’ Gross National Product (GNP / GDP).

The reality of the planet’s shrinking holding capacity is also NOT a focus of MOST Enterprise (aka, MainStream) Media coverage. That is because:

Enterprise media because Enterprise media depends on advertising by the advocates of Mass OverConsumption. See CITIZEN MEDIA, THE NEXT STEP Current Perspective # 09 and LIVE BY, DIE BY Current Perspective # 24 on the *CURRENT PERSPECTIVES* page at www.emrisse.com)

C. THE CURRENT CONDITIONS

As of 31 October there are estimated to be 7 billion humans on the planet.

Half of the human population live in Urban settlement patterns and almost all depend on Urban activities for their Household economic activity.

Half of the human population live in NonUrban (agrarian and hunter / gatherer) settlement patterns and the vast majority depend on NonUrban activities for their Household's economic activity including suppling food and fiber as well as raw and processed material to support the Urban populations.

These two realms of human activity – Urban and NonUrban – make up the human ecological footprint.

Humans are currently in OVERSHOOT due to unsustainable rates of consumption. This is the case, even though only 20 percent of the total population of the planet consumes the vast majority (about 80 percent) of the planets renewable and non-renewable resources. See End Note Four

4. For documentation of OVERSHOOT see the work of Mathis Wackernagel (ecological footprint) as well as publications by Worldwatch and other Institutions. The movie "[HOME](#)" (run time 1:31) provides a comprehensive chronological perspective on the past 4-billion years and a perspective on the trajectory of consumption.

It is important to understand that a population of 7 billion humans is not the BIGGEST problem. The LARGER problem is per capita consumption compounded by the fact that the 80 percent who have been getting less than what they believe to be their fair share are acquiring the tools and weapons to get MORE, MUCH MORE. See End Note Five

5. See again ENOUGH? Current Perspective # 18 and Thompson, Jonathan, "Why 7 billion isn't as scary as you think" The GOAT Blog, *High Country News* 1 November 2011.

The only logical path to achieve sustainable trajectory for technology-based, Urban society includes:

- ◆ **Drastically reduce per capita consumption and end Mass OverConsumption as a driver of GNP / GDP growth,**
- ◆ **Establish new metrics for citizen well being based on happiness and safety, not on consumption and competition, See NEW METRIC FOR CITIZEN WELL BEING – PART FIVE of *TRILO-G***
- ◆ **Create a more equitable distribution of wealth and natural resources, See again ENOUGH? Current Perspective # 18, AND**
- ◆ **Reverse population growth through education to evolve enlightened self-interest concerning all aspects of child bearing and Household size. This is a strategy that has been proven to work.**

The only logical, science-based prospect to achieve reduction in consumption at the magnitude needed to achieve a sustainable trajectory is to evolve functional settlement patterns. Functional human settlement patterns are also the only way to preserve quality of life for the vast majority of humans and to preserve democracies

with informed markets to allocate resources See *THE SHAPE OF THE FUTURE, TRILO-G, ENOUGH? Current Perspective # 18* and the resources cited therein.

D. THREE FUNDAMENTAL TRANSFORMATIONS

The fact that “Functional human settlement patterns are the sine qua non of a sustainable trajectory for contemporary, Urban civilization – ‘modern’ human society as it has evolved to the present” – is established in Volume I of *THE SHAPE OF THE FUTURE*.

In Volume I of *TRILO-G* it is established that the Fundamental Transformation of human settlement patterns CANNOT take place without companion Fundamental Transformations with respect to governance structures and in economic systems.

In order to open the path to a sustainable trajectory for human civilization, citizens must arrive at a consensus – a well considered public judgement – that their individual and collective self-interest requires Fundamental Transformations of

- ◆ **Human settlement patterns,**
- ◆ **Governance structure, and**
- ◆ **Economic systems.**

MANAGING CIVILIZATION – AN OVERVIEW Current Perspective #23 builds on THE ESTATES MATRIX (PART THREE in Volume I of *TRILO-G*). This Perspective summarizes the current deficiencies of the four New Estates and lays the groundwork for understanding the Fundamental Transformations of settlement patterns, governance structures and economic systems.

The focus of SETTLEMENT PATTERN CONSILIENCE is Fundamental Transformation of human settlement patterns, the following two subsections provide a brief overview of the Fundamental Transformations of governance structure and of economic systems.

Fundamental Transformation of Governance Structure

MANAGING CIVILIZATION – AN OVERVIEW outlines the rationale and Conceptual Framework for evolving a Fundamental Transformation of governance structures of Agencies, the New First Estate.

First, it must be understood that the path forward will NOT result from a spontaneous global-wide ‘awakening’ followed by global, continental or nation-state ‘actions’ and ‘mandates.’

A sustainable trajectory for society as a whole will result ONLY if there is an evolution of Community-scale Balance and Resiliency within a context of sustainable New Urban Regions. See End Note Six

6. The New Urban Region is defined in *THE SHAPE OF THE FUTURE* and in GLOSSARY as the smallest organic component of human settlement that is sustainable. New Urban Regions (NUR) are of a scale and Critical Mass capable of achieving a sustainable economic, social and physical trajectory so long as there is RELATIVE Balance and Resiliency WITHIN the components of the NUR.

Strategies to achieve Fundamental Transformation of governance structure would include evolving a new governance structure from the Cluster scale to the planet scale that reflects contemporary and (relevant historic) economic, social and physical reality. That means:

- ◆ The primary focus of governance evolution must be on transferring what HAVE BEEN TO DATE thought to be ‘nation-state’ powers to the Agencies at the New Urban Region and MegaRegion scales – the level of responsibility must be at the level of impact.
- ◆ New governance structure must evolve at and below the Alpha Community scale – Alpha Community, Alpha Village, Alpha Neighborhood and Alpha Cluster. There need be no ‘formal’ governance structure at the Alpha Dooryard scale or the

Household scale. The evolution of governance structure is outlined in Chapter 29 of *THE SHAPE OF THE FUTURE*.

There is a growing body of evidence to support these strategies. See End Note Seven

7. For the rational basis for these strategies see *Nine Nations of North America* (Garreau, 1981, *American Nations: A History of the Eleven Rival Regional Cultures of North America* (Woodard, 2011) and the extensive discussion of evolution of governance structures in *THE SHAPE OF THE FUTURE*.

Also see the recent work of Kirkpatrick Sale on the optimum scale of Agencies with nation-state powers. Sales' analysis is based on measurement of contemporary parameters of citizen well being in existing developed nation-states around the planet. The size of the US causes it to rank very low compared to other, smaller nation-states in objective measures of citizen well being: health, safety, equitable distribution of prosperity, longevity, education, happiness, etc. The same is true for large states in the US, especially those that contain all or parts of two or more New Urban Regions. Kirkpatrick Sales' data suggests the Agencies with nation-state powers should have populations of around 4 million. This is the scale of many large New Urban Regions in the United States.

Fundamental Transformation of governance structure will require moving beyond monetized partisan politics profiled in MANAGING CIVILIZATION – AN OVERVIEW Current Perspective #23. It would also mean abandoning the ideological hobby horses that characterize current political chaos. See End Note Eight

8. See Steven Pearlstein, "Forget super PAC's: A modest proposal for legalized bribery." *The Washington Post*, 5 Feb 2012. Also see FizCon, Current Perspective # 25 (Forthcoming). FizCon highlights the dangerous fallout of simplistic 'fiscal conservatism' in the face of the need for Fundamental Transformations in settlement patterns, governance structure and economic structure.

Fundamental Transformation of Economic Systems

MANAGING CIVILIZATION – AN OVERVIEW Current Perspective # 23 also outlines the current shortcomings of Enterprises, the New Second Estate. Contemporary crony capitalism (aka, Vulture Capitalism and Enterprise Socialism) has evolved to concentrate economic power through the maximization of consumption by citizens. See APPENDIX B – WASTING THE PLANET'S RESOURCES

Citizens' Organizations – including Enterprises – must evolve to eliminate Mass OverConsumption. Unsustainable 'growth' has been a 'goal' of Enterprises since the founding of the US as outlined in MANAGING CIVILIZATION – AN OVERVIEW CP #23.

In recent decades the rate of consumption has been spurred by psychologically sophisticated advertising that preys on primitive genetic proclivities. See LIVE BY, DIE BY Current Perspective # 24 at www.emrisse.com)

Strategies that have been suggested to improve economic performance to serve all citizens and to Balance consumption with conservation AND Balance competition with cooperation include:

- ◆ Limit the scale of Enterprises through graduated Enterprise taxes and other means that discourage Mega-Enterprises created by roll-ups, mergers, leveraged buyouts and hostile take-overs.
- ◆ Democratize Enterprise governance where multiple investors are involved (e.g. in corporations of all forms).
- ◆ Eliminate monopolies that do not have a specific common (public) purpose that is explicitly spelled out in a charter enforced by Agency regulation.
- ◆ Eliminate the myth that Enterprises or Institutions (aka, ‘corporations’) are ‘citizens’ and prevent direct Enterprise and Institutional participation in monetizing political activity. See again End Note Eight
- ◆ Tax the profit derived from short-term ‘investment’ (speculation) to discourage day trading, flipping, short sales and similar practices that make a profit.
- ◆ Relate investment and the tax on the proceeds from investment to LOCATION. For example the lowest capital gains tax rate should apply to the return on investments IN the Neighborhood or Village that is the primary residence of the investor.
- ◆ Reduce (and eventually eliminate) the role of ‘agents’ and ‘brokers’ in Enterprise activity. Agents and brokers are a remnant of the time when most humans were illiterate. Society must evolve so that the vast majority of humans can participate as full citizens, not as shadow citizens who’s primary role is to consume.

As with the Fundamental Transformation of governance structures there are many recent and well-founded suggestions for this Transformation. See End Note Nine

9. These resources include *Supercapitalism: The Transformation of Business, Democracy, and Everyday Life* (Reich), *AFTERSHOCK: The Next Economy and America’s Future* (Reich), *Cornered: The New Monopoly Capitalism and the Economics of Destruction* (Lynn), *Corpocracy: How CEO’s and the Business Roundtable Hijacked the World’s Greatest Wealth Machine and How to Get it Back* (Monks). *The Bridge at the Edge of the World: Capitalism, the Environment, and Crossing from Crisis to Sustainability*

(Speth) and *The Age of Greed: The Triumph of Finance and the Decline of America, 1970 to the Present* (Madrack). Jeff Madrick also authored a cogent summary of the economic landscape in “A World Without Wall Street.” *The Washington Post*, 20 November 2011. Madrick envisions a radical financial reform that would eliminate Wall Street without impacting the American economy. It would also take a giant step toward an Agent-Free society.

The New Economics Institute is making significant contributions to the outlines of a sustainable economy by carrying forward the work of E. F Schumacher (*Small is Beautiful – Economics as if People Mattered.*) involving Gus Speth, Gar Alperovitz and others. Also see *TRILO-G – PART SEVEN – Chapter 24: Greed, Excess, Ignorance, Myths, Entitlements, Windfalls and Subsidies: Widening the Wealth Gap and paving the Road to Entropy and Chaos.*”

The Overarching impact of the Three Fundamental Transitions on Human Society

THE SHAPE OF THE FUTURE articulates the interrelationships between the oft-identified spheres of human experience: Economic, Social and Physical. See Chapter 4 Box 2. The three Fundamental Transformations outlined in *MANAGING CIVILIZATION – AN OVERVIEW*, Current Perspective # 23 have obvious impacts on the Physical as well as the Economic Spheres. They also impact the Social Sphere resulting in democratic societies with informed market systems to allocate resources that are independent, self-reliant, Resilient and therefore sustainable.

II. A NEW CONTEXT FOR HUMAN SETTLEMENT PATTERN EVOLUTION

Section II outlines what has created the new context for settlement pattern evolution over the past five years. Section V (What the Market Will Demand) outlines why the parameters determining human settlement patterns will not revert to pre-2006 conditions.

NB: This section summarizes an number of findings spelled out in more detail in *THE SHAPE OF THE FUTURE*, in *TRILO-G*, in the PowerPoint presentations on the DVDs with the latest version of these two books and the resources found at www.emrisse.com.

A. WHAT HAS CHANGED?

The first question is:

What has changed to set the process of human settlement pattern aggregation on a fundamentally new course?

The answer is:

The location of The Cambium Layer(s) of Regional growth has profoundly shifted.

There has also been a fundamental shift the location of the zone of Regional decay.
See End Note Ten

10. The topic of The Cambium Layer of Regional growth is addressed in Chapter 19, Box 1 of *THE SHAPE OF THE FUTURE*. Also see Marohn, Charles, "Why decline is not normal" in *Better! Cities&Towns* 17 January 2012. For a glimpse at drivers of the new reality see Frey, William H. et. al. "Five Things the Census Revealed About America in 2011" *State of Metropolitan America* # 48 Brookings, 12 January 2012.

The details on these shifts are explored below, but first what caused this profound transformation?

The root cause is, of course, the era of 'Peak Everything' that is documented in ENOUGH? Current Perspective # 18.

The proximate cause is the decline of the dominance of the Automobile. As described by Richard Florida: "The Age of the Car is slowly moving behind us."
See End Note Eleven

11. Florida, Richard in “Toronto Could Use a Good Civic Crisis” (*Globe and Mail* 22 May 2010) elaborates on what Florida’s Home Region must do to prepare for the future.

As documented by ***THE SHAPE OF THE FUTURE*** the primary driver of settlement patterns in the US from 1920 to 2006 WAS the Automobile. Now things are changing due to forces articulated in Section I.

B. INDICATORS OF CHANGE

Land Prices

Land prices ‘at the edge’ of what had been the disaggregated Cambium Layer of Regional ‘growth’ are falling. Farmers are now buying back land previously sold to speculators for Outer Radius Band (aka, ‘fringe’) Urban development. See End Note Twelve

12. Whelan, Robbie, “U.S. Farmers Reclaim Land From Developers” *Wall Street Journal* 14 Nov 2011. Also see Farmland prices in the Midwest sour” *CNN Money* 18 Nov 2011, Sulzberger, A. G., “As Crop Prices Soar, Iowa Farms Add Acreage,” *The New York Times* 31 December 2011. “Farmers look to cash in on higher crop prices: U.S. Growers plan to boost acreage for corn, wheat and soybeans, survey shows.” “U.S. farmers will plant the most acres in a generation this year, led by the biggest corn crop since World War II, taking advantage of the highest agricultural prices in at least four decades.” Wilson, Jeff and McFerron, Whitney *The Washington Post* 12 February 2012.

There are two forces driving land price change:

- 1.) Rising food costs, and
- 2.) Falling values for Urban land uses at and near (and far outside) The Clear Edge.

While the value and price of land for speculative Urban development is going DOWN, the value and price of land for agriculture is going UP due to rising food and fiber costs. In a gross understatement, Robbie Whelan suggested in the *Wall Street Journal* article cited in End Note Twelve that:

“The trend, if it continues, could represent a historic shift away from development in the far reaches of metropolitan areas.”

The Urban land uses that speculators hoped to cash in on WERE:

- 1) Large Single Household Detached Dwellings,

2) Modest, ‘drive-til-you-qualify’ residences – including those sold to buyers with bad credit during the pre-crash feeding frenzy, and

3) Residential support Services.

All of these Urban land uses are totally dependant on Automobiles for Mobility and Access.

As documented in *THE SHAPE OF THE FUTURE – Vol I* and *TRILO-G – Vol I - PARTS ONE and FOUR*, since 1960 there has NEVER been a basis for the speculative prices for most of the land held for future Urban land near and beyond the Logical Location of The Clear Edge.

In summary, the reason is that, even at low development densities of scattered Urban land uses, there was far more land held for ‘future Urban use’ than there was EVER a rational need. This is one of the realities that is made clear by application of $A = \pi R^2$ the First Natural Law of Human Settlement Patterns articulated in *THE SHAPE OF THE FUTURE*.

Conventional Delusion

Many believe that more Jobs => More People => LARGER geographic Region. That has seemed to be the case for five decades but is changing due to the transformations outlined in this Section.

There are two problems with the simplistic misconception about regional ‘growth:’

First: The power of $A = \pi R^2$ The First Natural Law of Human Settlement Pattern articulated in *THE SHAPE OF THE FUTURE*, Chapter 4, Box 5. The impact of vastly underestimating the amount of land accessible from a 20 mile radial trip vs a 10 mile radial trip is significant. This Geographic Illiteracy results in FAR MORE land being THOUGHT to be ‘prime for Urban development’ than there is a market.

The power of the exponential function – and the power of compound interest – is widely misunderstood. Professor Alfred Barrett of the University of Colorado is famous for saying that:

“The greatest shortcoming of the human race is our inability to understand the exponential function”

For the Vocabulary purist it is more correct to say that “The greatest shortcoming of the human race is our inability to understand *variable rate compound interest*.” This is because it is clear that the rates of change in population and food supply are ‘variable’ from time period to time period. Historically, the primary way Barrett and others are challenged by Julian Simon and the rest of the Anti-Malthus “growth is good” advocates is to point out that population and food supply do not grow or shrink at CONSTANT (exponential) rates.

The use of Professor Barrett's phrase "... inability to understand the exponential function" works just fine for dealing with the human inability to understand the application of $A = \pi R^2$ to human settlement patterns and the First Law of Human Settlement Patterns as outlined in *THE SHAPE OF THE FUTURE*.

By adopting the term "variable compound interest" instead of "the exponential function" one can also address the failure of humans to understand Internal Rate of Return and the locational fallacies driving NonUrban (raw) land speculation.

Second: In addition to being confused by the power of the compound interest, there is an even larger problem.

The key driver of confusions is that the old Sweet Spot on the Cost of Services Curve noted in Section I and further discussed in Section IV for MINIMUM Urban densities WAS 10 pn/ac at the Alpha Commuting scale. This Sweet Spot was derived from what the unsubsidized market actually produced between 1960 and 1985. A primary determinate was the availability of cheap fuel to power Large, Private Vehicles. Large, Private Vehicles provided Mobility and Access for disaggregated Urban activity. Cheap energy also overcome disaggregated human settlement patterns in many other ways – utility services, deliveries and energy transmission.

Now, as noted in subsection D. below, due to rising energy costs and the "no-persons-land" between Large, Private Vehicles and the SharedVehicle systems on the Cost of Services Curve the Sweet Spot for the minimum Urban density has migrated to 30 pn/ac at the Alpha Community scale. See *THE SHAPE OF THE FUTURE*, Chapter 24 Box 3.

This means that instead of about 10 times too much land devoted to and held for Urban land Uses within 100 miles of the Centroid of a large New Urban Region as established by Stark Contrast, there is 30 times too much land. And it also means that much of the land now devoted to Urban land uses – not just held for future Urban land use – must be 'DeUrbanized.' The net result is declining land values for Urban land uses.

Dwelling Values

The downward trend of the value of land for Urban land uses at 'the fringe' is mirrored by the trend of the value of existing dwellings. The trend in dwelling value is not, however, limited to the extremities of New Urban Regions.

In fact, the value of ALL existing dwellings sold in the 20 largest New Urban Regions – after a brief up tick in the spring of 2011 – is down for the last six months. Further the number of existing homes sold over the past five years was actually LOWER than previously reported. See End Note Thirteen

13. “Home prices down for 6th straight month” *CNN Money* 27 December 2011 based on S&P / Case-Shiller 20 Metro Area index. “Existing home sales to be revised lower” *CNN Money* 13 December 2011 reporting on action that was taken by the National Association of Realtors on 21 December 2011.

Underwater Mortgages

At the present time, about 25 percent of the dwellings in the US are ‘underwater.’ The ‘owners’ owe more on their mortgage than the dwelling is worth. That is a NATIONAL estimate. The number of underwater mortgages varies by Region with the Los Vegas, Phoenix and Central California New Urban Regions having the highest rate of underwater mortgages.

More important, the percent of underwater mortgages VARIES by Radius Band in each Region.

The National Capital SubRegion of the Washington-Baltimore NUR has fared quite well due to lower than average unemployment and some job growth. However, Prince William County in the Radius = 20 Miles to Radius = 30 Miles Band has 40 percent of its dwellings underwater. That in spite of a recent spate of high-end McMansion development intended to attract the well-to-do in the western part of Prince William County and the fact that Prince William County, Virginia had the ninth highest median household income in the United States in 2010. Wrong Size House in the Wrong Location. See End Note Fourteen

14. Shin, Annys, “Facing ‘the end of the year uglies’: When Foreclosures Collide with the Holidays.” *The Washington Post*, 30 December 2011.

Bankruptcies

The drop in value of dwellings has led to an epidemic of bankruptcies. It is generally agreed that the ‘market’ is less than half way through adsorbing the backlog of foreclosures cause by The Great Recession and by fraudulent lending practices. See End Note Fifteen

15. “Foreclosures on the rise again” *CNN Money* 10 November 2011. Dennis, Brady, “Housing experts warn of long road despite ‘signs of life’” *The Washington Post* 25 November 2011 and End Note Ten.

It should be noted that the concerted attempt to ‘rescue’ Households with underwater mortgages and prevent bankruptcies will help individuals who qualify for the programs but will not increase the market value of Wrong Size Homes in the Wrong Locations.

Regional Location Matters

While most of the data focuses on ‘regional’ (actually, SubRegional) ‘averages,’ it is critical to

understand that the values of existing dwellings and land in the outer Radius Bands of most New Urban Regions – where the majority of the underwater mortgages exist and the majority of the foreclosures have taken place and will take place – have fallen farther and are projected to keep falling for the foreseeable future.

Cris Leinberger suggests that the value of existing large dwellings (aka, McMansions) in “the fringe” of large New Urban Regions is now BELOW REPLACEMENT VALUE with NO VALUE attributed to the land or the improvements. This is because the cost of material and labor have continued to increase while the value of existing oversized dwellings has fallen. See End Note Sixteen

16. Leinberger, Christopher B., “The Death of the Fringe Suburb” The New Your Times 26 November 2011. Also see Leinberger’s “The Next Slum” in the March 2008 *Atlantic*.

Where is the ‘Fringe?’

One problem with the accurate comprehension of Regional housing data – including Leinberger’s analysis – is identifying the exact location of “the fringe.” The same problem arises for those who use Core Confusing Words such as ‘outer suburban’ and ‘exurban’ or rely on data delimited by municipal or state borders for their analysis.

In fact, the location of ‘the fringe’ (the Radius Band with the most dramatic house and land value decline) is easy to identify on a contemporary air photo. The simple way to CLEARLY describe ‘the fringe’ is to note that it is the area with scattered Urban land uses that it is “outside the Logical Location of The Clear Edge around the Core of the New Urban Region.” See End Note Seventeen

17. See “The New Urban Region Conceptual Framework” on the Beta 2 *TRILO-G* CD and the definition of “The Clear Edge” in GLOSSARY on the *RESOURCE* page at www.emrisse.com. Also see exploration of The Clear Edge and the amount of land at and near The Clear Edge’ in Section IX.

The specific radial location of housing in the most trouble in any New Urban Region depends on variables specific to that Region. They include the economic, social and physical Critical Mass of the Core of the New Urban Region under consideration and the rate of population and economic ‘growth’ over the past 40 years.

Within these Regional parameters, the radial distance from the Centroid of the Urban agglomeration to The Clear Edge varies from radial corridor to radial corridor and depends on topography, corridor Mobility and Access capacity, historic settlement patterns and ‘favored corridor’ status.

C. THE BOTTOM LINE ON DECLINING LAND AND DWELLING VALUES

The underlying cause for the bad economic news concerning land held for scattered Urban land uses and for existing dwellings and residential support uses is:

- ◆ The gross over expansion of land devoted to Urban uses, and
- ◆ Building the Wrong Size Houses in the Wrong Locations. See End Note Eighteen

18. See JUST THE FACTS Current Perspective # 13 on the *CURRENT PERSPECTIVES* page at www.emrisse.com and the references cited therein.

Those who have observed the pattern of metropolitan expansion over the past 40 years have seen this coming for years. See End Note Nineteen

19. Risse, E M, *Planning and Zoning Problems in Areas of Transition—The Physical Impact of Urbanization of New York State*, 272 pages, New York State Office of Planning Coordination, March 1969 and Risse, E M, “The American Settlement Pattern of the 21st Century – Where are the “Sub’ urbs Going?” *Futures Research Quarterly* Fall 1993. Vol 9 Number 3. Also available at <http://sgnarc.ncat.org/engine/index.php/resources/2001/10/16/The-American-Settlement-Pattern-of-the-21st-Century-Where-Are-the-quotquotSubquotquoturbs-Going>

Those who are addicted to a vision of ‘growth’ (Mass OverConsumption) that is driven by selling more and more Large, Private Vehicles and more and more Wrong Size Houses in the Wrong Locations see ‘the housing crisis’ in terms of the need to ‘build more dwellings.’ They point out that over the past three years fewer dwellings have been built per year while at the same time the population has continued to grow, all be it modestly.

This view fails to recognize the underlying drivers of the shelter reality noted in the last subsection and the reality of the future market documented in Section V. Among other realities noted in Section V, is the fact that the modest population growth has been more than offset by an increase in the number of persons in each Household.

The Panglossian / Business-As-Usual view also avoids the fact that up to 10 percent of all dwellings are now vacant and that vacant dwellings are continuing to deteriorate.

Most unrealistically of all, the Business-As-Usual view of the role of shelter in the current economy avoids the reality that dwelling prices continue to drop. See End Note Twenty

20. For a summary of the deluded Business-As-Usual view see Irwin, Neil, “That [2011] was a bust. Could 2012 be better?” *The Washington Post* 1 January 2012. For a more realistic view published by the same paper, in the same section, on the same day see Ritholtz, Barry “On Investing.” Myth # 2 that may fool ‘investors’ is: “Housing has bottomed.” Also see DEGROWTH – SHRINKING TO SURVIVE THEN PROSPER Current Perspective # 03 on the *CURRENT PERSPECTIVES* page at www.emrisse.com

An important fact to understand about the Affordable and Accessible Housing Crisis is that there are few nation-state or state Agency actions that can be taken to address this crisis.

As the note above on the ‘rescue’ of underwater home mortgages, almost all the useful actions must be taken at the Neighborhood, Village, Community, SubRegional and Regional scales. These actions MUST build on the existing resources at those scales and will not result from a new trickle-down subsidy supporting the Wrong Size House in the Wrong Location or reliance on Large, Private Vehicles for Mobility and Access.

The future Sweet Spot settlement patterns noted in the following subsection and discussed in Section IV respond to the market noted in Section V as to the new settlement patterns at and near The Clear Edge discussed in Sections VI, VII, VIII and IX.

These new settlement patterns will result in the opportunity to build less expensive dwellings and drastically lower the TOTAL cost of Mobility and Access for citizens and Households and for Agencies.

The best thing (and perhaps the only thing) states and nation-states can do to address the Affordable and Accessible Housing Crisis is to facilitate and implement Fundamental Transformations of the governance structure and Fundamental Transformations of the economic systems. These Transformation must to shift governance responsibility DOWN to Agencies at scales that can more directly respond to citizen needs in the smaller components of human settlement patterns . These topics are addressed in both *THE SHAPE OF THE FUTURE* and *TRILO-G* with specifics provided in Sections V, VI and VII of this Perspective.

D. THE NEW CAMBIUM LAYER

Heathy Urban fabric requires that the entire Urban fabric continually change and mature. This is fundamentally different from the organic structure most often thought of in the context of a ‘cambium layer’ – trees.

In the case of trees, growth takes place in a single cambium layer.

The organic structure of Urban fabric is fundamentally different from that of trees. It is more like the organic structure of a forest. Throughout the Urban fabric, and at all component scales, as the Urban activities change, the fabric must evolve.

Depending on the scale of the component and the specific location of the component in relation to the Centroid of the Region, the rate and character of the change varies. See End Note Twenty One

21. For example, with contemporary building technology and practice at the Unit scale, roofs, porches and windows need regular replacement. The wiring, HVAC and plumbing systems need periodic repair and replacement. Beyond the Unit scale, at the Cluster scale, water and sewer lines, electric, gas and communications lines as well as sidewalks, roadways, trees and landscaping need maintenance and replacement.

Throughout the last 13,000 years when there was a need for new Urban uses – a larger marketplace, a more grand temple, additional dwellings, new defense works, a larger cathedral, a railroad station – the Urban fabric changed.

Over the first 12,800 years of the 13 millennia since the first intentional Urban enclaves started to evolve, settlement patterns have evolved a wide variety of forms. However, almost all have exhibited ‘organic’ growth guided by topography, climate, social structure and natural forces. See End Note Twenty Two

22. For a simple and entertaining graphic portrayal of the issue of Urban decay see again Marohn, Charles, “Why decline is not normal” in *Better! Cities&Towns* 17 January 2012.

There have been many parameters of this organic growth. For example the winter and summer solstice guided the location and orientation of not just major cultural and ceremonial facilities but also entire settlement orientations and layouts. Unfortunately, except in a few dominate cultures and contexts – e.g. Roman provincial capitals – MOST of the guiding parameters that existed before the year 1000 CE have been lost. MANY of the guiding parameters that existed in 1450 have also been lost due to European Colonial exploitation.

From 1450 to 1800 there was a high level of ignorance, misunderstanding and political / religious spin on the past parameters of ‘discovered’ and conquered societies. There was but better documentation of activities by the colonial exploiters. See End Note Twenty Three

23. For example, there is a pathetic level of ignorance of pre-Columbian Urban civilizations and societies including understanding of Urban settlement patterns in the era before European Colonial and post-Colonial exploitation. See Diamond, Jared, *Guns, Germs and Steel*. For specific examples in the Southeaster North America see Thornton, Richard, *Itsapa, The Itza Mayas in North America* , History Revealed (2012)

Over the past 660 years, massive Urban area expansions – and significant settlement pattern changes – were driven by the Black Death, the Renaissance, the Scientific Revolution, European Colonial and post-Colonial exploitation and the Industrial Revolution.

During the first 570 years of this period the growth and change took place through out the Urban fabric. However most of the physical expansion of Urban fabric took place in a narrow band (a cambium layer) at the outer edge of the Urban fabric.

New defense walls and new infrastructure expanded the location of The Clear Edge between the Urbanside and the Countryside.

This reality is more clearly visible in Western Europe than in most of North America. As documented in *THE SHAPE OF THE FUTURE* and *TRILO-G*, since 1920 in the US, Urban form has been driven by the need to provide space to drive and park Large, Private Vehicles – the Automobile. See End Note Twenty Four

24. See *TRILO-G* – PART THREE – THE PROBLEM WITH CARS. An interesting question is: Are Automobile driven settlement patterns ‘organic’? Automobiles are built by organisms (humans). A similar inquiry could be made into Urban development in flood plains, on earthquake faults and in tsunami and hurricane prone coastal zones. But for the breakneck expansion of Urban fabric to accommodate rapidly expanding Urban populations, would these dysfunctions have been intensively developed or would minor catastrophes have led to learning by trial and error – the characteristic of organic evolution of human settlement patterns – and resulted in a more resilient Urban fabric?

From 1920 to 2006, as documented by the work of SYNERGY, the human settlement pattern that evolved outside The Logical Location of The Clear Edge can best be described as dysfunctional ‘Swiss Cheese.’ That is because, INSIDE The Logical Location of the Clear Edge, settlement patterns have been ‘frozen’ in ‘Sub’Urban configurations.

This dysfunctional settlement pattern has resulted from the forces outlined in Volume I of *THE SHAPE OF THE FUTURE*. In Chapter 19 Box 1 there is a discussion of the disaggregation of the cambium layer of Urban fabric growth.

In retrospect it is clear that the ‘problems’ of Urban ‘growth’ over past 90 years – the Helter Skelter Crisis, the Affordable and Accessible Housing Crisis and the Mobility and Access Crisis – differ by Radius Band.

In this context there are two key sources of settlement pattern dysfunction:

- ◆ To too little change in Inner Radius Bands. As documented in *THE SHAPE OF THE FUTURE*, the inner radius bands have been frozen in immature Urban settlement patterns by inappropriate regulations. The resulting dysfunction is

documented by the work of William Lucy and David Philips in “*Confronting “Sub”urban [Settlement Pattern] Decline: Strategic Planning for Metropolitan Renewal*” (2000) and *Foreclosing the Dream: How America’s Housing Crisis Is Reshaping Our Cities and Suburbs [Urban Fabric]* (2010).

- ◆ Vastly more land is devoted to current Urban uses due to scatteration. In addition, vastly more land is reserved for future Urban uses than there is a foreseeable market based demand. This has resulted in the dysfunctional ‘Swiss Cheese’ settlement patterns in the Outer Radius Bands as noted in *THE SHAPE OF THE FUTURE*, Chapter 19 Box 1

The phasing out of the Large, Private Vehicle as the ONLY way the vast majority achieve Mobility and Access IN Urban enclaves of all scales has resulted in the Sweet Spot for Alpha Community scale human settlement morphing from 10 persons (pn) per acre (ac) to 30 pn/ac.

This Transformation, as noted in ENOUGH? Current Perspective #18, is due to:

- ◆ Loss of access to cheap energy in more developed nation-states
- ◆ The need to fairly and equitably distribute the planet’s resources, and
- ◆ The need to fairly and equitably distribute location-variable costs.

The impact of dysfunctional (Swiss Cheese) settlement patterns and the impact of changing the Sweet Spot of the MINIMUM density for functional and sustainable human settlement patterns is explored in Section VI

Because of the current and future reality outlined in ENOUGH? Current Perspective #18, MOST Households cannot afford (and are finding that they do not ‘need’) as much interior OR exterior ‘space’ as they have been conditioned to believe was prudent by advertising designed to encourage Mass OverConsumption. The majority of Households cannot afford disaggregated (detached and semi-detached) dwellings even if those dwellings and the Mobility and Access systems are heavily subsidized.

Over the last 20 years many citizens bought Wrong Size Houses in the Wrong Location because they believed that it was a ‘good investment.’ This was an illusion driven by advertising and propaganda created by those who profit from Mass OverConsumption.

The Urban land uses that were appropriate in times past are no longer appropriate of economically viable. See End Note Twenty Five

25. The largest and most respected Institution representing responsible developers and builders, The Urban Land Institute (ULI), in December 2011 issued a [report](#) titled “Demographic Changes Mean Dramatic Shifts in Demand for California Housing.” The ULI report finds imbalance between consumer preferences and existing housing stock. This topic is further explored in Section V.

It can be argued that for the last 50 years the only reason that the mode-of-the-market, dysfunctional settlement pattern could be called ‘appropriate’ in ANY context was because:

- ◆ There has never been a fair allocation of the full location-variable costs, and
- ◆ Gross subsidies for BOTH large dwellings (e.g. income tax deduction for mortgage payments) and gross subsidy of Large, Private Vehicles (e.g. general fund allocations for road, parking, water and sewer facilities to ‘spur growth.’

E. BEYOND PHYSICAL DISAGGREGATION AND DYSFUNCTION

Before moving to Section III on settlement pattern dysfunction, it is important for all to understand that it is NOT JUST physical scatteration due to dysfunctional human settlement patterns that has disaggregated human societies and put civilization on a unsustainable trajectory.

As made clear by the ‘social’ chapters of *THE SHAPE OF THE FUTURE* (Chapters 8, 9, 17, 28, 29, 30, 31 and 32) and in *TRILO-G PART FIVE* there is also profound social disaggregation. This reality has been popularized by Putnam, Robert *Bowling Alone* (2001) and myriad social commentators since 2001. Also see APPENDIX A – READING LIST – Resources for SETTLEMENT PATTERN CONSILIENCE

Mass OverConsumption is the cause of massive economic dysfunction. Mass OverCommunication also leads to the decay of communities at all scales.

The illusion of electronic ‘communities’ masks the need for direct human contact and communications.

Over-reliance on Large Private Vehicles to achieve Mobility and Access results in mass over-provision of space to drive and park Large, Private Vehicles. This over-reliance on Large, Private Vehicles and failure to provide functional SharedVehicles disaggregates human settlement patterns and thus human civilization to the point of dysfunction.

In a similar way, over-reliance on electronic communications renders many of the most important human interactions dysfunctional through failure to provide functional SharedSpaces.

Over-reliance on electronic communication wipes out the ‘credibility vetting’ function of face-to-face contact and other aspects of the inter-personal ‘social contracts’ that have evolved over millions of years. This renders human interaction dysfunctional due to insulating and isolating Large Private Spaces.

There is a related critical driver of dysfunctional human interaction that needs to be addressed in this context.

Due to physical mobility based on cheap fuel and subsidies for Large Private Vehicles and ‘prosperity’ based on Mass OverConsumption over the past five decades, there has been a massive ‘Self Sorting’ into ideological enclaves that are superficially labeled ‘red’ and ‘blue.’

When added to the impact of Mass OverCommunication that destroys locational nexus, the agglomeration of self-reinforcing affinity groups results in dysfunctional polarization. See End Note Twenty Six

26. This concept is comprehensively explored and graphically illustrated by Bishop, Bill *The Big Sort: Why the Clustering of Like-Minded America Is Tearing Us Apart* (2009).

There are some who agree with Morris Fiorina as presented in *Culture War? The Myth of a Polarized America* (2004) and *Disconnect: The Breakdown of Representation in American Politics* (2012). Fiorina and others believe that the politicians have become wildly partisan and do not represent citizens. Others agree with Alan Abramowitz *The Disappearing Center” Engage Citizens, Polarization, and American Democracy* (2011) and *The Polarized Public: Why Our Government Is So Dysfunctional* (2012). Abramowitz and others believe that citizens are as polarized as the politicians.

It appears that there is a middle ground. SOME citizens are politicized and polarized but many – the Running As Hard As They Cans (RAHATC) featured in PROPERTY DYNAMICS – PART ELEVEN of *TRILO-G* – do not have time for many things, including politics to the extent they do not know who is running for what office or on what platform. Add to the RAHATC those who are too young to care and those old enough to recall a different era and who are completely turned off by the whole political process and you have a more complete picture of current political participation.

Any way one cuts it, the only path forward is a Fundamental Transformation of governance structure that is related to economic, social and political reality. See again Section II and End Note Eight

With respect to human settlement patterns, these disaggregating forces are reinforced by primitive genetic proclivities such as the genetic proclivities that drive unfounded Neural Linguistic Frameworks (via Core Confusing Words) and disorienting Naive Reality – especially in the context of Geographic Illiteracy and Locational Obliviousness.

F. WHERE TO FROM HERE?

Property values are continuing to fall outside Radius = 30 Miles – Even in the most prosperous New Urban Regions in the United States. Because of the magnitude of the change, it may be years before there is wide-spread acknowledgment by osmosis but the handwriting appears to be on the wall.

What conditions will exist after humans acclimate to the new reality?

Many agree on the conditions that SHOULD exist. The question is: Can humans work to insure that patterns and densities of Urban activity evolve to be functional and sustainable? See End Note Twenty Seven

27. A related question is: Can humans avoid escalating existing conflicts from Dooryard to global scale? These conflicts, if not reversed, will lead to a decent into chaos and reversions of societies to more primitive economic, social and physical parameters. As noted in Section I, these societies have less efficient systems that will result in fewer human being able to survive on the planet. Resource shortages will escalate all the conflicts.

It is important to note that MORE functional and sustainable settlement patterns WERE the settlement patterns of choice in the 1920s and 1930s as documented by the Henry Wright Plan for New York State in 1928 and other river basin and ‘Regional’ plans of the period.

It did not stop there. There are very good examples of EXACTLY these SAME Regional and SubRegional settlement patterns were being advocated in the 1950s and 1960s See End Note Twenty Eight

28. See the ‘Northern Virginia Regional Plan’ prepared in 1965 that is profiled in the PowerPoints included on *THE SHAPE OF THE FUTURE* Fourth Printing CD. Also see SuperNoVa Summary 24 February 2012.

What happened between 1965 and today is, of course, profoundly different. The following section summarizes current human settlement pattern dysfunction.

III. CORE SETTLEMENT PATTERN DYSFUNCTIONS

Section III briefly summarizes the three primary indicators of settlement pattern dysfunction. For more detailed analysis see *THE SHAPE OF THE FUTURE* and *TRILO-G*.

A. HELTER SKELTER CRISIS

There is a dysfunctional, anti-system now employed to manage the land resource in the US and across the planet. See THE USE AND MANAGEMENT OF LAND – PART FOUR of *TRILO-G*

Human settlement patterns are dysfunctional and unsustainable at MegaRegional, Regional, Community, Village and Neighborhood, Cluster, Dooryard and Unit scales.

The Key indicators of Helter Skelter Crisis are:

- ◆ Far too much land is devoted to Urban land uses, especially dysfunctionally scattered Urban uses at and near the Logical Location of the Clear Edge.
- ◆ Wide-spread abuse of land devoted to food production as indicated by erosion, loss of top soil, chemical contamination.
- ◆ Far too little land is reserved for natural processes / cycles.
- ◆ Wide-spread misuse the of land that supports natural processes and cycles – fresh water streams / aquifers and clean air. The gross misuse includes land in private as well as in public (common) ownership.
- ◆ Almost complete failure to allocate the cost of human settlement pattern externalities
- ◆ Grossly unfair and counter-productive allocation of those limited settlement pattern externalities for which there is SOME accounting

B. THE MOBILITY AND ACCESS CRISIS

As documented by *THE SHAPE OF THE FUTURE*, Transport is the Canary in the Minefield of Dysfunctional human settlement patterns.

The current mobility and access infrastructure cannot and will not serve the needs of Urban citizens in the future.

It does not matter WHO pays for it or HOW it is paid for, the current transport infrastructure does not provide Mobility and Access for the MAJORITY of citizens. The percentage of the population that is well served by the existing system has decreased in inverse proportion to the percentage of seat-miles traveled in Large Private Vehicles. This is a matter of physics and economics (See PowerPoint *The Physics of Gridlock* on *THE SHAPE OF THE FUTURE*, 4th Printing CD). Also see work of the [Victoria Transport Policy Institute](#).

The facts are:

1. The infrastructure that was planned in the 1920s, 1930s, 1940s and 1950s (INCLUDING the 1924 Interregional Highway System and the 1956 Interstate and Defense Highway System) cannot serve the settlement pattern that has evolved since 1950.

In fact NO infrastructure is capable of serving the dysfunctional settlement patterns AND at the same time meet the Mobility and Access needs of the majority of citizens even if there was abundant, cheap energy and there was no negative environmental impacts from massive consumption of this energy.

2. It is now clear that the settlement pattern that has evolved since 1950 cannot support Urban human civilization in the context of:
 - ◆ Finite cheap energy supplies and rising energy costs and / or shrinking economies
 - ◆ Rising cost of food and fiber
 - ◆ Shrinking supply of potable water
 - ◆ The absolute necessity of food and water security
3. The current infrastructure to provide Mobility and Access cannot support a functional and sustainable human settlement pattern that reflects economic, social and physical reality outlined in Sections I, II, IV, V, VI, VII, VIII and IX of this Current perspective.

The new context – articulated in ENOUGH?, Current Perspective #18 – results in the absolute need for Fundamental Transformation of settlement patterns at the Cluster, Neighborhood, Village, Community and Regional scales.

There must be Resiliency WITHIN each component from the Dooryard scale to global scale. That means having the Critical Mass to achieve Balance and Resiliency.

Achieving Critical Mass and Balance will require Village, Community, SubRegional, Regional and MegaRegional Transformations to achieve Import Replacement, less per capita demand for the movement of goods and FAR fewer total resources devoted to Mobility and Access systems. See End Note Twenty Nine

29. ***THE SHAPE OF THE FUTURE*** documents that to achieve a sustainable trajectory for civilization, Urban citizens must embrace the reality that with finite resources, ‘transport’ is a waste of resources to be minimized. That is because, when functional human settlement patterns exist many more citizens are ALREADY where they want and need to be. That means that jobs, housing, goods and services are close at hand – a Balance of J / H / S / R / A. As luck would have it that is EXACTLY what the market will demand as noted in Section V. Also see “Market trends favor transit” in *New Urban Network* 26 October 2011 and Doig, Will, “In the future, urban bikers go faster than cars’ 17 December *Salon.com*.

Achieving Resiliency will also require Balance of competition with cooperation and Balance of consumption with Natural Income and productivity. That means less resources devoted to Mobility and Access and less emphasis on ‘speed.’ See Again End Note 29.

The First Step

The FIRST step to ending the Mobility and Access Crisis is to evolve consensus on what will constitute functional and sustainable settlement patterns.

Only when there is consensus on future settlement patterns at the MegaRegional, Regional, SubRegional, Community, Village, Neighborhood and Cluster scales can citizens and their Agencies, Enterprises and Institutions design the Mobility and Access infrastructure to support those settlement patterns. See End Note Thirty

30. Up until 2006 the subsidies note in Section V lowered the ‘apparent’ cost of Mobility and Access. This meant that the ‘effective’ Sweet Spot of the Cost of Services Curve for human settlement patterns (patterns that were dependent on the Automobile) WAS about 10 Persons per Acre (pn/ac.) at the Alpha Community scale. This was the density of Planned New Communities planned, designed and built between 1972 and 2006. As documented in Section II and IV, since 2006 the fundamentals have changed. The new

Sweet Spot for the minimum functional and sustainable settlement patterns at the Alpha Community scale are now 30 pn/ac.

The market documents that the patterns and densities that evolved from 1870 to 1940 have the best value and functionality for citizens and their Organizations.

The ONLY settlement patterns that have agglomerated since 1950 that are functional for the majority of the citizens are ones that reflect the patterns of the 1870 to 1940 time period, PERIOD. Sustainable infrastructure must support all 9 organic scales of human settlement – Dooryard, Cluster, Neighborhood, Village, Community, Region, MegaRegion, continent and planet. Different Mobility and Access Systems will serve:

- ◆ Communities and the four components of every Community, AND
- ◆ The four organic scales above the scale of the Community. (A tenth scale – the SubRegion – is also often useful to consider in the design and function of Mobility and Access Systems but a SubRegion is NOT an organic component.)

MultiUse Corridors – A Place to Start

One place to START the discussion of new Mobility and Access strategies is with MultiUse Corridors – REPLACING Express Ways. This replacement should ALWAYS be the first option INSIDE the Clear Edge and as well as Outside Clear Edges in the Countryside.

Application of MultiUse Corridors must also replace ALL ByPasses and ByPassByPasses in and around Urban fabric. See THE OBLIVIOUSNESS OF LEADERS COMPOUNDS THE IGNORANCE OF CITIZENS, Current Perspective # 14 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com

MultiUse Corridors serve pedestrians, SelfPowered Vehicles, LowPowered Vehicles and SharedVehicles as well as Large Private Vehicles.

The design and access to MultiUse Corridors favors use by pedestrians, SelfPowered Vehicles and LowPowered Vehicles over the use of by Large Private Vehicles. This is accomplished by fairly allocating the FULL costs of use, as well as by the design and location of access points for each mode of travel. See SYNERGY PERSPECTIVE ON THE OUTER BELTWAY IN VIRGINIA, Current Perspective # 20 on the *CURRENT PERSPECTIVES* page at www.emrisse.com

Settlement patterns served by MultiUse Corridors support the use of SharedVehicles by creating functional station area settlement patterns and by fairly allocating the full cost of the use of all vehicles.

As documented by the graphics and data in Todd Litman's "[Optimal Transport Policy For An Uncertain Future](#)", the last decade – and especially in the last five years – have fundamentally changed future transportation infrastructure demand.

In spite of this, federal, state and municipal transportation Agencies continue to plan for future facilities based on the extrapolation of past trends.

C. AFFORDABLE AND ACCESSIBLE HOUSING CRISIS

It is not possible to overestimate the importance of creating settlement patterns with an appropriate mix of Jobs / Housing / Services / Recreation / Amenity at all scales from the Neighborhood to the MegaRegion.

One of the primary dysfunctions of the settlement pattern that has evolved since 1950 is to place the Wrong Size House in the Wrong Location. The primary indicator of this dysfunction is that there is a widely recognized and well documented mismatch between Jobs location and the location of Housing for those who hold those Jobs.

The causes of this dysfunctional mismatch has been clear since the 1960s. The 'cures' were known long before the 'cause' of the crisis was clearly articulated. ' See End Note Thirty One

31. See discussion of the causes and cures of dysfunctional human settlement patterns and specifically of Affordable and Accessible Housing in *THE SHAPE OF THE FUTURE* and in *TRILO-G* and the sources cited therein. The basic thrust of these two books was first articulated in Risse, EM. *Planning and Zoning Problems in Areas of Transition—The Physical Impact of Urbanization of New York State* New York State Office of Planning Coordination (1969). Over this time frame there have been libraries full of books and studies on how to 'fix' 'sub'Urban settlement patterns. Many have included good ideas but lacked an overarching and comprehensive Conceptual Framework and a robust Vocabulary to articulate that Framework. As the reality of the post 2006 world dawns, the insight grows more useful. See for example: Arieff, Allison, "Shifting the Suburban Paradigm" *NYTimes.com* 2 October 2011.

The future Sweet Spot for minimum settlement patterns the Cost of Service Curve note in Sections II and Section IV respond to the market outlined in Section V. These new settlement patterns will result in the opportunity to build less expensive dwellings and drastically lower the TOTAL cost of Mobility and Access for citizens and Households and for Agencies.

As noted in Section V, building the Wrong Size Houses in the Wrong Locations has not been 'the market' but by a distortion of the market.

IV. HUMAN SETTLEMENT PATTERN TRANSFORMATION

Section IV examines the categories of tools citizens can use to Fundamentally Transform human settlement patterns to reflect the new Sweet Spot on the Cost of Services Curve of 30 pn/ac (persons per acre) at the Alpha Community scale.

A. OVERVIEW

There are three overarching strategies that citizens can apply to achieve functional and sustainable settlement patterns. In order of effectiveness, the three strategies are:

- ◆ Citizen Education
- ◆ Market Forces
- ◆ Land Use Controls (Regulations)

In this section, these strategies are considered in inverse order. See End Note Thirty Two

32. It is important to note that before 1776 Urban (and to a large extent NonUrban) settlement patterns were determined by natural forces (geography, topography, climate, etc.) and by the Church (the Old First – or Second – Estate) and the Nobility (the Old Second – or First – Estate). After 1776 in the United States settlement patterns have been determined by natural forces AND by the Agencies (the New First Estate), by Enterprises (the New Second Estate), by Institutions (the New Third Estate) and by Citizens and Households (the New Forth Estate). See THE ESTATES MATRIX – PART TWO of *TRILO-G*.

With the emergence of Large, Private Vehicles (cars, and trucks) after 1900, ‘control’ shifted to Enterprises and to citizens who could be convinced that they could rely on Large, Private Vehicles for Mobility and Access. See Volume I of *THE SHAPE OF THE FUTURE*, THE PROBLEM WITH CARS – PART THREE of *TRILO-G*, JUST THE FACTS Current Perspective # 12 and WHAT FOLLOWS THE CAR Current Perspective # xx (forthcoming).

B. LAND USE CONTROLS

Land Use Controls based on the ‘police power’ of Agencies anointed by the US Supreme Court in 1928 (*Ambler v. Euclid*) BY THEMSELVES are the LEAST effective of the three strategies citizens can use to shape human settlement patterns. However, Land Use Controls are the focus of most Agency and Institutional actions and most discussions OF THE TOPIC.

Land use controls are also the context of most of the ‘defeats’ resulting in the dysfunctional human settlement patterns outlined in Section III.

Land Use Control in this Perspective include not just ‘the big four’ – Comprehensive Plans, Official Maps, Subdivision Regulations, and Zoning Ordinances. (Zoning Ordinances include provisions for Urban Growth Boundaries (UGBs), protection of steep slopes, bad soils, wetlands, etc.) As applied in this Perspective, Land Use Controls also include the Transfer of Development Rights (TDRs), Transfer of Property Rights (TPRs), Purchase of development rights (PDRs), conservation easements of all forms and other tools. See End Note Thirty Three

33. The view that these land use control tools are ineffective is the view of the author who holds a law degree and who has drafted, administered or sought approval under about 150 land use control systems in eleven states over a 40 year period. Drafting experience ranged in scale from the three level system that regulates land use in the New York’s 6,000,000 acre Adirondack Urban Support Region to major Urban county regulations – e.g. Fairfax County, VA, Guilford County, NC – to overlay historic and special use regulations for places as diverse as Utica, NY, Cooperstown, NY and Ellicott City, MD – while chair of the Historic District Commission. See *CV Bio* page at www.emrisse.com)

With respect to the failure of Land Use Controls to achieve the desired results, a case in point is a jurisdiction which is often cited as having done a ‘very good’ job with Land Use Controls – Fauquier County, VA.

Fauquier County which prides itself on ‘controlling growth’ had an AVERAGE lot size for new residential dwelling units of 6.5 acres during the January 1993 to December 2003 timeframe.

SYNERGY published four ‘Dot Maps’ showing dwelling unit location by time frame in the central part of Fauquier County spanning the period from January 1900 to December 2003. In 2012 the County published a consultants report that confirmed this pattern continued through 2011. See End Note Thirty Four

34. The SYNERGY graphics are presented in *TRILO-G – PART ONE ROOTS OF THE HELTER SKELTER CRISIS* – Chapter 2 – “Scatteration: Disaggregated Urban Land Uses Outside The Clear Edge.” The Fauquier County study by Renaissance Planning Group is titled “Technical Memorandum, Potential Transportation Benefits of Urban Development Areas.” 3 January 2012.

At lunch on 19 October 2011, Randall Arendt, an advocate of good development who’s work is explored in Section VIII and in APPENDIX C, called this lot size ‘sprawl.’ At SYNERGY it is termed ‘dysfunctionally scattered Urban land use.’

As an observer and participant in land use control processes in Fauquier County since 1976, the author can state without fear of contradiction that governance practitioners did as well as they could without a broad citizen understanding of the dynamics of human settlement patterns.

Land Use Controls are most effective when there is a monetary benefit to the land owner – a tax advantage, or the opportunity to sell development rights. Otherwise it depends on well intended citizens who must contend with misinformed amateur and professional land speculators and their agents. There has never been an informed market for these scattered Urban land uses and there will not be one until all the location-variable costs are fairly allocated.

Before leaving Land Use Controls it is useful to note the difference between Urban Growth Boundaries and The Clear Edge discussed in detail in Sections VIII and IX.

An Urban Growth Boundary (UGB) is a regulatory tool that has, for many reasons, found limited effective application. Even where it has been used it is subject to political pressures as demonstrated by application in the Portland New Urban Region .

The Clear Edge is an organic element of settlement pattern. It is not as easy to locate in the United States as it is in western Europe but the Logical Location of The Clear Edge can be determined by looking at contemporary air photos or digital maps with appropriate use of the graphic parameters. See maps created by SYNERGY that are used in *Blueprint for a Better Region*. See End Note Thirty Five

35. An easy way to acquire a quick overview of the SYNERGY perspective on Regional settlement patterns is the work that SYNERGY PLANNING, Inc did with Harry Dodson, Tony Hiss, Bob Yaro and others for the Piedmont Environmental Council (PEC), the Coalition for Smarter Growth (CSG) and the Surface Transportation Policy Project.

This work was done during the late 1990s when *THE SHAPE OF THE FUTURE* was being finalized. One of the primary products of the PEC / CSG project was “*Blueprint for a Better Region*.” *Blueprint* started as a drafty PowerPoint and was revised several times. SYNERGY provided images, analysis and strategies as a member of the design team.

An updated version (circa 2002) is available at www.betterregion.org On this home page one can view an updated version of the PowerPoint. By going to the ‘Download’ page on the site one can download a two part flash version with narration. There is also a shorter update from 2008 that lacks many of the graphics and Radial Analysis that give real punch to the concepts in the early versions. The use and value of understanding The Clear Edge is documented and illustrated in our PowerPoint “New Urban Region Conceptual Framework” on the *TRILO-G*, Beta 2 CD.

C. THE MARKET

The second most effective tool for shaping functional human settlement patterns is an INFORMED Market. The markets for land and buildings at and near The Clear Edge have NOT

been informed up to this point for reasons articulated in *THE SHAPE OF THE FUTURE*. The new market fundamentals are the focus of Section V.

D. EDUCATION

The third and most effective of the tools to achieve functional human settlement patterns is Education.

In a democracy education is:

- ◆ One, The ONLY way to get effective land use controls adopted,
- ◆ Two, The primary way to get Agency funds allocated for TDRs, TPRs, PDRs and other rational settlement pattern incentives, and
- ◆ Three – and most important – The basis for evolving a well informed market which serves citizens best interests

To date, NO ONE has been able to seriously attempt a comprehensive education program on settlement patterns because NO ONE has the necessary context – a well-informed citizen understanding of the forces impacting settlement patterns. See End Note Thirty Six

36. PROPERTY DYNAMICS – PART ELEVEN of *TRILO-G* is an education strategy based on a comprehensive understanding of the impact of alternative settlement patterns property values. The forces impacting property values are summarized in Section II and the focus of Section V.

There has been no general support for PROPERTY DYNAMICS or programs like it because too many cohorts directly benefit from Business-As-Usual even when it is clear that citizens INDIVIDUALLY and COLLECTIVELY suffer the consequences of dysfunctional human settlement patterns.

Those who have attempted education programs lack the needed tools. ‘Visualization’ exercises and ‘charrettes’ can help but without the right tools understanding is impossible.

What tools are required for effective education processes?

- ◆ FIRST, a Comprehensive Conceptual Framework – the New Urban Region Conceptual Framework or some other COMPREHENSIVE Framework.
- ◆ ALSO FIRST – because it is just as important – is a robust Vocabulary to articulate the comprehensive Conceptual Framework.

These two requirements are detailed in *THE SHAPE OF THE FUTURE* and spelled out in CITIZEN HANDBOOK – Three Step Process to Create Balanced Communities and Sustainable New Urban Regions – PART TWELVE of *TRILO-G*.

With these two basic tools in hand, other tools such as Radial Analysis, Net Present Land Value Analysis, Vacant and Underutilized Land Analysis, Holding Capacity Analysis, and others discussed in *THE SHAPE OF THE FUTURE* can play an important roll and support a rational set of physical / ecological suitability parameters – slopes, soils, wetlands, wildlife corridors, aquifer recharge, unique ecosystems, and others. See again reference to Radial Analysis in “*Blueprint for a Better Region*” cited in End Note Thirty Five

Radial Analysis is a very effective tool to demonstrate the power of $A = \pi R^2$. $A = \pi R^2$ is the first of The Five Natural Laws of Human Settlement Patterns. As suggested by the example below Radial Analysis is a very powerful tool. See JUST THE FACTS Current Perspective # 12 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com

Radial Analysis is widely used by Enterprises (aka, ‘the private sector’) to make spacial decisions (many of them contrary to the collective citizen interest of functional settlement patterns) but Radial Analysis is ignored by Agencies (aka, municipal, state and federal Agencies), Institutions and citizens.

Radial Analysis goes hand in hand with Holding Capacity, Vacant and Underutilized Land and Net Present Value Analyses to demonstrate the potential for functional settlement patterns WITHIN The Clear Edge and to document the vast oversupply of land that is already Urbanized.

In the early 1980s SYNERGY pointed out that if Fairfax County (about 244,000 acres) was ReDeveloped at the density of the Planned New Community of Reston (10 pn/ac) then over 2/3 of the county would be VACANT. (Greater Reston at Radius = 16 to 18 Miles from the Centroid was then, and still is, the Alpha (or Beta – depending on one’s perspective) Community with the highest per square foot values outside Radius = 10 Miles in the National Capital SubRegion. The original plans for Reston, VA, Columbia, MD, Peachtree City, GA, The Woodlands, TX and other Planned New Communities with an Alpha Community scale density of about 10 persons per acre. See End Note Thirty Seven

37. The message about application of Reston density was effective because everyone in Fairfax County could take a short drive and see it for themselves. Reston was and is widely admired and has the highest values for comparable development on a Cluster, Neighborhood and Village scale in the SubRegion. The reality of the Reston density analogy shaped the dialogue on patterns and densities of land use in Fairfax County. SYNERGY was involved, not just as a planner for a major developer, but the Principal was also active in the Chamber of Commerce, the League of Women Voters, The

Committee of 100, the Association of Civic Associations, the Audubon Society, the Sierra Club, the Urban Land Institute, etc. See CV / Bio page at www.emrisse.com

There is no telling how bad Fairfax County settlement patterns would have grown if the reality of Reston density was not lodged in the minds of conservation and good government advocates as well as the development community. This understanding made it possible to secure the replanning, rezoning and development of Fairfax Center and other projects and programs. Even in 2012 with over 1,000,000 citizens in the County the parameter of Reston density is still a powerful educational tool.

E. THE NEW SWEET SPOT

As noted in the prior subsection, the Sweet Spot on the Cost of Services Curve WAS 10 persons per acre (pn/ac). See End Note Thirty Eight

38. The Cost of Services Curve is the Second of the Five Natural Laws of Human Settlement patterns. The Cost of Services Curve is explained in detail in THE SHAPE OF THE FUTURE Chapter 24 Box 3 and the sources cited therein.

With the demise of the Large, Private Vehicle as the PRIMARY way for citizens to achieve Mobility and Access, the Sweet Spot has now shifted to about 30 persons per acre (pn/ac) for the Alpha Communities inside The Clear Edge. The Sweet Spot remains about 100 pn/ac in station areas of Regional Core-serving shared-vehicle systems.

The shift in the Sweet Spot for the MINIMUM density of Urban land uses at the Alpha Community scale FUNDAMENTALLY changes the parameters of functional settlement patterns dramatically. Here is an example:

The Logical Location of The Clear Edge between the Urbanside and the Countryside in the Virginia portion of the Nation Capital SubRegion varies from 22 to 28 miles from the Centroid with a bump-out to over 32 miles around Leesburg as shown in the maps presented in “The New Urban Region Conceptual Framework” PowerPoint. For simplicity sake, and to be conservative, the following calculations consider land within $R = 30$ being within The Clear Edge.

Within Virginia there are about 600,000 acres of land inside $R = 30$. If one applies the following parameters:

- ◆ HALF that area is allocated for Regional OpenSpace (NB: All component OpenSpace at Community-scale and below is included WITHIN the 30 persons per acre guideline)

- ◆ Large specialty uses (Dulles Airport is about 10,000 acres) are excluded
- ◆ 5000 acres is allocated for 50 shared-vehicle station areas at 100 persons per acre
- ◆ The remaining land evolves to at least the MINIMUM functional settlement patterns for the Urban area (30 persons per acre), then

The holding capacity of the Urban area is 8.3-million citizens. Yes, 8.3-million just in Virginia and just inside R = 30. This area is now home to less than 2 million citizens.

The large holding capacity is due to the fact that there are very significant areas of vacant and under utilized land within R = 30. There are aging and deteriorating Single Household Detached subdivisions with decreasing value and in need of recycling within R = 30.

There is a vast amount of land wasted to create ‘private space’ that would function better as SharedSpace and exists only because this spacial disaggregation is subsidized and the market does not function to put the land to the highest and best use.

The most significant waste of land is to create space for Large Private Vehicles as noted in THE PROBLEM WITH CARS – PART THREE of ***TRILO-G***. Interchanges that are designed to be ‘safe’ to navigate at 110 miles per hour take up thousands of acres in every New Urban Region. Wide lanes and wide rights-of-way take up thousands of acres between The Clear Edges around the Cores of New Urban Regions. These design features are obsolete remnants the time when traffic engineers envisioned their role was to provide space for ever more and ever faster Large, Private Vehicles.

While the holding capacity parameters applied in this exercise are LOWER than those recently zoned for Greater Tysons Corner OUTSIDE the METRO station areas. Now consider the profile of the market noted in Section V and one has a plausible future scenario. See End Note Thirty Nine

39. Discussing settlement patterns in terms of persons per acre is somewhat abstract. One of the activities on SYNERGY’s Future Work Program is to provide illustrations of the Sweet Spot densities.

In the meantime here are two examples from Loudoun County, VA of existing development that will be used as a basis for these illustrations:

Neighborhood Center within a 30 pn/ac Alpha Community: From Westbound VA Route 7, right on Belmont Ridge Road and take the next right into ‘Landsdowne Town Center’

Ignore the “town center” confusing terminology, and imagine that the vacant block in the middle is filled in with the planned buildings that have shops on the ground level and

offices and live / work units above. Now add a SMALL pre-k to grade 6 school with modest play fields and a Zip Car facility. You would have a place where someone at ANY stage of their life could find a home and not need to OWN a Large, Private Vehicle.

Village Center within a 30 pn/ac Alpha Community. From Westbound VA Route 7 exit at the River Creek Parkway / Crosstrail Blvd interchange and go left (South) on Crosstrail Blvd. Take the next right into the “town center.”

Again ignore the component misnaming. In the Village Center one finds a different mix of uses – the things a Household needs over a months time – clothes, furniture, etc. a bigger food store and specialty food and drink outlets. The center needs some other uses and much more housing to create a relative Balance J / H / S / R / A but the difference is clear and the message is clear: You would have a place where someone at ANY stage of their life could find a home and not need to OWN a Large, Private Vehicle.

Both the **Neighborhood** Center and the **Village** Center would be FAR more amenable with less space devoted to driving and parking Large, Private Vehicles. Both should have Shared Vehicle Systems (vehicles shared both contemporaneously and sequentially) but here are bricks and mortar approximation of where settlement patterns needs to go at 30 pn / ac.

Both the **Neighborhood** Center and the **Village** Center are starkly different from – and much more functional than – the typical Neighborhood Centers (7-11 / day care / k-6 school) and the typical Village Centers (super market, interfaith center, library, hardware store and shops) that were found in the early stages of Columbia at 10 pn / ac.

Columbia was disaggregated by the fact that Bob Gladstone convinced Jim Rouse that EVERYONE must have at least one car. As noted in *THE SHAPE OF THE FUTURE*, by the time the author moved To Columbia in 1972 almost every Household had two cars and the school board was ‘making the schools more ‘efficient’ by closing two out of three of the Neighborhood schools....

Both the **Neighborhood** Center and the **Village** Center are starkly different from anything in Reston. Reston, unlike Columbia, did not start with an overarching conceptual framework that identified Neighborhoods as an organic component. Reston did do a better job of identifying Clusters (but not Dooryards). Lake Anne is a hybrid Neighborhood / Village Center that lacks many of the elements of either scale.

Even if the SYNERGY estimate of the Sweet Spot on the Cost of Services Curve is high or low, the concept of Sweet Spot of settlement pattern components is a place to start visualizing the holding capacity inside The Clear Edge around the Core of large New Urban Regions.

When one adds an understanding of New Present Value calculations and the reality of the market for Single Household Detached dwellings, one has a place to start a comprehensive education process.

A different set of parameters will guide the evolution of settlement patterns at and near The Clear Edge and for the creation of Balanced But Disaggregated Alpha Communities in the Countryside. See End Note Forty

40. For example, Greater Warrenton-Fauquier (and western Loudoun County) falls primarily between Radius = 40 Miles and Radius = 50 Miles. There are about 2.6-million acres within R = 50 in the Virginia portion of the National Capital SubRegion.

When the ‘market fundamentals’ are clearly articulated as in Section V, the truth is a very powerful tool. With a sound education process in place, the market becomes well informed. Citizens can understand the actions needed to serve their own best interest in the marketplace and in the voting booth.

V. WHAT THE MARKET WILL DEMAND

Section V explores the future of the market for structures and infrastructure to support human settlement. This section documents why the underlying forces driving the market outlined in Section II will not revert to pre-2006 conditions.

A. THE ROLE OF THE SHELTER MARKET IN CONTEXT

Dysfunctional human settlement patterns are the alpha drivers of Mass OverConsumption. See Volume I of *THE SHAPE OF THE FUTURE*.

However, as documented in this section, dysfunctional human settlement patterns are NOT the result of informed market forces much less the result of the mythical ‘free’ market.

There are many favorite targets for citizens outraged by the cumulative impact of Mass OverConsumption and the Wealth and Citizen Well Being Gulf. The causes of outrage over the impact of Mass OverConsumption goes beyond the inequitable distribution of the benefits of the contemporary economic and governance systems.

However, ALL these other exponents of waste pale in comparison to the direct and indirect impact of dysfunctional human settlement patterns. See ENOUGH?, Current Perspective # 18 linked from the CURRENT PERSPECTIVES page at www.emrisse.com. Also see Appendix B of this Current Perspective and FizCon, Current Perspective # 25 (forthcoming)

Scattered Urban land uses (including the Wrong Size Houses in the Wrong Location) and complete dependence on the use of Larger, Private Vehicles – in addition to the infrastructure required to support Large, Private Vehicles to achieve Mobility and Access – are the most consumptive drivers of the waste of energy and resources. See End Note Forty One

41. If the energy-hog dwellings and vehicles are redesigned to ‘save energy’ but the settlement pattern is NOT changed, the cost of those ‘improvements’ will make the dwellings and the vehicles to access these dwellings so expensive that they will be unavailable to those who need Affordable and Accessible Housing RIGHT NOW and who cannot NOW afford the cost of Mobility and Access provided by Large, Private Vehicles. See Volume I of *TRILO-G*.

Much of the hype about energy saving and ‘sustainability’ is Greenwash (buying expensive goods and services in the name of ‘conservation’) or making goods and services that are beyond the reach of a growing percentage of citizens.

B. THE ANATOMY OF SUBSIDIES

An overarching reality is that dysfunctional human settlement patterns are subsidized by Agency, Enterprise and citizen actions. There are three categories or realms of dysfunctional settlement pattern subsidies.

First Order Subsidies: There are massive intentional subsidies that are provided to “expand the economy.” Examples include subsidies to sell more, bigger dwellings and more, more expensive Automobiles.

These subsidies include mortgage interest tax credits for large (and huge) dwellings and Agency spending for water, sewer and roadway infrastructure to support dysfunctional settlement patterns.

Construction of the Wrong Size House in the Wrong Location and the infrastructure to support these settlement patterns is mistakenly seen as an economic benefit because it ‘grows’ the GDP – just as Automobile accidents, mine rescues, flood recovery and wars ‘grow’ the GDP.

The sale of Large, Private Vehicles (cars and trucks) and of Mode-of-the-Market dwellings are given credit for pulling the economy (as measured by the Gross Domestic Product) out of every recession since WWII.

Second Order Subsidies: There are also massive unintentional subsidies due to the failure to allocate the true costs of alternative settlement patterns. See *THE SHAPE OF THE FUTURE* and ROOTS OF THE HELTER SKELTER CRISIS – PART ONE of *TRILO-G*.

The winners? Both intentional and unintentional subsidies favor owners of NonUrban land and those speculating on the value of NonUrban land, as well as financial Enterprises, building and development Enterprises and the individual end users. All of these beneficiaries fail to pay the true total cost of their actions.

The losers? Citizens collectively; society as a whole and the environment upon which human existence depends.

Both the First and Second Order subsidies and their impact are explored at length in *THE SHAPE OF THE FUTURE* and *TRILO-G*.

Third Order Subsidies: Citizen actions that lower the cost of doing business for Enterprises that benefit from economies of scale.

The Third Order Subsidies are less obvious. An example is citizens who spend time and resources to drive extra miles in the belief that they are ‘saving money’ to buy consumer goods.

The primary impact is to lower the cost of distribution and sales as well as increase the market place leverage of major ‘Big Box’ retailers such as Wal*Mart. Wal*Mart and other Big Box retailers ALSO benefit from First and Second Order Subsidies. See End Note Forty Two

42. See five books in Section III of ALPHA COMMUNITY READING LIST, Current Perspective # 12 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com

Subsidies and ill-advised policies, programs, regulations and educational process (including misinformation) distort the market and result in dysfunctional human settlement patterns.

These forces are NOT the result of an enlightened market – much less a ‘free’ market – as documented in Volume I of *THE SHAPE OF THE FUTURE*. Subsidies and other ill-advised Agency actions as well as the failure to fully allocate the cost of location-variable costs shaped Urban settlement patterns from 1870 to 1920 and especially from 1920 to 2000 when *THE SHAPE OF THE FUTURE* was published. These subsidies continued to 2012 but much stronger economic forces offset the subsidies and demonstrated the true power of the market after 2006.

Before examining the CURRENT market for components of the built environment, it is important to repeat a reality explored in *THE SHAPE OF THE FUTURE*:

There are NO villains in the generation of waste via dysfunctional human settlement patterns. These settlement pattern dysfunctions are the result of actions by billions of citizens and their Organizations doing what they BELIEVE to be in their best interests.

The drivers of dysfunctional settlement patterns reflect primitive genetic proclivities of uninformed buyers who have the resources to make decisions that are not in their or others best long term interest. These options have been available for the past 50 years only because of the ill-advised consumption of Natural Capital – primarily the consumption of stored petroleum energy.

C. THE NEW MARKET REALITIES

This subsection briefly reviews some of the key factors explored in Section II of this Current Perspective.

Since the outset of The Great Recession there have been fundamental changes in the market for Urban land uses – the structures and infrastructure to support Jobs / Housing / Services / Recreation / Amenity. These fundamental changes will determine FUTURE human settlement patterns.

Shelter – aka, housing – is the primary bellwether of settlement pattern dysfunction because residential land uses – plus the direct residential support (Service land uses) and Community-scale Recreation – make up from 65 to 85 percent of the Urban fabric when measured by acre (extensive Urban uses) or by square foot (intensive Urban uses).

Here are a few headlines concerning the current status of land and dwelling markets:

- ◆ **About 10 percent of the existing dwelling units are vacant. In some Communities the percentage of vacant and abandoned dwelling units exceeds 25 percent.**
- ◆ **About 25 percent of the occupied dwellings are under water nation-state wide.**
- ◆ **Outside The Clear Edge around the Core of large New Urban Regions the dwelling values have dropped by 30 to 50 percent and are not projected to recover in real terms, ever.**

Between the second quarter of 2009 and the second quarter of 2011 the number of underwater home mortgages in the US grew from 22.5 percent to 28.2 percent. See End Note Forty Three

43. At the end of the second quarter of 2011 the number of underwater home mortgages in Metropolitan Statistical Areas (MSAs) ranged from 15 to 55 percent depending on the Region in which they were located. A significant number of investor owned (rental) dwelling units were also yielding less revenue than the current mortgage.

Most Metropolitan Statistical Areas (MSAs) INCREASED the percentage of underwater home mortgages during the 2009 to 2011 time frame. It is estimated that the market is not yet half way through the EXISTING foreclosed dwelling backlog. If the economy does not miraculously ‘rebound’ more of the underwater units will fall into foreclosure.

Those MSAs with LOWER rates of underwater mortgages either had 1) depressed housing markets BEFORE 2006 or 2) are MSAs that are only PART of the relevant New Urban Region market area – the REAL economic, social and physical ‘Regional’ component that is masked by the political gerrymandering of the MSAs. See *THE SHAPE OF THE FUTURE*

In those cases where large MSAs ‘declined’ in the number and percentage of underwater mortgages they each have ‘adjacent Metropolitan Areas’ with very high percentages of underwater mortgages. For example the Los Angeles MSA and the adjacent Riverside MSA; the San Francisco MSA and the adjacent Sacramento / Modesto MSA. In cases such as the Washington DC -Baltimore CMSA data is distorted by the fact that some counties have been recently excluded from (or never included in) the CMSA but have

been in the Washington-Baltimore New Urban Region for decades. This failure to identify the REAL economic region distorts the data. See Graphic “More homes underwater” Page A8 *The Washington Post* 24 October 2011.

The National Capital SubRegion includes the Washington DC MSA plus adjacent jurisdictions that have been recently excluded (or had never been added). This SubRegion has been somewhat isolated from the housing market collapse experienced in other Regions to date but that may change with the expected reduction in federal contracting.

When the data is distorted by gerrymandering MSA and CMSA boundaries it also masks the impact of the value of housing in the Outer Radius Bands noted in Sections II and IV. This failure to base data on geographic / economic reality creates mass confusion at the Village, Community and SubRegional scales.

Data distortion is critically important. The emergence of a consensus on evolving functional human settlement patterns that is based on fact requires that citizens understand that the number of vacancies, the number of foreclosures, the percentage of property value loss and any sign of a recent ‘recovery’ of prior losses VARIES BY RADIUS BAND. Seen End Note Forty Four

44. The data is not yet conclusive and varies from Region to Region but the area outside Radius =30 Miles from the Centroid of major New Urban Regions the loss of value is minus 40% plus or minus depending on economic health of New Urban Region. See WAKE UP CALL summarized in the Spring 2011 *Piedmont Business Journal* Current Perspective #22 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com

It is very clear that the farther one goes from the Centroid, of the National Capital SubRegion – or any large New Urban Region – the worse things have become due to the cost of energy, the changing housing preferences noted below, the failure of Agencies to evolve a functional Mobility and Access system and the scatteration of Urban land uses.

D. THE FUTURE MARKET

An excellent summary of the future of the shelter market on the nation-state scale is provided by an [article](#) in the 28 April *New Urban News* Blog (now *Better! Cities and Towns*) titled “The Coming Housing Calamity.” See End Note Forty Five

45. The article is presented in two parts. The second is linked from the first. The text is supplemented with graphics that are useful to illustrate the points made concerning demographic trends, etc. The sources quoted in the story have subsequently noted that

due to current and projected demographic data there is an over-build of 25-million and 28-million large Single Household Detached dwellings nation-wide.

About the same time as the conference covered in the *New Urban News* article, the National Association of Realtors (NAR) published their every-five-years-or-so [study of potential buyer preferences](#). The NAR survey confirms the data from the above summary. The preference survey shows A DRAMATIC SEA CHANGE from the same responses in 2004 and 2005. These surveys by the NAR, and similar surveys by other Organizations, have been consistent over the prior 40 years.

Surveys of perspective buyers have been the basis for exaggerating the myth that “the American Dream” is dependent upon ownership of Large Detached Dwellings on Large Lots. One reason is that the surveys ask: “What would like?” Not “What you would like that is within your economic reach.” Subsidies – and recently blatant fraud – have in the past also made ‘larger’ and ‘more scattered’ dwellings appear more ‘affordable.’ See End Note Forty Six

46. This spin on “the American Dream” has been demonstrated to be a myth for decades. See *THE SHAPE OF THE FUTURE* and Ford, Michael (Center for the Study of the American Dream) “Five Myths about the American Dream” *The Washington Post* 8 January 2012.

In addition the 26 October 2011 [New Urban Network](#) newsletter notes the growing evidence supporting alternative settlement patterns supported by shared-vehicle systems. See End Note Forty Seven

47. “Market trends favor transit:, Eighty percent want to live green and the two biggest generational cohorts will demand better ‘transit’ service.” ‘SharedVehicle systems’ is a more comprehensive phrase to use in place of ‘transit’ or a specific form of ‘transit’ such as the use of ‘bus,’ ‘rail,’ ‘light rail,’ ‘high speed rail’ as a generic replacement for ‘transit.’ A SharedVehicle system may include vehicles owned and / or operated by Agencies, Enterprises or Institutions that provide Mobility and Access to the public.

A SharedVehicle system also includes vehicles that are used by individuals sequentially e.g. Zip Cars and by multiple occupants in jitneys, taxis and Uber cars as well as conventional rental cars and trucks. In addition SharedVehicle systems would include vehicles owned jointly by two or more individuals or cooperatives at the Dooryard, Cluster or Neighborhood scale to meet their common / collective vehicle needs.

It is important to note that Zip and Uber vehicle are NOT ‘solutions’ to the Mobility and Access Crisis or ‘living car free.’ That is because they provide an option but it is an option that only those higher on the Ziggurat can afford. Large Urban agglomerations require higher capacity, fixed guideway SharedVehicle systems and that means higher

settlement pattern densities at the Alpha Community scale. See discussion of Mobility and Access in Section III and of the new 30 pn/ac and existing 100 pn/ac Sweet Spots on the Cost of Services Curve in Section IV.

E. WHAT ABOUT THE ECONOMIC RECOVERY?

As noted in Section I of this Current Perspective – based on ENOUGH?, Current Perspective # 18 – there is little prospect that the developed nation-states will regain the rates of consumption or GDP growth anything like the pre-2006 level. Without regard to these probabilities, what are the potential scenarios with respect to housing?

- ◆ If there is NO economic recovery to something approaching pre-2006 levels of consumption, there will be no demand for Large, Scattered Dwellings– the Mode of The Market for dwellings before 2006

- ◆ If there IS an economic recovery to something approaching pre-2006 levels of consumption, what size and location of dwelling Units will be NEEDED to achieve Balance of Jobs / Housing / Services / Recreation / Amenity?

Those who hold jobs that place them in the bottom half of the economic Ziggurat WERE AND ARE the ones that need housing and they cannot afford the Mode-of-the-Market units that were built before 2006.

The nation-state strategy of ‘trickle down’ housing has tragically failed. It has failed those in the bottom half of the Ziggurat who need housing and it has failed society in general. Attempting to make trickle down work by direct and indirect fraud to make dwellings ‘more affordable’ was a major contributor to The Great Recession.

In more affluent municipalities (located in favored corridors in and near the Core’s of prosperous New Urban Regions) the housing for the well-to-do is almost the ONLY housing that has been constructed. See Section III on the Affordable and Accessible Housing Crisis and the sources cited there in.

Lack of Affordable and Accessible housing is in large part due to the cost of supplying residential services and the competition for tax base. This fact reflects the failure of the nation-state, state and municipal governance structure to evolve stable sources of revenue to support functional (Balanced and Resilient) settlement patterns. See End Note Forty Eight

48. See Zapana, Victor “Montgomery is confronting housing squeeze: Economic, demographic changes increase need for affordable units” *The Washington Post* 3 January 2012.

The pre-2006 Mode-of-the-Market dwellings (four bedroom, 2.5 bath, two car garage, Single Household Detached dwellings) have been constructed and sold in the Outer Radius Bands due to the subsidies noted in subsection B. above.

There is no current prospect of viable Agency action (municipal, state or nation-state) nor is there any viable Enterprise action that will create a market for more Mode-of-the-Market dwellings.

That will also be the case for ANY dwelling that does not support a Balance of Jobs / Housing / Services / Recreation / Amenity at the Cluster, Neighborhood, Village and Community Scales.

These parameters will apply to dwellings beyond the logical location of The Clear Edge around the Core of prosperous New Urban Regions. It also includes dwellings outside The Clear Edge around Urban enclaves in the Countryside. This reality should guide the construction of Large Dwellings INSIDE these Clear Edges UNLESS new residents will contribute to a Balance of Jobs / Housing / Services / Recreation / Amenity WITHIN the component.

Scattered Urban dwellings are not what potential buyers can afford to buy.

Scattered Urban dwellings are not what Agencies can afford to support / subsidize.

More important scattered Urban dwellings are not what the market will demand.

Large Single Household Detached Dwellings are NOT needed in any New Urban Region in the United States.

Trickle-down did not work, trickle-down does not work, and trickle-down will never work.

F. THE IMPACT OF MOBILITY AND ACCESS ON THE SHELTER MARKET

It is estimated by SYNERGY that fully half of the EMPLOYED workers in the United States cannot now afford to BUY and MAINTAIN a Large, Private Vehicle that is both fuel efficient and safe to drive on the Interstate Highway system. See THE PROBLEM WITH CARS – PART THREE of *TRILO-G* and WHAT FOLLOW THE CAR, Current Perspective xx (Forthcoming)

If the vehicle is not fuel efficient, the majority cannot now afford to drive long distances, and even fewer will be able to afford to drive long drives in the future.

If the vehicle is not safe for drivers of the Interstate, it would be foolhardy to live far from work, even if the roadways were improved.

It is not just the new car price that is important. The total maintenance cost is as critical as the initial cost. Off-lease and other used Large-Private Vehicles require regular, technology-dependent maintenance to keep the safety, pollution reduction and energy conservation features of the vehicles functional.

On a planet with finite resources, Large Private Vehicles and Large Private Spaces will be obtainable by a smaller and smaller percentage of the population.

Small vehicles / Shared Vehicles and Small Spaces / Shared Spaces will be the inevitable result of rising costs.

These economic and physical forces can be put off by increasing the subsidy for Large, Private Vehicle – for a while. This is what pandering politicians are counting on to win ‘the next election.’ Soon, however the finite limits and growing appetite for a fair share outlined in ENOUGH?, Current Perspective # 18 will make this impossible.

The only alternative is draconian enforcement of a VAST gulf between the rich and the poor. This vast gulf will approach the dimension of the Master / Slave gulf.

That gulf – The Citizen Wealth and Well Being Gulf – is NOT SUSTAINABLE on a planet where the majority of the citizens live in Urban Households with:

- ◆ wide-spread literacy,
- ◆ Global and instant communications / information dissemination, and
- ◆ Wide distribution of weapons of mass destruction / massive stockpiles of weapons of conventional destruction / ubiquitous access to weapons of inter-personal destruction:

See again Enough? Current Perspective # 18.

Citizens are already making – and will continue to make – intelligent trade-offs:

Less travel and less space in order to save time and resources for other activities and to lower the total cost of Mobility and Access.

G. THE REAL SHELTER MARKET

The sector of the market that NEEDS housing are the Households in the bottom half of the Ziggurat. They cannot afford Pre 2006 Mode-of-the-Market dwellings - Large Single Household Detached dwellings (SHDs). This is the case even with depressed prices in the Outer Radius Bands because they cannot afford the full cost of Mobility and Access that is dependent on Large, Private Vehicles.

There will be those who BELIEVE they ‘want’ Large SHD dwellings. However, very few developers and / or builders will be able to deliver LARGE SHD dwellings for the price owners of existing dwellings are (or will be) willing to sell for the reasons articulated by Chris Leinberger noted in Section II of this Perspective.

Even if some buyers do ‘want’ scattered SHD dwellings and can afford them, there will be many for sale due to the new demographic realities. If there is a demand, there are already many of these scattered Urban dwellings for sale as fire sale prices. The ads read: “Just bring your family, your dog and your horses.”

All citizens need houses close to Jobs and to Services.

Most citizens need smaller and less expensive dwellings with shared walls to cut cost and energy consumption. These patterns put origins and destinations of travel demand in closer proximity.

The needed Units also fit in the new settlement pattern densities that reflect the New Sweet Spot on the Cost of Services Curve – 30 pn/ac at the Alpha Community scale – explored in Sections II and IV of this Perspective.

Those who can afford the psychological ‘privacy’ that un-shared walls and un-shared (Large, Private) vehicles can provide may still choose those dwelling options that provide those Amenities but the density at the Neighborhood and especially at the Village and Community scale will be much higher (30 pn / ac vs 10 pn /ac at the Alpha Community scales) than those constructed over the past 50 years which depend exclusively on Automobiles for Mobility and Access.

H. A BASIC REALITY – THE FAIR AND EQUITABLE ALLOCATION OF TOTAL LOCATION-VARIABLE COSTS

Before leaving this section, it is important to understand that since WWII, IF the total location-variable costs were fairly allocated, almost none of the current glut of large Single Household Detached dwellings – including most of those in ‘conservation subdivisions’ and conventional orphan subdivisions – would have been built.

These dwellings were and are the Wrong Size House in the Wrong Location. In the future, with rising costs only a small minority will be able to afford these dwellings, even with only partial cost allocation.

The power of informed market forces will result in building and ReBuilding components of functional settlement patterns at 30 persons per acre at Alpha Community scale. That is the case for Balanced But Disaggregated Alpha Communities in the Countryside as well as for the Alpha Communities within a Clear Edge around the Core of New Urban Regions. See End Note Forty nine

49. See the PowerPoint “New Urban Region Conceptual Framework” on the *TRILO-G* Beta 2 CD and the Perspective COMMUNITY SCALE DENSITY AND RESTON, Current Perspective # 16 linked from the *CURRENT PERSPECTIVE* page at www.emrisse.com .

VI. OVERARCHING STRATEGIES

Section VI outlines strategies to achieve balanced (alpha) communities and sustainable new urban regions in three Realms of activity – in the Urbanside, in the Countryside and at and near The Clear Edge.

A. SETTLEMENT PATTERN CONSILIENCE – THREE DISTINCT REALMS OF ACTIVITY

There are three distinct spheres-of-activity for the strategies necessary to evolve functional human settlement patterns.

Realm One – The Urbanside – Inside The Clear Edges

The first sphere involves fundamentally restructuring settlement patterns WITHIN The Clear Edges. This Sphere includes areas within The Clear Edges around the Cores of New Urban Regions. It also includes areas within The Clear Edges around Urban enclaves that make up Balanced But Disaggregated Communities in the Countryside.

The goal of the strategies employed in Realm One is to evolve Balanced and Resilient Alpha Communities that are the building blocks of functional and sustainable New Urban Regions.

The process to evolve Alpha Communities in the Cores of New Urban Regions – where 75 percent of the current population of the United States now lives and works – starts with the identification of the Zentrum of Beta Communities within the Core of New Urban Regions. This process is spelled out in CITIZEN HANDBOOK – PART TWELVE of *TRILO-G*.

The process to evolve Balanced But Disaggregated Communities in the Countryside starts by identifying the scale and boundaries of Beta components inside The Clear Edges around the existing Urban enclaves and then following a process similar to the one spelled out in CITIZEN HANDBOOK – PART TWELVE of *TRILO-G*

Strategies applicable within Realm One focus on renewing and recycling (including Subdivision Recycling) to evolve Balance, Resilient and thus sustainable Alpha Communities and New Urban Regions. See End Note Fifty

50. See strategies spelled out in *THE SHAPE OF THE FUTURE*. For a profile of dysfunctions that have evolved in this Realm, see the work of William Lucy and David Philips profiled in Section II.

Realm Three – The Countryside – Outside The Clear Edges

The Third Sphere of activity is to evolve functional and sustainable NonUrban activities in the Countryside. (NB: Realm Three is addressed before Realm Two to make the context of Realm Two clear.)

In Sphere Two, the goal is to eliminate the scattered Urban land uses that make NonUrban uses in the Countryside dysfunctional and are ill suited for the current Urban functions due to cost – monetary and temporal.

As documented in STARK CONTRAST – TWO VIEWS OF THE ROAD AHEAD (2001) there is a vast area impacted by scattered Urban land uses. (STARK CONTRAST is reproduced in Chapter 49 of *TRILO-G*.) Strategies to manage the Countryside land resource are sketched out in *TRILO-G* – PART FOUR – THE USE AND MANAGEMENT OF LAND.

The strategies in USE AND MANAGEMENT OF LAND address the Urban land uses outside The Clear Edges around the Cores of New Urban Regions. Related strategies would also address scattered Urban land uses outside the Clear Edges around Urban enclaves of all scales in the Countryside. These enclaves are now deprived of the Balance and Critical Mass necessary for these components to evolve and become components of Balanced But Disaggregated Alpha Communities in the Countryside.

Realm Three strategies include Parcel Consolidation and others noted in *TRILO-G* – PART FOUR – THE USE AND MANAGEMENT OF LAND.

Realm Two – Land at and near The Clear Edges around the Core of New Urban Regions and around Urban enclaves in the Countryside.

The third and most important Realm of activity is focused on the land that WAS the bloated and dysfunctional cambium layer of Urban ‘growth’ before 2006.

The first step in Sphere Three is the absolute necessity to define ‘the Logical Location’ of The Clear Edge by processes outlined in Section IX based on the process contained in CITIZEN HANDBOOK – PART TWELVE of *TRILO-G*.

Of equal importance is to recognize the need for fundamentally new patterns and densities of land use at the and near The Clear Edge between the Urbanside and the Countryside.

The strategic and tactical tools to create functional new human settlement patterns in the Third Realm are explored in Section VIII and in Section IX.

B. THE SCOPE OF FUTURE CHANGE IN EACH OF THE THREE REALMS

The evolution of functional human settlement patterns will result from the following changes in the three Realms:

Realm One: Evolution of functional settlement patterns and support infrastructure through repair, rehabilitation, renewal and new construction focused on vacant and underutilized land to create viable components of Alpha Communities inside The Clear Edge.

Realm Two: Evolution of Clear Edges and preservation of property values through processes outlined in the remainder of this Section and in Section VII, VIII and IX.

Realm Three: Repair and conservation of the Countryside to support the production of food, fiber and natural systems.

C. THE GEOGRAPHIC SCOPE OF REALM TWO

The geography of Realm Two – the area negatively impacted by scattered Urban land uses around major New Urban Regions is much larger than most assume.

Around a free-standing major New Urban Region – Denver, Minneapolis- St. Paul or St. Louis New Urban Regions for example this is an area of about 19.3 million acres for EACH free standing New Urban Region. This is illustrated by application of the criteria used in the STARK CONTRAST covering the Mid-Atlantic portion of the East Coast MegaRegion Graphic. The area impacted stretches from Radius =20 Miles to Radius =100 Miles. See End Note Fifty One

51. This much land around all of the 70 largest New Urban Regions is not directly impacted because many of the New Urban Regions are coterminous. By definition, they are parts of MegaRegions. Coterminous New Urban Regions do not ENCOMPASS as much Countryside as do free standing New Urban Regions. The five largest New Urban Regions – New York, Los Angeles, Chicago, Washington-Baltimore and Philadelphia are all parts of MegaRegions. See graphics in “New Urban Region Conceptual Framework” in *TRILO-G*.

The primary area of concern within the defunct Cambium Layer for most New Urban Regions is found between Radius = 20 Miles and Radius = 50 Miles – an area of 4.2 million acres for a freestanding New Urban Region.

To get a handle on the holding capacity of this much area see data in the subsection on The New Sweet Spot for Alpha Communities (30 pn/ac) in Section IV.

Because of scale, the strategic evolution of the settlement pattern in the defunct Cambium Layer is critically important.

As noted in Section VII. with respect to food and fiber production, one of the basic factors that resulted in the original establishment of what later became a major Urban agglomeration – especially ones that evolved to become Industrial Centers and later became the Cores of New Urban Regions – is that often the Zentrum of the original settlement was surrounded by viable agricultural lands. In earlier times these lands supplied food and fiber for the Urban agglomeration. Later they were ‘suburbanized at densities that are no longer functional. Actually, they never were as documented by *THE SHAPE OF THE FUTURE*.

D. THE CONTEXT FOR INTELLIGENT PLANNING AND DESIGN STRATEGIES AT AND NEAR THE CLEAR EDGE

Before moving to Section VIII which provides a Conceptual Framework and Section IX which articulates specific strategies and tactical tools it is important to understand that the Third Realm – lands at and near The Clear Edge – cannot be planned, designed or developed in a vacuum. The future settlement patterns on lands must exist within a MegaRegion and Major River Basin framework such as the 1928 plan by Henry Wright for New York State which is still a viable MegaRegional armature for locating the Urbansides and the Countryside.

Within these overarching MegaRegional and SubContinental plans there must also be New Urban Region Plans that include capacity analysis for both the Urbanside and the Countryside. See End Note Fifty Two

52. The role of Urban Support Regions is explored in *THE SHAPE OF THE FUTURE*. Upon further review, it is clear that Urban Support Regions will evolve to become New Urban Regions or components of New Urban Regions. This perspective is articulated in *THE USE AND MANAGEMENT OF LAND: Happiness, Safety and Prosperity in the Countryside and in the Urbanside – Moving Beyond the Helter Skelter Crisis (PART FOUR of TRILO-G)*

In spite of this need for Continental, SubContinental, MegaRegional and New Urban Region Conceptual Frameworks, there are many significant and important actions that can be taken at the SubRegion and Community scales NOW.

One such action is to establish SubRegional Frameworks and holding capacity analysis. Another is to create comprehensive sketch plan ALTERNATIVES (PLURAL) for ALL the land that may be developed or redeveloped for Urban land uses.

In municipalities such as Fauquier County, Va that has identified ‘services districts’ that means a set of sketch plan alternatives for every service district. From these sketches, a holding capacity

analysis can be developed. In addition, tactics such as The Next Higher Component Tactic and The Cordon Line Tactic should be implemented immediately. Subdivision Recycling and other strategies outlined in *THE SHAPE OF THE FUTURE* and in *TRILO-G – PART FOUR – USE AND MANAGEMENT OF LAND* are also applicable. For a comprehensive set of strategies to guide municipal action see “Shaping A Functional and Sustainable Future,” Current Perspective # 05 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com

E. CITIZEN EDUCATION

In a democracy there is no alternative to education if citizens are to achieve the Fundamental Transformations necessary to evolve a sustainable trajectory for civilization.

It is well established that effective citizen education results in the progression:

Awareness > Interest > Understanding > Action

This sequence is necessary to secure well considered public judgements on strategies to create Fundamental Transformation to functional and sustainable human settlement patterns and the infrastructure to support these patterns as documented in *THE SHAPE OF THE FUTURE*. See End Note Fifty Three

53. See *PROPERTY DYNAMICS: Real Property Value, a Path to Understanding Human Settlement Patterns – PART ELEVEN* of *TRILO-G*, and *CITIZENS HANDBOOK: Three Step Process to Create Balanced Communities and Sustainable New Urban Regions – PART TWELVE* of *TRILO-G*.

In order to foster citizen education there is a desperate need for Citizen Media so that citizens have the information they need to make intelligent decisions in the marketplace and in the voting booth. See *CITIZEN MEDIA – THE NEXT STEP* Current Perspective # 09 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com

The alternative is conflict and chaos as exemplified by the turmoil profiled in *ENOUGH?*, Current Perspective # 18 linked from the *CURRENT PERSPECTIVES* page at www.emrisse.com

VII. FOUR STEPS IN THE THREE REALMS

Section VII articulates four steps on the path to functional settlement patterns in Realm One, Two and Three.

A. POPULATION REALITY

As of 31 October 2011, there are estimated to be 7 Billion humans on a finite planet. Advanced societies that make up about 20 percent of the total population have been prospering by consuming Natural Capital. NonRenewable Natural Capital has been consumed at an accelerating rate since about 1450, the dawn of the era of aggressive Colonial exploitation by Western European kingdoms and nation-states.

The population has been growing at an unsustainable rate since about the same time. Per capita consumption as well as the population has been accelerating at an increasing rate since 1800. See Volume I of *THE SHAPE OF THE FUTURE*.

Twenty percent of the humans are now using about 80 percent of the planet's Renewable AND NonRenewable resources. That rate of consumption is UNSUSTAINABLE – even if the other 80 percent of the planets population were satisfied with what they have been consuming up to this point. They are not.

As documented in ENOUGH?, Current Perspective # 18, over half the TOTAL population of the planet (China, India and Brazil) have made it clear that want to ALSO achieve the level of consumption of the top 20 percent.

Another one half-billion citizens in the northern part of Africa and in the Middle East have also forcefully expressed their view that they have NOT been getting their fair share. See ENOUGH?, Current Perspective # 18.

Half of the population of the planet is now Urban and the percentage is growing and projected to reach 75 percent by 2050. Humans occupying land devoted to Urban uses are the primary consumers of stored energy and the planet's resources.

At the same time, functional Urban settlement patterns are the most efficient way to provide humans with food, water, security and prosperity that will facilitate the vast majority to secure safety and happiness as sketched out in Section I.

However, Urban land uses are now dysfunctionally scattered, especially in the area at and near The Clear Edge leading to vast waste of energy and resources. See End Note Fifty Four

54. In spite of maddeningly confusing Vocabulary and lack of a Comprehensive Conceptual Framework to communicate the instability of this trajectory, most now agree that humans are headed lemming-like for the cliff.

Settlement pattern dysfunction results directly in The Helter Skelter Crisis – impacting food security, water supply and thus the health, safety and welfare of humans – as well as The Mobility and Access Crisis and the Affordable and Accessible Housing Crisis profiled in Section III.

This means that evolving functional human settlement patterns is the most important step to achieve a sustainable trajectory for Urban civilization.

At the present there is a vast OVER SUPPLY of land devoted to Urban uses. Even more land is owned by citizens and their Organizations with the intent / hope to convert that land to Urban use. This land is located at and near The Clear Edges – the now defunct Cambium Layer. A critical question is:

How can citizens eliminate the vast OVER SUPPLY of land now devoted to (and held for future Urban land) to achieve sustainable settlement patterns WITHOUT massive loss of value to citizens, Enterprises, Institutions and Agencies that own, occupy and govern these millions of acres of vacant, underutilized, misused and blighted, unproductive land?

B. STEP ONE

As noted in Section III. concerning the Mobility and Access Crisis, the FIRST STEP is for citizens to evolve consensus on the need to evolve functional and sustainable settlement patterns. Processes to achieve this goal are articulated in PARTS ELEVEN AND TWELVE of *TRILO-G*.

The market documents that those patterns and densities that evolved from 1870 to 1940 have the best value and functionality for citizens and their Organizations.

In fact the ONLY settlement patterns that have agglomerated since 1950 that are functional FOR THE MAJORITY of the citizens are ones that reflect the patterns of the 1870 to 1940 time period, PERIOD – say ‘hello’ to Planned New Communities and to New Urbanism. See End Note Fifty Five

55. When energy (especially gasoline) was cheap, Large, Private Vehicles could provide Mobility and Access for a majority of those who could afford to choose where they lived. The Planned New Communities designed and started between 1962 and 1982 had densities at the Alpha Community scale of about 10 pn/ac. That is true for those built in the United States, and in Western Europe, including Scandinavia.

C. STEP TWO

As advocated by most all who have seriously considered this question, Step Two is to save / renew / rebuild the most efficient existing human settlement patterns **WITHIN REALM ONE**.

The problem is that even existing functional components at the Dooryard, Cluster and Neighborhood scales are NOT arranged / configured in functional patterns at the Village, Community, SubRegional, New Urban Regional or MegaRegional scales. In many cases the infrastructure to support functional settlement patterns does not exist and that which has evolved to serve Large, Private Vehicles make it difficult to evolve new settlement patterns.

The evolution of functional Urban settlement patterns will require major reconfiguration of the existing patterns and densities to support an Urban population **WITHIN THE CLEAR EDGE** – that is within Realm One.

The question that SYNERGY continually raises is:

By the time citizens reach a consensus on the path forward, will there still be the resources left to achieve that goal?

D. STEP THREE

The third and most critical and uncharted step is to recapture the potential of the vast area of land that is at and near the Logical Location of The Clear Edge – Realm Two. Step Three is the subject of Section VIII.

E. STEP FOUR

Step Four is the evolution of functional and sustainable settlement patterns and natural areas in Realm Three. To place the observation of agricultural economist Professor Len Shabman in the current context: If Step Two and Step Three are carried out intelligently, the market will take care of Step Four. His words were (in the Vocabulary of SYNERGY) “Get Urban off the back of NonUrban and NonUrban can take care of itself.”) That may be a stretch but for now it is a good place to start. See **THE USE AND MANAGEMENT OF LAND – PART FOUR** of ***TRILO-G***.

F. FOOD SUPPLY, FOOD SECURITY AND FRESH WATER

In ‘developed’ MegaRegions and nation-states a very small percentage of the population are involved in NonUrban activities. In the US the number is about five percent of population.

Highly industrialized food production is responsible for a dramatic shift from Agrarian to Urban employment since 1870.

“Cheap” industrial food is killing us – economically and physically.

Humans can no longer afford cheap food because of the true, total cost of natural system destruction to increase industrial food production:

- ◆ The total real cost of pollution from industrial fertilizers and waste disposal processes,
- ◆ The loss of top soil,
- ◆ The contamination of water supplies,
- ◆ The cost of processing, packaging storage, sales and resource waste

Have all been well documented for decades.

In November of 2011, *Scientific American* addressed the question: “Can We Feed the World and Sustain the Planet?” The facts presented are compelling. The ideas for feeding the world in 2050 are all useful but they are NOT sufficient because the issue of settlement pattern is completely neglected.

Urban Agriculture (agricultural production WITHIN the existing Urban fabric – Realm One) is a viable option for SOME food but as noted in Section VIII it is not sufficient. That is why Realm Two and Realm Three as articulated in Section VI are so important.

Much of the land in Realm Two was converted FROM agricultural use to create space of scattered Urban activities. Far too much land was converted to dysfunctional Urban land uses and was economically sterilized by wild speculation. The Realm Two land is still close to Urban markets.

The oft see bumper sticker “Farm land lost is lost forever” is a nice slogan for a bumper sticker but it does not relate to the current need for evolving functional human settlement patterns.

In addition to the millions of acres of viable agricultural land in Realm Two that can be made available via the strategies outlined in Section VIII there is another untapped resource.

As noted in Section IX, perhaps 20 percent of the population would be better suited to NonUrban activities and that could guarantee the quality and security of the food supply.

At the present only about 5 percent of the population in developed nation-states receive their primary Household income from NonUrban activities. At the same time, many – perhaps 20 percent of the population – claim they are not comfortable with Urban, urbane, high speed lifestyles. They say they would be more comfortable at “a more traditional pace” in “a more traditional community.” Some claim that they want to be “closer to nature.”

Twenty percent of the population is a huge resource that can be devoted to Agrarian Urbanism discussed in Section VIII in Step Three and to the management of Open Land in Countryside as part of Step Four. Among the options are applications of CoHousing and Coop Housing in the Urban enclaves that are and integral part of Agrarian Urbanism. See End Note Fifty Six

56. See books listed in Section IV and Section V of THE ALPHA COMMUNITY READING LIST, Current Perspective # 12 linked from the CURRENT PERSPECTIVES page at www.emrisse.com . These books are listed in APPENDIX A – READING LIST – Resources for SETTLEMENT PATTERN CONSILIENCE.

VIII. FUNDAMENTAL SETTLEMENT PATTERN TRANSFORMATION AT AND NEAR THE CLEAR EDGE

Section VIII lays out the basic tenets underpinning the transformation of the human settlement patterns in Realm Two – at and near The Clear Edge. This is accomplished through the application of ‘Agrarian Urbanism.’ This section enumerates specific goals for Fundamentally Transforming human settlement patterns at and near The Clear Edge and explores the structure of an ‘Agrarian Urbanism’ Conceptual Framework. Section IX provides the strategies, processes and tactics for implementation of this Fundamental Transformation.

A. THE GOALS OF FUNDAMENTAL TRANSFORMATION OF HUMAN SETTLEMENT PATTERNS AT AND NEAR THE CLEAR EDGE

The goals of evolving functional human settlement patterns at and near The Clear Edge between the Urbanside and in the Countryside are:

- ◆ Reestablish agricultural and forest production near Urban agglomerations – the locus of human demand for food and fiber.
- ◆ Provide value and income for the current owners of millions of acres of land in Realm Two – at and near The Clear Edge – that are blighted by scattered Urban land uses.
- ◆ Provide a new frontier of opportunity for citizens to narrow the Wealth and Citizen Well Being Gulf.
- ◆ Free up resources to facilitate Fundamental Transformation of human settlement patterns in the Urbanside – Realm One.
- ◆ Remove pressure for more scattered Urban land uses in the Countryside – Realm Three.
- ◆ Achieve a sustainable trajectory for contemporary civilization.
- ◆ Other goals exist but are too numerous to catalogue in this Current Perspective.

B. AGRARIAN URBANISM – A CONCEPTUAL FRAMEWORK FOR TRANSFORMATION OF HUMAN SETTLEMENT PATTERNS AT AND NEAR THE CLEAR EDGE

The major component of the Conceptual Framework and strategies to evolve functional human settlement patterns at and near The Clean Edge is “Agrarian Urbanism”

What EXACTLY IS Agrarian Urbanism?

First, Agrarian Urbanism is NOT, yet another Conceptual Framework originated by SYNERGY. Unlike The New Urban Region Conceptual Framework, THE ESTATES MATRIX Conceptual Framework, THE USE AND MANAGEMENT OF LAND Conceptual Framework or Strategic tools such as Regional Metrics, the Agrarian Urbanism Conceptual Framework was NOT articulated by SYNERGY. See End Not Fifty Seven

57. The first notice of the term ‘Agrarian Urbanism’ came to SYNERGY from Philip Langdon in “Newest eco-development model: ‘Agricultural Urbanism’” in *New Urban News* Vol 13, Number 4 June 2008. This article profiled the planning process for land in the Vancouver, BC New Urban Region. Two and a half years later Andres Duany and DPZ published a book titled *The Theory and Practice of Agrarian Urbanism*. (2011). The book includes a collection of graphics based on land development projects in which Duany and the planning firm he co-founded (DPZ) has been involved including the one in the Vancouver NUR.

Second, many of the ideas that make up Agrarian Urbanism are NOT new. Some have been applied for centuries and are on display in the Countryside and in the Urbanside in many parts of Europe and in the traditional ‘farm country’ of the United States. They are, however, largely absent in the Cambium Layer of recent Urban growth profiled and quantified in Sections II and IV of this Current Perspective.

Finally, Duany and company are not the only ones who have given thought to these ideas. See End Note Fifty Eight

58. For example see “Rescuing the ‘Rural’ Edge: It Takes a Village: New planning initiatives protect agriculture and nature, while still accommodating growth. Lerner, Jonathan, *Miller-McCune* September / October 2011. Also see APPENDIX A – READING LIST – Resources for SETTLEMENT PATTERN CONSILIENCE

There are many sources for the concepts underlying Agrarian Urbanism. However, Duany and his cohorts are out in front in illustrating and articulating examples for a Conceptual Framework to guide settlement patterns at and near The Clear Edge.

The Duany, DPZ book *The Theory and Practice of Agrarian Urbanism* sets out four prototypical settlement patterns.

- ◆ Agricultural Retention
- ◆ Urban Agriculture
- ◆ Agricultural Urbanism
- ◆ Agrarian Urbanism

As noted below, two of the four are not prototypical settlement patterns but give existing practice and terminology confusing meanings for marketing and promotional purposes. Each of the four is reviewed below and the re-articulated terms are applied in this Section and in Section XI.

Agricultural Retention

‘Agricultural Retention’ is misused by Duany to indicate the continued existence of a free standing agricultural Enterprise in a ‘project’ that results in the Enterprise being surrounded by, or in part devoted to, Urban land uses.

This application use of the term ‘retention’ may be useful for selling a service or marketing a project but it is not an appropriate use of the word. As demonstrated over 40 years ago by Howard Conklin – an esteemed professor of agronomy at Cornell University – saving farming requires more than saving a farm. Conklin who did extensive research in New York State documented that to ‘retain’ viable agricultural Enterprises that are NOT an integral part of an Urban agglomeration there must be a Critical Mass of agricultural activity. In Conklin’s terms one must ‘retain’ the agricultural community (small ‘c’) not just ‘the farm.’

Retention of an agricultural community is a complex process. The ‘business’ of the community must be agriculture. To use Conklin’s examples: “The community bank must do MOST of its lending to farmers and the most popular high school event will be the FFA crowning of the Dairy Queen.” (The Apple Queen or the Rutabaga Queen will also suffice.)

Agricultural communities can be found in places like Iowa and Nebraska but once lost they are very hard to regenerate. This is especially true in the locations within the decaying Cambium Layer. See Risse, E M, *Planning and Zoning Problems in Areas of Transition—The Physical Impact of Urbanization of New York State*, 272 pages, New York State Office of Planning Coordination, March 1969.

The term ‘Agricultural Retention’ should be reserved for the preservation of extensive agricultural Enterprises in Realm Two, ‘retention’ is only possible WITHIN communities with a Critical Mass of similar and supporting agricultural activities. They cannot be remnants

surrounded by Urban activities. The ‘remnants’ CAN prosper in Agricultural Urbanism or Agrarian Urbanism as noted below.

Urban Agriculture

Urban Agriculture is an important part of the Urban fabric in the Core of many New Urban Regions across the globe. Urban Agriculture is the production of food and fiber WITHIN the existing Urban Fabric – in Realm One. This is NOT a new conception of Urban Fabric. There are many examples of Agricultural activity at the Unit, Dooryard and Cluster scales WITHIN existing Urban enclaves across the planet.

Urban Agriculture ranges from the use of vacant and underutilized plots of land, and roof tops to the creation of a vertical hydroponic farms in former office buildings such as those often illustrated by EcoCities Builders.

‘Urban Agriculture’ is narrowly conceived by Duany in a way that excludes many forms of Urban Agriculture, especially the retrofitting of Urban buildings for agricultural activity. This may be due to the types of projects that Duany’s firm has been retained to design.

Urban Agriculture tactics can be applied in the context of Agricultural Urbanism and Agrarian Urbanism. However, Urban Agriculture is NOT a free standing form of agricultural activity. See End Note Fifty Nine

59. There are many useful resources related to Urban Agriculture. An example of pioneering work and a comprehensive summary of the then current state of the art is: Smit, Jac, et al. *Urban Agriculture: Food, Jobs and Sustainable Cities*. New York: United Nations Development Programme, 1996.

Agricultural Urbanism

The first ‘new’ settlement pattern articulated by Duany is ‘Agricultural Urbanism.’ Agricultural Urbanism and the fourth form listed by Duany – Agrarian Urbanism – are very similar. In fact are nearly interchangeable. (Duany calls combinations of the two forms ‘hybrid applications.’) The difference is that in Agricultural Urbanism there are one or more FREE STANDING agricultural Enterprises that are contained in a larger ‘project’ that includes Agrarian Urbanism activities. One needs to carefully review the graphics in Duany’s book to grasp the differences.

Agrarian Urbanism

Duany’s ‘definition’ of Agrarian Urbanism is confusing for several reasons. First, as noted above, Agrarian Urbanism is very similar to Agricultural Urbanism except for the free-standing agricultural Enterprise. In an Agrarian Urbanism project, all the agricultural activities are an

integral and cooperative components of the ‘community’ and are not FREE STANDING economic Enterprises. Again the graphics provide useful insight into the differences.

The second major cause of confusion is that Agrarian Urbanism is used by Duany /DPZ as an umbrella term for all four prototypical settlement patterns. This is demonstrated by the title – now subtitle – of the book *The Theory and Practice of Agrarian Urbanism*.

The Market Square

One specific Cluster-scale or Neighborhood-scale activity that can fit in any of the four Duany prototypes is “The Market Square.” The Market Square is a combination warehouse / storage and processing facility and a farmers market with live / work dwellings and residential Services uses (e.g. bakery, restaurant and other facilities found a Cluster or Neighborhood of a larger settlement pattern component.

A building complex with these functions is repeatedly illustrated in the book. In fact a combination of several of these uses already exist in some locations due to natural attraction of mutual interests (aka, synergy).

The Bottom Line

There are many attractive aspects of the Duany / DPZ book. But it is not ‘perfect.’ The lack of an articulate Vocabulary is a clear place to start. It is confusing and inappropriate to misuse the terms “Agricultural Retention” and “Urban Agriculture” as noted above. Further, there is no discussion of forestry / fiber production or of bio fuels, etc. – perhaps this is because these uses lack the characteristics necessary to be compatible neighbors to the Urban uses which Duany’s clients want to attract and accommodate.

There are also patterns of Agrarian Urbanism that are not mentioned. There is no reference to farmers who “commute by tractor” from Cluster and Neighborhood scale Urban agglomerations to field. There is no mention of parcel configurations that accommodate dwelling units in close proximity and agrarian / forest uses “in the back 40”. Both are found throughout Western Europe.

Agricultural parcel configurations that front on waterways or roadways provide for access but fan out to accommodate extensive (NonUrban) land uses. This flexibility was precluded by the ‘square’ orientation dictated by The Northwest Ordinance (1785 and 1787). Even on the flat

territory in the ‘Old Northwest’ where the Ordinance was first intended to be applied, it thwarted more environmentally sensitive ‘organic’ land subdivision.

There is also inappropriate use of Core Confusing Words. See APPENDIX TWO of *THE SHAPE OF THE FUTURE*. Proponents of New Urbanism use ‘neighborhood’ and ‘village’

interchangeably as a generic, catch-all term to describe warm and fuzzy places. At some point citizens and professionals have to fit the pieces into a coherent and function framework. That requires a comprehensive Conceptual Framework and a robust, comprehensive Vocabulary to articulate that Conceptual Framework – more on this topic below.

With all these new terms and the confusing mix of age old traditions and New Urbanist ideas, it might seem that Duany's book is not the best source for the building blocks of a comprehensive Conceptual Framework to guide the evolution of functional settlement patterns for the now defunct Cambium Layer – at and near The Clear Edge.

On the other hand it is better than anything else on the table. Like New Urbanism, Agrarian Urbanism is a place to start and can be easily accommodated in The New Urban Region Conceptual Framework. See End Note Sixty

60. See Chapter 18 of *THE SHAPE OF THE FUTURE* for a survey of the pluses and minuses of New Urbanism. Here is the link to a favorable review in the *New Urban News* that discusses the four alternative configurations of agricultural 'development' as they are articulated under Duany's Agrarian Urbanism umbrella.
<http://newurbannetwork.com/article/how-grow-garden-city-15043>

It is clear that what is needed is a combination of UnDevelopment AND ReDevelopment of the Cambium Layer to create functional and sustainable settlement patterns.

The most serious shortcoming of Duany's rendition of Agrarian Urbanism is that Duany's work focuses on specific parcels of NonUrban land that a client brings to DPZ with the intent of converting some or all of the land to Urban uses. Duany sees Agricultural Urbanism as a 'development' process, NOT as a REDEVELOPMENT process.

C. TWO PATHS DIVERGE AT THE CLEAR EDGE

The Cambium Layer was speculatively expanded to include an unsustainable expanse of territory and is now afflicted by the cancerous scatteration of Urban land uses resulting in profound dysfunction.

Sections II and IV of this Perspective articulates the concept of the Cambium Layer and provided a summary quantification of the vast area contained in this immature and now decaying settlement pattern.

The growth of dysfunctional human settlement patterns has left millions of acres of partially Urbanized land (this land is 'sub' Urban in the true sense of the phrase) See End note Sixty One

61. The reality of this dysfunctional process on the Core of the National Capital SubRegion is captured by a column by Steven Pearlstein “Road to Growth in Washington [aka, National Capital Subregion of the Washington-Baltimore New Urban Region] is out of the exurbs,” *The Washington Post* 15 January 2012.

In many New Urban Regions (NOT Phoenix or Las Vegas, but many others) the Cambium Layer WAS agricultural and forest land or Open Land serving ‘environmental services’ air filtration, aquifer recharge, flood control, etc. See Troy, Austin, *The Very Hungry ‘City’* [Region]: *Urban Energy Efficiency and the Economic Fate of ‘Cities’* [Regions] (2012).

One very effective way to understand the past and future of the Cambium Layers and to sort out the forces at play is to consider two books that purport to provide guidance at and near The Clear Edge.

One is *Envisioning Better Communities: Seeing More Options, Making Wiser Choices* (2010) by Randall Arendt and the other is Duany / DPZ’s book *The Theory and Practice of Agrarian Urbanism* (2011) introduced in the last section.

The two books provide a dramatic contrast between:

Trying to put the best – the least intrusive – face on the Business-As-Usual practice of scattered Urban land uses on the one hand (Arendt), and

Advocating a fundamentally different approach using new building blocks to create a new Conceptual Framework for understanding and evolving functional settlement patterns at and near The Clear Edge (Duany).

There is not a paragraph in the first three parts of the Arendt book that does not present a good idea about how to better locate scattered Single Household Detached dwellings on green field sites. There are also many good ideas about how to minimize the ecological impact of Detached Urban dwellings at the Dooryard and Cluster scales.

However, as noted in Appendix C., no matter how well designed, those Dooryards and Clusters are, THEY ARE STILL SCATTERED URBAN LAND USES. The CUMULATIVE impact of these uses is unsustainable. The primary driver of dysfunction is the Large, Private vehicles which are the ONLY option for providing Access and Mobility for the Urban residents. See APPENDIX C – Understanding the Arendt Perspective.

The better idea can be gleaned from Andres Duany / DPZ’s *The Theory and Practice of Agrarian Urbanism* (2011) As noted above, the Duany book is not ‘perfect’ but is a better place to start to build a new Conceptual Framework than any other source on the table. See End Note Sixty Two

62. In addition to the Vocabulary issues noted above, there are rough spots in both text and the graphics. There is also abundant, shameless self-praise. This self-aggrandizement is understood by professionals concerned with the evolution of functional human settlement patterns – including many in the Smart Growth industry – as ‘standard Duany.’ In spite of the heavy coat of self-promotion, the book contains elements of an elegant new Conceptual Framework, a tool for understanding and evolving functional settlement patterns at and near The Clear Edge.

To confuse things the book was re-titled in August 2011. The second printing is titled ***Garden Cities: The Theory and Practice of Agrarian Urbanism***. WHY drag Ebenezer Howard’s “Garden Cities” into this discussion? The well documented and historically relevant ‘Garden Cities’ movement is something entirely different than Agricultural Urbanism on a Regional Scale. The reference to “Garden City is totally irrelevant on a number of levels. “City” used in this way is a classic example of introducing a Core Confusing Word. See CORE CONFUSING WORDS, APPENDIX TWO of ***THE SHAPE OF THE FUTURE***.

The title change may have something to do with the fact that The Prince’s Foundation based in the UK is the publisher of the book and there is controversy in Great Britain about a call for more ‘Garden Cities’ by Richard Rogers and other avant guard architects.

There are many planning strategies for converting NonUrban land to Urban uses and for selecting which land might best be Urbanized starting with the work of Ian McHarg, Phil Lewis and Chris Alexander. See APPENDIX A – READING LIST – Resources for SETTLEMENT PATTERN CONSILIENCE.

The core reality is that UnUrbanizing land AND ReUrbanizing land to create new, functional settlement patterns can result in more efficient food production and distribution and new lifestyle options for citizens. It can also shore up the values of Urban structures and land held for Urban land uses that are now sinking and will continue to deteriorate for reasons spelled out in Section V.

The ideas in Agrarian Urbanism are relevant to shaping the future of any land at and near The Clear Edge around the Core of any large New Urban Region (NUR). Urban Agrarianism is especially important when the NUR:

- ◆ Is located in an attractive physical setting that has been a magnet for scattered Urban land uses AND
- ◆ The land is suitable for agriculture.

As noted above, most major Urban agglomerations have historically been located where adjacent agricultural land could supply the agglomeration with food and fiber when it was established.

The bottom line is that intelligently deciding what land to develop is NOT the crisis facing citizens and their Organizations at and near The Clear Edge. One would not know this from the Arendt book or from other recent publications. See End Note Sixty Three

63. For example the Lincoln Land Institute devoted time and effort to a ‘research project’ to determine how to EXPAND the Urban area of the Phoenix New Urban Region, one of the most dysfunctionally LOW density New Urban Region Cores in the United States. See “Scenario Planning Tools for Sustainable Communities,” Jim Holway, *Land Lines* October 2011. Due to climate and water supply this is one of the LAST places in the United States that need expanded area for Urban land uses. In addition, by intelligently ReDeveloping the Urban fabric of the existing Core, the population could triple and the water use could be reduced by a similar factor with intelligent reconfiguration.

The good news here is that the bottom has dropped out of the development market in Phoenix and other similarly cited New Urban Regions. See Thompson, Jonathan, “Demise of the housing growth machine” *High Country News* 11 October 2011 and Davis, Tony, “Downturn May Slow Predicted Boom in Prescott/Phoenix/ Tucson Corridor” *The Arizona Daily Star*, 10 October 2011. Now comes word in *Sunburnt Cities* by Justin Hollander that one third of the zip codes in the “major Sun Belt cities” are losing population. Jim Holway, the author of the Lincoln Land Institute story is quoted as being sure the market will return but ‘smart decline’ appears to be a good option for not just Detroit and Cleveland but Phoenix as well. “‘Smart Decline’: A Lifeline For Zombie Subdivisions?” O’Dowd, Peter *NPR* 28 December 2011.

Has no one EVER run the numbers on real demand at functional densities? Austin Troy in *The Very Hungry City: Urban Energy Efficiency and the Economic Fate of Cities* (2012) lays the groundwork but does not address pattern and density of land use as a significant factor, although the results of alternative settlement patterns – e.g. shorter commuting distances – are parameters considered. The use of the Core Confusing Word ‘city’ twice in the title and innumerable times in the text – often as an alternative to ‘region’ – muddies Troy’s message.

D. IF IT IS SO OBVIOUS THAT AGRARIAN URBANISM IS THE PATH TO FUNCTIONAL AND SUSTAINABLE SETTLEMENT PATTERNS AT AND NEAR THE CLEAR EDGE, WHY IS ‘EVERYONE’ NOT ALREADY ON BOARD?

Those familiar with the work of SYNERGY know the answer to this question:

To date there is no widespread understanding of:

- 1) The overarching importance of, much less agreement on, a comprehensive Conceptual Framework for human settlement patterns, and**
- 2) The absolute need for a robust Vocabulary with which to articulate that Conceptual Framework. See *THE SHAPE OF THE FUTURE*.**

Both Duany and Arendt exhibit two typical blind spots that help perpetuate this obliviousness.

Lost at the fringe – no understand of the importance and function of The Clear Edge.

There is no indication that either Arendt or Duany yet understand the importance of The Clear Edge.

Arendt knows better, he saw better when he toured Europe early in his career. Arendt remarks in *Envisioning Better Communities* seeing Clear Edges between Urbanside and Countryside “on the continent.” See APPENDIX C – Understanding the Arendt Perspective.

Duany should know better too but his focus is primarily on the projects that potential clients have brought to his firm.

What every Beta Community at or near the Clear Edge is facing is the need for functional and sustainable INFILL inside the Clear Edge and in ‘service districts’ around Urban Agglomerations in the Countryside OUTSIDE The Clear Edge.

These INFILL projects of Cluster, Neighborhood or Village scale are needed to achieve a Critical Mass and Balance of J / H / S / R / A. See End Note Sixty Four

64. See PowerPoint “The New Urban Region Conceptual Framework” for graphics to illustrate the location of The Logical Location of The Clear Edge. See GLOSSARY linked from the *RESOURCES* page at www.emrisse.com for a definition of The Clear Edge. What is ‘near’ The Clear Edge is a function of the scale of the Urban agglomeration inside The Clear Edge as noted in Section IX.

Lost in the transect.

A related shortcoming is over-reliance on the simplistic New Urbanist’s ‘Transect.’ There is no existing Urban agglomeration that exhibits a smooth continuum from Centroid / Zentrum to Wilderness depicted in the six prototypical settlement patterns of The Transect. Use of the wildcard ‘District’ nomenclature as well as the confusing and interchangeable use of ‘neighborhood,’ ‘village’ and ‘community’ makes matters worse. For some the ‘village’ is

smaller than a 'neighborhood' for others it is larger and the community is whatever the speaker wants it to be in true Humpty Dumpty fashion.

At best The Transect is a primitive conceptual framework of 'prototypical' patterns and densities. Arendt approvingly cites The Transect in *Envisioning Better Communities*. To his credit, in a yet to be published book, Arendt outlines concerns about the Transect as a reflection of actual settlement patterns.

The Transect is oblivious to the organic component structure of human settlement patterns. In reality, each component (Dooryard, Cluster, Neighborhood, Village, Community, New Urban Region, MegaRegion) is made up of various amounts and configurations of some or all of the Transect prototypical typologies.

IX. IMPLEMENTATION

Section IX provides the strategies, processes and tactics for implementation of this Fundamental Transformation.

Once a Critical Mass of citizens understand Sections I through VIII, implementation of processes to plan, design and implement Agrarian Urbanism at and near the Clear Edge will not be complex.

What will be VERY HARD is helping citizens understand the causes and cures for dysfunction in the defunct Cambium Layer at and near The Clear Edge of New Urban Regions.

A. CONTEXT OF IMPLEMENTATION

Fundamental Transformation of human settlement patterns triggered by productive use of the underutilized and mis-used land in the Cambium Layer at and near The Clear Edge will be an antidote for:

- ◆ The gloom and doom of those who see the current economic, social and physical trajectory as a sure sign of ‘America’s decline’ and an excuse to continue to subsidize mistakes of the past, OR
- ◆ An excuse to promote the baseless excesses of “American Exceptionalism” and impose authoritarian controls to reestablish ‘traditional values’ and maintain corporate socialism.

The Transformation of human settlement patterns can be the foundation for happiness, safety and prosperity based on conservative actions and not on consumption. The Transformation will contribute far more to humans obtaining a sustainable trajectory for their civilization than going back to the Moon, much less trying to get to Mars.

An economy based on Mass OverConsumption, and subsidies for traditional GDP ‘growth’ is the life blood of Vulture Capitalism, Crony Capitalism, Corporate Welfare and Corporate Socialism profiled in MANAGING CIVILIZATION – AN OVERVIEW, Current Perspective # 23. Mass OverConsumption and traditional GDP growth is UNSUSTAINABLE.

B. APPLICATION OF PROTOTYPE AGRARIAN URBANISM SETTLEMENT PATTERNS

The Duany's concept of Agrarian Urbanism – as clarified in Section VII – can evolve in Realm One – INSIDE The Clear Edge, in Realm Three – OUTSIDE The Clear Edge, and most importantly in Realm Two – at and near The Clear Edge.

In Realm One, inside The Clear Edge INFILL development on Vacant and Underutilized would include:

- ◆ Urban development that contributes to the evolution of Balanced Alpha Communities within The Clear Edge.
- ◆ Community and SubRegional serving OpenSpace.
- ◆ The following Agrarian Prototypes at Unit, Dooryard, Cluster, Neighborhood and Village scales:
 - 1) Urban Agriculture – as articulated in Section VIII – through out the Urban fabric.
 - 2) Agricultural Urbanism and / or Agrarian Urbanism at and near The Clear Edge.

Appropriate Urban land uses INSIDE The Clear Edge would be in harmony with these development prototypes on the way to evolving components of Balanced (Alpha) communities.

In Realm Two, at and near The Clear Edge land uses would be:

- ◆ Development at the Dooryard, Cluster, Neighborhood, Village or Community scales that meet the Agricultural Urbanism and / or Agrarian Urbanism prototype criteria.
- ◆ Urban development that contributes to the evolution of Balanced Alpha Communities.
- ◆ Community and SubRegional serving OpenSpace.

Existing Urban land uses at and near The Clear Edge would be compatible with and could be integrated with these development prototypes to create components of Balanced But Disaggregated Communities and the definition of The Clear Edge.

The Logical Location of The Clear Edge would evolve to become a Clear Edge between the Urbanside and the Countryside.

In Realm Three, outside The Clear Edge land uses would be:

- ◆ OpenLand including Agricultural Retention – as articulated in Section VIII – throughout the Countryside where topography, soil and water make agricultural uses viable.
- ◆ Development at the Dooryard and Cluster scales that meet the Agricultural Urbanism and / or Agrarian Urbanism prototype criteria. Application of Agrarian Urbanism of Neighborhood, Village or Community scales would evolve a Clear Edge to define the border between Urban and NonUrban activities.

Existing Urban land uses OUTSIDE The Clear Edge would be compatible with and could be integrated with these development prototypes to create components of Balanced But Disaggregated Communities.

C. A PRIMER ON BASIC SETTLEMENT PATTERN NOMENCLATURE

Urbanside. Urbansides must evolve efficient and effective settlement patterns to support the population – the citizens and Households – that rely on Urban activities for their prosperity, health, safety and welfare. These citizens and Households will be most efficiently accommodated by sustainable New Urban Regions comprised on Alpha Communities with a Balance of Jobs / Housing / Services / Recreation / Amenity – J / H / S / R / A.

As documented in Sections II, IV and V the MINIMUM Sweet Spot for density on The Cost of Services Curve at the Alpha Community scale (Communities with a Balance of J / H / S / R / A) has moved from 10 pn/ac before 2000 (before peak petroleum) to 30 pn/ac since 2006. See ***THE SHAPE OF THE FUTURE***, Chapter 23, Box 3. Also see **The FREEDOM of Location Parameter** below.

As noted in this Perspective, Urbansides can and should accommodate Urban Agriculture – agrarian activities that produce, process and distribute food and fiber. Urbansides must also be configured to minimize consumption of non-renewable resources and to enhance the natural systems upon which human existence depends. See Troy, Austin, ***The Very Hungry ‘City’ [Region]: Urban Energy Efficiency and the Economic Fate of ‘Cities’ [Regions]*** (2012).

Countrysides. Countrysides must have efficient and effective settlement patterns to support the citizens and Households that rely on NonUrban activities for their prosperity, health, safety and welfare.

The Countryside must support the natural systems upon which all human existence depends.

The Countryside must ALSO provide the majority of the food and fiber for the population that live, work and seek most Services in the Urbanside. This number is now 95 percent but may evolve downward due to the activities and lifestyles accommodated in Realm Two and Realm Three. See **The FREEDOM of Location Parameter** below.

The closer the production and processing of food and fiber is to the demand, the better from a resource consumption perspective. That is why Agrarian Urbanism activities are so important in Realm Two – at and near The Clear Edge.

The Clear Edge. The demarcation between the Urbanside and the Countryside is The Clear Edge. The Clear Edge is defined in GLOSSARY linked from the RESOURCE page at www.emrisse.com and The Logical Location of the Clear Edge is illustrated in the PowerPoint “The New Urban Region Conceptual Framework” on the *TRILO-G* Beta 2 CD.

Land At and Near The Clear Edge. The location and quantification of land at and near The Clear Edge is articulated in subsection D below.

The Confounding and Counterintuitive Reality of Land Use Demand for Urban and Countryside Land Uses. The most confusing factor in this set of interrelationships is that even with 7 billion inhabitants, at functional and sustainable patterns and densities of land use in the Urbansides the 95 percent of the population that is now Urban can efficiently and sustainably use ONLY about 5 percent of the land FOR THEIR DAILY URBAN ACTIVITIES.

NB: This 5 percent is NOT the ecological footprint of Urban humans. The 5 percent of land is what is needed to efficiently support Urban citizens DAILY ACTIVITIES.

The FREEDOM of Location Parameter. The allocation of 95 percent of the existing population to the Urbanside and 5 percent of the existing population to the Countryside is based on the existing activities of citizens in large nation-states with advanced, technology driven societies to which most humans aspire. But let us be very clear:

Citizen and their Organizations can and should live and work – as well as seek Services, Recreation and Amenity – WHEREVER they choose so long as:

- ◆ **They pay the full cost of their location decisions, which includes NOT relying on unintentional or hidden subsidies, AND**
- ◆ **The collective impact of their location decisions does not prevent others from achieving their own prosperity, health, safety and welfare.**

About 15 percent of the Urban population now exists in scattered Urban dwellings outside The Logical Location of The Clear Edges. Most of these citizens would not have chosen these dwelling locations if they were required to meet the two equitable location conditions noted above.

On the other hand the activities of Agrarian Urbanism would be attractive to some now living outside the Logical Location of The Clear Edge. It would also be attractive to those who are now ‘trapped’ in Urban contexts that are not to their liking.

It is suggested in this Perspective, but not fully explored at this point, that more than five percent of the population would be attracted to the life based on the activities associated with Agrarian Urbanism. The working assumption is that the NonUrban population will grow to something on the order of twenty percent of the total in many New Urban Regions.

Democratic processes within Fundamentally Transformed governance structure outlined in ***THE SHAPE OF THE FUTURE***, ***TRILO-G*** and MANAGING CIVILIZATION – AN OVERVIEW, Current Trajectory #23 will accommodate and support migration and resettlement.

D. A SKETCH OF THE PROCESS TO IMPLEMENT AGRARIAN URBANISM

Future versions of Section IX will include graphics illustrating the sequential steps to achieve functional and sustainable settlement patterns to supplement the descriptions in this Section.

These illustrations will include steps to locate the Logical Location of The Clear Edge and defining what is “at and near” The Clear Edge in New Urban Regions of a range of scales. A review of the graphics in CITIZEN HANDBOOK – PART TWELVE of ***TRILO-G*** and in ROOTS OF THE HELTER SKELTER CRISIS – PART ONE of ***TRILO-G*** will be of assistance until those the new graphics are developed.

In addition, ***The Theory and Practice of Agrarian Urbanism*** provides graphics to help citizens visualize how to build at or near The Clear Edge around the Core of a New Urban Region as well as at or near The Clear Edge around the Urban enclaves that are components of Balanced But Disaggregated Communities in the Countryside. NB: The components of Balanced But Disaggregated Communities are sometimes called “Service Districts” to indicate that within the ‘district,’ Urban services are provided.

In conjunction with application of the Cordon Line Strategy and Next Highest Component Strategy noted later in this Section, Duany’s book sketches a path forward without scattering and hiding big Urban dwellings in the bushes.

In summary, the process to plan the implementation of Agrarian Urbanism would be similar to The Three Step Process to plan the evolution of Alpha Communities inside The Clear Edge that is spelled out in CITIZEN HANDBOOK – PART TWELVE of *TRILO-G*.

In The Three Step Process, citizens start by identifying the Cores of the Beta Communities within The Clear Edge. To start the process of identifying the parameters of Realm Two, citizens would identify of The Logical Location of The Clear Edge.

The Logical Location of The Clear Edge can be identified with contemporary air photos, with maps of existing street patterns as is illustrated for Loudoun County, VA in The Three Step Process or with Google Earth. See the maps used to illustrate the PowerPoint “New Urban Region Conceptual Framework” on the *TRILO-G* Beta 2 CD.

The location and the amount of land within The Logical Location of The Clear Edge depends on scale of Urban agglomeration within The Clear Edge in question. Once the Logical Location of The Clear edge is established, the defunct Cambium layer can be identified and quantified.

As a threshold sketch for illustrative purposes assume the Core of the New Urban Region has a population of 4 million. It is probable that The Logical Location of The Clear Edge will be between Radius = 20 Miles and Radius = 30 Miles. Let us assume the average location is 20 miles from the Centroid of the New Urban Region.

The next step would be to identify a Radius band that covers the area from 5 miles INSIDE The Logical Location of the Clear Edge to 10 miles OUTSIDE The Logical Location of The Clear Edge. The ACTUAL location of The Clear Edge will emerge from the sketch planning process in the target Radius Band.

The Clear Edge should always be viewed as an organic result of market and geographic realities. While The Clear Edge may expand over future decades, as the 30 pn/ac Alpha Communities evolve INSIDE The Clear Edge, the location of The Clear Edge will migrate INWARD. That is why the land INSIDE and OUTSIDE the initial Logical Location of The Clear Edge is included in the sketch plan process.

In a prototypical New Urban Region, if The Logical Location of The Clear Edge is at Radius = 20 Miles there will be a 15 mile wide Radius Band that covers 1,357,000 acres.

Let us assume that half of this territory is found to be devoted to – or would be best devoted to in the future to:

- ◆ SubRegional and Regional OpenLand and OpenSpace (both terms defined in GLOSSARY)

- ◆ Areas of water, wetlands, existing intensively urbanized areas and land with steep slopes and otherwise unuseable for Agrarian Urbanism.

In this back of the envelope calculation, that leaves about 700,000 acres as the locus of multiple alternative sketch plans for the application of Agrarian Urbanism. See End Note Sixty Five

65. Earlier, in Section VI, it was noted that the PRIMARY area of impact of the scatteration of Urban uses outside the Core of Large New Urban Regions reached out to Radius = 50 Miles. The example above – applying a 15-mile wide Radius Band – encompasses over 1.35 million acres with 700,000 acres suitable for Agrarian Urbanism.

What if one considers the entire area out to Radius = 50 miles?

Between $R = 30$ and $R = 50$ there are an additional 3.2 million acres. If half of this area is viable for Agricultural activities that is over 1.6 million acres. Due to the cost of Urban Services, most of this area would fall OUTSIDE The Clear Edge around the Core of the New Urban Region and thus be in the Countryside. The scattered Urban land uses now in this area would evolve to become components of Balanced But Disaggregated Communities or relocate INSIDE The Clear Edge around the Core of the New Urban Region.

These numbers are provided to illustrate that literally MILLIONS of acres have been wasted by scattered Urban land uses over the past 50 years.

E. THE IMPORTANCE OF MULTIPLE SKETCH PLANS

A substantial number of ALTERNATIVE sketch plans should be assembled for the territory in Realm Two. The more alternatives, the better. The sketch plans should reflect the interests of land owners, agronomists, environmental Institutions, Service supplying Agencies, interested citizens and all other stake holders.

Enough of the feasible sketches should be quantified to yield an upper and lower bound for the Holding Capacity and agricultural production of the 700,000 acre area using the three prototypical Agrarian Urbanism templates suitable for application in Realm Two – and variations on those themes.

One other major parameter must be considered. There will be multiple Clear Edges in the Countryside. These would be The Clear Edges around the Urban enclaves that are components of Balanced But Disaggregated Alpha Communities illustrated in the PowerPoint “The New Urban Region Conceptual Framework” on the *TRILO-G* Beta 2 CD. The most critical parameter to evolve from the process would be to locate The Clear Edge around the Core of adjacent New Urban Regions.

Dozens of these processes would need to be carried out to establish more comprehensive guidance for future sketch plan processes.

F. THE TOOLS

This subsection provides a brief outline of existing sources.

Comprehensive Conceptual Frameworks and References

- ◆ THE NEW URBAN REGION CONCEPTUAL FRAMEWORK (*THE SHAPE OF THE FUTURE* AND *TRILO-G*)
- ◆ THE ESTATES MATRIX – *TRILO-G* – PART TWO
- ◆ NEW METRIC FOR CITIZEN WELL BEING – *TRILO-G* – PART FIVE)
- ◆ CITIZEN HANDBOOK – PART TWELVE of *TRILO-G*
- ◆ USE AND MANAGEMENT OF LAND – *TRILO-G* – PART FOUR. (A sketch Conceptual Framework
- ◆ MANAGING CIVILIZATION – AN OVERVIEW, Current Perspective # 23

Vocabulary

See discussion of Vocabulary in *THE SHAPE OF THE FUTURE* and in Chapter 26 of *TRILO-G*. Also see PRIMER, Current Perspective (Forthcoming)

Large Scale Strategic Plans

- ◆ The Wright Plan for New York (1928)
- ◆ The Wedges and Corridor Plans for the National Capital Area (1958 to 1965) See “SuperNoVa Summary,” 24 Feb 2012 for a perspective on these plans.
- ◆ The Herkimer-Oneida Comprehensive Sketch Plan (1967)

- ◆ Land Use Control System for Adirondack Park (1969-71)
- ◆ Loudoun County and Prince William County VA – 1988 to 2000
illustrated in CITIZEN HANDBOOK – **TRILO-G** – PART TWELVE
- ◆ Metro Boston Regional Community Types (2011)

Threshold Tactics Outlined in *THE SHAPE OF THE FUTURE* and *TRILO-G*:

- ◆ The Next Higher Component Tactic
- ◆ The Cordon Line Tactic
- ◆ Subdivision Recycling Tactic
- ◆ Parcel Consolidation Tactic
- ◆ Property Right Transfer

X. APPENDICES

APPENDIX A. READING LIST – Resources for SETTLEMENT PATTERN CONSILIENCE.

OVERVIEW

In addition to the sources listed in the End Notes there are a number of important books and other resources that will help in creating an understanding of the Fundamental Transition of human settlement patterns at and near The Clear Edge. NB: Some important resources noted in the End Notes are repeated in this Appendix.

A place to start assembling resources is the list of 22 books in The Alpha Community Reading List, Current Perspective #12. This Perspective also references 146 titles in APPENDIX THREE – READINGS of *THE SHAPE OF THE FUTURE* and over 100 titles in Chapter 34 – Fireside Reading in *TRILO-G*.

When The Alpha Community Reading List is next revised it will include *The Age of Greed* (2011) in ‘The Big Picture’ section. This book by Jeff Madrick is a comprehensive exposition of the forces behind the unsustainable expansion of the Citizen Wealth and Well Being Gulf between 1968 and 2010 in the United States.

SETTLEMENT PATTERN CONSILIENCE focuses on the ECONOMIC and PHYSICAL aspects of human settlement pattern Transformation. There are also profound SOCIAL implications. As portrayed in Chapter 4 Box 2 in *THE SHAPE OF THE FUTURE*, GOVERNANCE is focused on the intersection of the ECONOMIC and SOCIAL Spheres of Human Experience. Due to the failure of citizens to evolve a functional governance structure that matches economic, social and physical reality in 2012 (See Sections II and III) ‘politics’ plays an important role in preventing rational Fundamental Transformations to more functional settlement patterns. That is why SOCIAL Sphere concerns are so critical.

One of the obstacles that citizens face in making intelligent decisions about the future is the ‘speed’ of contemporary society. This speed has increased dramatically since Stephen Bertman wrote *Hyperculture: The Human Cost of Speed* in 1998. The relationship between “Future Shock” and “Past Shock” [“Past Shock” is a frenetic pace of activity with little significant actual change] is examined in Chapter 31 of *THE SHAPE OF THE FUTURE*. Also see Mouzon, Steve “The Price of Speed” *Better! Cities & Towns* on line 21 Feb 2012.

The direct impact that the ‘speed’ of contemporary civilization is having on citizen decision processes is demonstrated by the discussion of ‘Running Hard As They Cans’ who are a focus of the citizen education strategy PROPERTY DYNAMICS – PART THIRTEEN of *TRILO-G*.

Two easy to access explorations of the difficulty of making consistently sound decisions within the constrained time frames and the limited attention spans available to contemporary citizens are the perennial best seller *Blink: The Power of Thinking Without Thinking* by Malcolm Gladwell (2005) and *Thinking Fast and Slow* by Daniel Kahneman (2011).

One other important ‘SOCIAL’ aspect of the evolution of the existing human settlement patterns is the rise of profound economic segregation and the decanting of citizens with ‘contrarian’ (often anti-social) proclivities to the Cambium Layer. This phenomenon is explored by Bill Bishop in *The Big Sort: Why the Clustering of Like-Minded America is Tearing us Apart*. This issue and the role of electronic communications is explored in Section II concerning Mass OverConsumption and Mass OverCommunication.

THE CORE TEXTS

The seminal text concerning the Fundamental Transformation of land at and near the Clear Edge is Duany, Andres & DPZ *The Theory and Practice of Agrarian Urbanism* (2011) (In August 2011, the second printing was re-titled *Garden Cities – The Theory and Practice of Agrarian Urbanism* – See End Note Sixty Two concerning this unfortunate title change.)

There are other recent books which have been released since the publication of Chapter 34 of *TRILO-G* in January of 2010 that also deserve attention. They include:

Thadani, Dhiru *The Language of Towns and Cities: A Visual Dictionary* (2010),

Gehl, Jan *Cities for People* (2010), and

Arendt, Randall *Envisioning Better Communities: Seeing More Options, Making Wiser Choices* (2010). Arendt’s book is profiled in Section VIII and discussed in APPENDIX C Understanding the Arendt Perspective.

Troy, Austin, *The Very Hungry ‘City’ [Region]: Urban Energy Efficiency and the Economic Fate of ‘Cities’ [Regions]* (2012).

Jackson, Richard J., *DESIGNING HEALTHY COMMUNITIES* (2012).

NOTHING NEW UNDER THE SUN

As important as these books are, in a sense there is ‘nothing new’ in these texts. If one has a comprehensive Conceptual Framework and a Vocabulary to articulate that Framework, the basis of what these books have to say can be found in much earlier texts. For example see:

Howard, Sir Ebenezer, *Tomorrow, a peaceful path to real reform* (1898) reprinted as *Garden Cities of Tomorrow* (1902)

MacKaye, Benton, *The New Exploration: A Philosophy of Regional Planning* (1928)

Howard, Sir Albert, *The Soil and Health: A Study in Organic Agriculture* (1947), and

Leopold, Aldo, *A Sand County Almanac and Sketches Here and There* (1949).

As noted in Section VIII, Ian McHarg’s *Design With Nature* (1969) and Chris Alexander’s *A Pattern Language* (1977) as well as the work of Phil Lewis in Wisconsin and the Midwest lay the foundation for determining land that is most suitable for Urban land uses and that which is best reserved for NonUrban land uses.

THE SHAPE OF THE FUTURE was published in 2000. Of the 146 books cited in APPENDIX THREE - READINGS , 14 were first published before 1940 and 46 were published before 1973. After 1973 ‘everyone’ should have understood that economic, social and physical forces illuminated by the OPEC Oil Embargo would require the Fundamental Transformation of human settlement patterns that were dependent upon Large, Private Vehicles and cheap energy.

For example here is a partial list of books that were used as texts during the three years that the author held a tenure track faculty position in a respected school of architecture (Sept 1968 to May 1972):

Mumford, Lewis, *The City in History: Its Origins, Its Transformations, and Its Prospects* (1961),

Jacobs, Jane, *The Death and Life of Great American Cities* (1961),

Tunnard, Christopher and Pushkarev, Boris, *Man-Made America: Chaos or Control* (1963),

Rudofsky, Bernard *Streets for People: A Primer for Americans* (1964)

Spreiregen, Paul *Urban Design: The Architecture of Towns and Cities* (1965)

Rowland, Kurt *The Shape of Towns* (1966), Bacon,

Edmund *The Design of Cities* (1967).

BUILDING BALANCED COMMUNITIES

End Note Fifty Six suggests becoming familiar with the books in THE ALPHA COMMUNITY READING LIST, Current Perspective # 12 linked from the CURRENT PERSPECTIVES page at www.emrisse.com . The books in Sections IV and V noted below are especially relevant:

Section IV. COOPERATION AND CONSERVATION IN BALANCE WITH COMPETITION AND CONSUMPTION – TRUE CONSERVATISM.

GOVERNING THE COMMONS: The Evolution of Institutions for Collective Action, Elinor Ostrom, 1990.

BUILDING COMMUNITIES FROM THE INSIDE OUT: A Path Toward Finding and Mobilizing a Communities's Assets, John P. Kretzmann and John L. McKnight, 1993.

The Abundant Community: Awakening the Power of Families and Neighborhoods, John McKnight and Peter Block, 2010.

Community: The Structure of Belonging, Peter Block, 2008.

Shop Class as Soulcraft: An Inquiry into the Value of Work, Matthew B. Crawford, 2009.

THE VALUE OF NOTHING: How to reshape market society and redefine democracy, Raj Patel, 2009.

ALL THAT WE SHARE: a Field Guide to the Commons, Jay Walljasper, 2010.

Section V. THE BOTTOM LINE

the not so big life: Making Room for What Really Matters, Sarah Susanka, 2007.

Pocket Neighborhoods: Creating Small-Scale Community in a Large Scale World, Ross Chapin, 2011.

in-laws, outlaws and granny flats: Your Guide to Turning One House Into Two Homes, Michael Litchfield, 2011

Creating Cohousing: Building Sustainable Communities, Kathryn McCamant and Charles Durrett, (2011)

THE ROOTS OF THE MOBILITY AND ACCESS CRISIS

No list of books concerning Fundamental Transformation to functional human settlement patterns would be complete without reference to important texts that sounded the alarm about reliance on Larger, Private Vehicles as the primary way for citizens to achieve Mobility and Access within large Urban agglomerations.

In addition to the work of MacKaye cited above (“the townless highway and highwayless town”) these books include:

Mumford, Lewis, *The Highway and the City* (1953),

Owen, Wilfred, *The Metropolitan Transportation Problem*, (1955) and,

Schneider, Kenneth, *Autokind VS Mankind: An Analysis of Tyranny, A Proposal for Rebellion, A Plan for Reconstruction*. (1971).

Also see THE PROBLEM WITH CARS – PART THREE of *TRILO-G* and WHAT FOLLOWS THE CAR, Current Perspective XX (Forthcoming).

APPENDIX B. WASTE OF THE PLANETS RESOURCES

Vance Packard called the author's attention to contemporary societies exorbitant waste of resources (*The Waste Makers* – 1960) driven by subliminal (as well as blatant) advertising that prays on primitive genetic proclivities (*The Hidden Persuaders* – 1957) in pursuit of social status (*The Status Seekers* – 1959). Rereading these books in 2012 documents:

- ◆ How foolish humans are collectively – the lemmings path to the cliff and Collapse of 'modern' society was spelled out in chapter and verse by 1960.
- ◆ How pervasive primitive genetic proclivities are, and
- ◆ How willing some humans are to pray on the less well prepared See *The Age of Greed* by Jeff Madrick.

It is very clear that humans in the top 20 percent of the global Ziggurat could have achieved the same level of comfort, amenity and quality of life with FAR LESS CONSUMPTION – which SYNERGY terms Mass OverConsumption – and FAR LESS WASTE.

It is also clear that this glut of consumption and waste was undertaken to satisfy the 'needs' of only 20 percent of the total population of the planet. See ENOUGH?, Current Perspective #18. It is important to recall that within that 20 percent, half of those living in 'developed' nation states are actually losing ground with respect to prosperity and quality of life in spite of continued Mass OverConsumption and waste.

Reducing waste will not solve the Mass OverConsumption problem but it is the place humans must.

Everyone has their favorite poster child for gross waste. At SYNERGY that poster child is the gross waste of energy employed in lighting the night sky. The worst case example is turning on the lights in buildings including empty office buildings and field lights in empty stadia when there is a nationally broadcast sporting event to show the power, scale and glitter of the host Urban agglomeration.

Looking beyond this energy waste, here are a few of the current exponents of waste:

- ◆ Spoilage and waste in food supply chains – half the food in the field never gets to a table. Even more is discarded when it gets stale or rotten in the kitchens whether those kitchens are controlled by Households, Agencies, Enterprises or Institutions.
- ◆ Useful products that are sent to landfills because lack of institutionalized 'trash-to-treasure' programs and 'thrift store' activities.

- ◆ Products that wear out or are unuseable and un-recyclable after one use. These products range from once-used bars of soap to precision medical equipment.
- ◆ Un-recyclable packaging.
- ◆ Products that are designed to ‘go out of style’ or made obsolete by ‘new’ products that serve essentially the same purpose.
- ◆ Products that are created just to spur consumption.

Much of the current coverage in Enterprise Media concerning ‘sustainability’ is Greenwash (buying additional goods and services in the name of ‘conservation’)

As noted above these exponents of waste focus on the activities of only 20 percent of the total population – those in the ‘developed’ nation-states and a few at the very top of the Ziggurat in other nation-states. The growing Citizen Wealth and Well Being Gulf means that within the developed nation-states over half are losing ground with respect to quality of life.

As noted above, reducing waste will not solve problems but it is the place to start. When Linda Risse sees examples of blatant waste of resources she always asks:

“Why not use that money (those resources) to feed and clothe the poor and provide health care for the less fortunate?”

Many who understand the problem of waste and the pitfall of Mass OverConsumption continue to live in ways that result in waste. They are not. That is the problem: Almost no one has the perspective of Mohandas Gandhi. Few will give up their consumptive lifestyles unless most others do too.

Large, Private Vehicles are the exponent of waste but if would be unsafe – and almost insane – to give up the safety of Large, Private Vehicles until one does not have to compete for roadway space with 40 ton trucks and reckless drivers of Large, Private Vehicles.

APPENDIX C. UNDERSTANDING THE ARENDT PERSPECTIVE

The author has known of the work of Randall Arendt for decades. There is a wire bound copy of the Lincoln Institute of Land Policy report *Dealing With Change in the Connecticut River Valley: A Design Manual for Conservation and Development* that introduced the concept of ‘conservation subdivisions’ in the SYNERGY library.

Dealing With Change... offers a number of intelligent tactics for making new Urban uses more ‘compatible’ with the environment and with the surrounding uses, IF THAT DEVELOPMENT WILL TAKE PLACE IN THAT LOCATION ONE WAY OR THE OTHER.

Since the idea conservation subdivisions was first introduced, there have been those who challenge the concept of ‘conservation subdivisions.’ It is also confusing to refer to these subdivisions being located in ‘rural’ areas. The land uses in conservation subdivisions are by definition: Urban. This is a reason ‘rural’ is a Core Confusing Word.

For some conservation subdivisions have appeared to be just an excuse to allow Urban land uses where there should be NO Urban use. For some ‘conservation subdivisions’ are not an intelligent distribution of land uses but rather just techniques to “hide ‘em in the bushes.”

SYNERGY had not comprehensively considered this issue until the author was asked to read and comment on *Envisioning Better Communities: Seeing More Options, Making Wiser Choices* (2010).

The part of the Randal Arendt book that turned out to be most helpful was the short ‘About the Author’ section. This section lays out just why Randall designed the projects that constitute the bulk of the text and graphics in the book.

Where Arendt grew up, where he went to college and the sequence of jobs he held ALL TRAPPED HIM AT THE FRINGE. Randall experienced different environments in Europe but even in England he was trapped at the fringe.

The reality is that Randall Arendt made the best of the conflicting:

- Desires, goals and objectives of Countryside land owners who wanted to profit from Urban land uses,
- Fears and desires of adjacent landowners to conserve the Countrysides, and
- Fantasies of the future dwelling owners.

The author knows EXACTLY why Randall did what he did. The author KNOWS THIS TRAP AT THE FRINGE WELL from first hand experience. He followed a similar path in a Duchess

County, NY project (circa 1969 / 1970) for Charles Dana Gibson III who owned land near Millbrook, New York.

Dana Gibson had read *Design With Nature* by Ian McHarg soon after publication and wanted to create ‘environmentally sensitive’ building sites on 140 acres + / - of mixed hay and forest land. At the recommendation of Henry Heisenbuttel, the long time planning director of Dutchess County in the Hudson River Valley of New York, Gibson visited the Architecture School at Rensselaer Polytechnic and asked the dean who he should hire to plan and design his project in the spirit of McHarg’s prescription for minimum environmental impact.

In 2011 the author searched Google Earth for the project but could not positively identify it. However, over the ensuing 40 plus years there were MANY subdivisions where few had existed in 1970. Some were ‘conservation subdivisions,’ many were not. They ALL had the same cumulative impact on roadways and surrounding land uses. The ALL generated the same demand for places to drive and park Large, Private Vehicles.

The plan for the 140 acres and 12 home sites was ‘the very best way’ to optimize the interest of the land owner, while minimizing the direct visual impact in the immediate vicinity and the direct ecological impact of scattered Urban dwellings. ‘Sensitive’ site design, however, does NOT minimize the CUMULATIVE impact.

The result of this subdivision process is desirable for the new owner so long as they have plenty of money, plenty of time and good health that allow them to forage for the elements of a satisfying life style using lots of time and a Large, Private Vehicle.

The bottom line is that one ‘conservation subdivision’ per 10,000 acres is not a problem. But it must be treated like morphine, not like vitamin D. Use the conservation subdivision to treat the pain of extreme property rights addiction. But NEVER as a general application for general health, safety and welfare.

Is there a role for Conservation Subdivisions? It was the very best way to optimize the interest of the land owner, while minimizing the direct visual and immediate vicinity ecological impact of scattered Urban dwellings. ‘Sensitive’ site design, however, does NOT minimize the total impact.

Down the road – literally – the owners of dwellings in conservation subdivisions ALL must have places to drive and park their Large, Private Vehicles. Large, Private Vehicles are the ONLY way residents have to access what they needed to survive in a contemporary Urban society.

Arendt knows better, he saw better when he toured in Europe early in his career. He remarks in *Envisioning Better Communities* on seeing Clear Edges between Urbanside and Countryside on the continent.

Arendt now advises clients that the best solution is to ‘down-zone’ and take away ‘ByRight’ Urban development opportunities. But, he suggests, if there is not the political will to do this, then conservation subdivision is a viable tactic.

Like many New Urbanists, Arendt relies on regulations and codes to guide development. See Section IV concerning the relative uselessness of regulation vs the market and citizen education.

The most important understanding is that there is no longer a market for this form of development – especially if all the location-variable costs are fairly assessed. That is fundamentally different than the conditions that existed in the Connecticut River Valley near major Universities – or in the Hudson River Valley – in the 1970s and 1980s.

As noted in Section VIII, there is hardly a paragraph in the first Three Parts of *Envisioning Better Communities* that does not have a good idea about how to locate scattered Single Household Detached dwellings on green field sites. There are also many good ideas to minimize the ecological impact of Urban dwellings at the Dooryard and Cluster scales.

However, no matter how well designed, those Dooryards and Clusters are, they remain scattered Urban land uses. The cumulative impact of the Large, Private vehicles which are the ONLY option for providing Access and Mobility for the Urban residents is overwhelming.

Knowing why Randall designed projects the way he did does NOT mean that it was a good idea. *Envisioning Better Communities* reflects Arendt’s experience – trapped at the fringe – and is not a path to a sustainable future.

Thanks to the market, professionals and municipal governments no longer need to fight these battles. No one benefits from hiding scattered Urban dwellings in the bushes via ‘conservation subdivisions.’

Conservation Subdivisions are far better than the mindless parcel butchering which they may replace on a MICRO scale, but they are NOT that much better than a similar number of scattered dwelling units from a cumulative impact perspective.

Randall fashioned his experience into a process to create a product that was never needed in large quantity and now is unaffordable. This settlement pattern is unaffordable by the Agencies that must provide Services and the occupants that occupy them.

Beyond the problem of scatteration in the Countryside, there is also the problem of finding excuses to build more large Single Household Detached Dwellings ANYWHERE. To ‘infill’ partly built out municipalities with scattered Single Household Detached dwellings is simply insane.

What is needed is compact settlement patterns, not scattered OR hidden large Single Household Detached dwellings.

One need only ask these questions:

1. How would these places function if the Household could afford only one Large, Private Vehicle?
2. How would these places function if the Household could not afford even one Large, Private Vehicle?
3. How does one retrofit a conservation subdivision to increase density and make the use of shared-vehicles, low-power vehicles, self-powered vehicles and walking possible?
4. How do conservation subdivisions make functional and sustainable use of the millions of acres of partially Urbanized land within 100 miles of the Core of the New Urban Regions where 85 percent of the US population now live and work?

Ardent has done good infill. Parts Four and Five of *Envisioning Better Communities* provides many good ideas but they are buried behind first three parts that have been Randall's bread and butter. To be useful for current application, one needs to take a mat knife and slice out Parts One, Two and Three.

APPENDIX D. Origins of SETTLEMENT PATTERN CONSILIENCE

This Current Perspective was inspired by the authors's friend and colleague Bob Lee, Executive Director of the Virginia Outdoors Foundation and former County Administrator in two Virginia counties that have provided national leadership in the conservation of the Countryside.

Bob loaned a copy of by Randall Arendt's book (Arendt, Randall *Envisioning Better Communities: Seeing More Options, Making Wiser Choices*, 2010) and asked for thoughts on the book.. (See Appendix C.)

The word 'consilience' in the title of this Perspective is derived from the use of the word by Edward O. Wilson in *Consilience: The Unity of Knowledge* (1998). See Foreword in *THE SHAPE OF THE FUTURE* by I. Michael Heyman. 'Consilience' is defined in unabridged dictionaries and an exploration of the roots of the word "in the ancient Greek concept of an intrinsic orderliness of the world" can be found in Wikipedia.

In addition to the resources cited in the End Notes and in the references, SETTLEMENT PATTERN CONSILIENCE reflects the congruence of many threads of contemporary thinking including, for example, the 'no new streets' concept of Ian Rasmussen and Charles Marohn in *Better! Cities & Towns* (15 February 2012).

This Perspective was actually launched sixty four years ago.

It was the summer of 1948. The Risse Household – Milt (father), Ginny (mother), EMR (ten year old son) and Sara (three year old daughter) – were on the way home to Coalinga, California from a fishing and future-place-to-live exploration of Western Montana. After crossing the Sierra Nevada Range Milt turned down EMR's request to drive THROUGH the middle of the City of Sacramento instead of driving around it. Milt said: "Na, we do not want to waste time going through the middle of Sacramento. When you have seen one city, you have seen them all."

EMR knew right then: "That is NOT correct."

On the same trip the family was traveling east on what is now US Route 6 in the Nevada desert. Just after dawn they came over a hill to see the Urban enclave of *Envisioning Better Communities* Tonopah in stark, backlit relief. Milt asked: "What in the world do all those people do here in the middle of the desert?" Ginny answered: "They take in one another's washing."

Sixty four years later recalling that reply still brings a smile.

Resilience and Balance are important at all scales.

See *CV / Bio* page section at www.emrisse.com