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Smart Growth Initiatives and Their Ability to Enhance the National Security of the U.S.

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Smart Growth Initiatives
and
Their Ability to Enhance The National Security of The U.S.

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Science
in
Urban Studies

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Abstract

The beginning of the 21st Century has presented the United States with many new challenges. One of the most significant challenges we face are domestic and foreign security issues. Though traditionally the U.S. has relied on military and law enforcement agencies to address security related matters, in the wake of new pressing concerns such as terrorism, foreign fuel reliance and environmental degradation it has become apparent that other alternatives must be examined. One such alternative is the implementation of smart growth initiatives into current urban and sub-urban planning processes. The implementation of these initiatives into existing and new development will provide the United States with the strategic advantage to address security issues in the 21st Century.

Chapter 1

Introduction to Smart Growth & National Security

The beginning of the 21st century will pose many new challenges for urban and regional planners both globally and nationally. Many of these new challenges focus on the earth's environment. Unfortunately, rising oil prices, reliance on foreign oil, high energy consumption and national security are also challenges that urban and regional planners will have to face. However, there is a current initiative in regional planning designed to combat these problems. Smart growth is a planning initiative that may hold many of the solutions to not only existing environmental concerns but also many national security concerns as well. The focus of this paper is to examine smart growth and the impacts such initiatives will have on the national security of the United States. Further, this paper explores the implementation of smart growth initiatives and whether or not they will enhance the overall security of the United States.

Methodology

The term "smart growth" is meant to describe development strategies that do not promote urban sprawl.(14) This paper will attempt to expose the problems resulting from urban

sprawl and the detrimental effects they have on U.S. security. These problems consist of foreign fuel reliance, urban encroachment on U.S. military installations, global warming and social decline. Once it is established that these problems are jeopardizing national security, this paper will present the implementation of smart growth initiatives as a solution to security problems resulting from sprawling development.

Smart Growth & National Security Literature Review

Despite the current political climate where issues such as terrorism, the environment and energy needs are heated topics, there has been very little research concerning urban planning methods and their relationship to national security. Though this study is set to address a planning method referred to as smart growth and the ability of smart growth initiatives to enhance the nation's security, research has shown that this topic suffers from a lack of contemporary, directly related research-(if indeed any exists). Generally speaking, it appears that this topic has been greatly overlooked. Fortunately, the problem of urban sprawl has not been overlooked and can be directly linked to hindering national security.

What is National Security?

According to the Rand Corporation, no present agreed upon definition of national (or homeland) security exists. (30) However, for the purpose of this paper national security will be defined as the requirement to maintain the survival of the nation state through the use of economic, military,

political and diplomatic measures. (30) These measures consist of using diplomatic means to rally allies and isolate threats, maintaining an effective military, implementing civil defense and emergency preparation measures, ensuring the resilience of critical infrastructure and the use of intelligence and counter-intelligence measures to protect the nation from both internal and external threats.(30)

Urban Sprawl

According to the Sierra Club, Urban Sprawl is defined as the irresponsible, often poorly planned development that destroys green space, and increases traffic and air pollution.(33) Sprawling development not only creates homes further from jobs, shopping and other services, but also creates two major problems: increased vehicle miles traveled (VMT) and increased infrastructure needs.(34) These problems are costly to local governments and increase the amount of emissions polluting the atmosphere.

Increased vehicle miles traveled (VMT) is a consequence of urban sprawl.(6) Due to the fact that an increasing amount of the population is moving further and further from city centers, the distance and time of their commutes are increasing. This not only creates transportation inefficiency and unnecessary fuel consumption, but also increases emissions and creates a health hazard in our communities. A study conducted by the Bureau of Transportation Statistics found that between 1985 and 1999, traffic in the U.S. increased three times faster than the

population because of a lack of transportation choices and sprawl. (6) This increase in traffic has also increased health risks. In a study conducted by the Sierra Club entitled "Highway Health Hazards" numerous key findings from noted scientific studies linking vehicle emission and correlating health problems are addressed. They include;

- A John Hopkins study showing the association between traffic and curbside concentrations of cancer causing pollutants.
- A Journal of the American Medical Association study linking soot in diesel exhaust to lung cancer, cardiopulmonary disease and other causes of death
- A Denver study showing that children living near busy roads are six to eight times more likely to develop leukemia and other forms of cancer.
- A journal of the American Medical Association study finding that increased public transportation along with other traffic control measures during the 1996 Atlanta Olympics reduced acute asthma.
- The California South Coast Air Quality Management District did a Multiple Air Toxics Exposure Study-II, the most comprehensive study of urban toxic air pollution, showing that

vehicle exhaust is the source of cancer causing air pollutants in Southern California.(17)

In addition to the problems caused by an increase in vehicle miles traveled, the demands urban sprawl places on infrastructure are also an area of concern. Building new developments draws funds away from existing developments. This leaves existing developments underfinanced for maintenance projects and often leads to decaying infrastructure. One article by the Sierra Club claims, "The infrastructure needs arising from sprawling development can cost a household \$630 more per year".(34) Further, a growing body of research has shown that many communities are subsidizing new development in the form of new roads, water and sewer lines, schools and emergency services. Communities are also subsidizing growth by offering incentives to new business industries that locate in their jurisdiction, often sacrificing tax revenues needed to serve existing residents and businesses. (31)

Urban Sprawl & Fuel Consumption

"The attacks of September 11 have filled us with fear. With respect to our energy supplies, we need to become more self sufficient, create more reliable and secure infrastructure, and diversify our sources in ways that entail acceptable costs." Because of the link between national security and energy, it is important for the United States to "increase the robustness of our energy system, encourage distributed generation,

increase the number and diversity of sources and move closer to the source of our power in order to decrease disruptions."

-Senator Susan Collins (R-ME), Senate Armed Services Committee, National Energy Security Briefing October 2001. (11)

As urban sprawl increases and the population at large grows increasingly dependant on vehicles, VMT's and fuel consumption will increase. According to the NRDC, traffic has grown three times faster than the population over the last two decades.(20) This in turn, increases our dependence on oil and our vulnerability as well.

The United States uses a quarter of the world's petroleum, but only has 3% of known oil reserves.(20) According to a 1990 study by Newman & Kenworthy, the United States leads the world in gasoline use per capita. (28) The 1990 study lists the United States as the number one consumer using an average of 55,807 Megajoules of gasoline in private transportation use.(28) The study then lists Australia as using 33,562 Megajoules of gasoline, Canada as using 30,893 Megajoules of gasoline, Europe as using 17,218 Megajoules of gasoline and Asia as using 6,311 Megajoules of gasoline.(28) This disproportionate figure is not only indicative of U.S. dependence on oil but specifically its dependence on foreign oil production. If urban sprawl continues to increase at the existing rate, the U.S. may be subject to increasing diplomatic pressures and increased reliance on the natural resources of other countries. This becomes increasingly problematic considering the foreign

governments the United States may have to conduct trade with to satisfy its oil needs.

According to the NRDC, the United States continues to spend more than \$20 Billion each year on oil from the Persian Gulf (20). One-fifth of the oil imported into the United States is produced by foreign nations whose governments can be described as unstable or hostile to American interests. Further, the NRDC states:

-The United States imports more than half its oil from some of the most unstable regions of the world.

-Sixty-five percent of the world's known reserves lie beneath the Persian Gulf States.

-Drilling in the Arctic National Wildlife Refuge would increase world reserves by less than one-third of one percent, yielding only enough oil to provide for just six months of U.S. consumption.

-Despite significant improvements in engine technology, the average fuel efficiency of passenger vehicles in the United States dropped between 1988 and 2000 because of loopholes in fuel economy, safety and environmental standards.

(20)

The current dependence resulting from Urban Sprawl not only compromises U.S. foreign policy, but also creates a situation that the U.S. will not be able to drill its way

out of. If urban sprawl and existing oil dependence and policies continue, our economy and security will be increasingly vulnerable to the fluctuating international oil market. (20)

Urban Sprawl & Military Concerns

As urban sprawl continues to place increasing pressure on the nation's energy woes, the U.S. military has voiced concerns regarding the burden sprawl is placing on defense agencies. According to the National Governor's Association, increased sprawl is threatening the effectiveness of U.S. Military Bases.(26) As cities expand, neighborhoods are growing closer to military bases, top secret testing areas and training facilities. Urban encroachment is currently applying pressure to 80% of the nation's military bases. (37) This pressure is impeding on the effectiveness of military bases to carry out their missions. In an article entitled "Military Installations Pressured by Sprawl" by the National Governors Association (NGA), the NGA lists the conflicts between Urban Sprawl and the U.S. Military. The article states: Civilian encroachment around military installations is beginning to restrict or eliminate testing and training activities in many locations.(25) Residential and commercial communities located near bases are potentially exposed to artillery fire, aircraft noise, dust and accidents. (26) Further, the city lights of encroaching development compromises the effectiveness of night vision equipment, making the effectiveness of night training exercises impractical.(26)

The Strategic Environmental Research and Development Program completed a study in July of 2005 which further acknowledges the pressure urban sprawl is placing on our nation's existing military installations. In a study of the effects of urban sprawl on the Fort Benning Military Installation in Fort Benning, GA, the Strategic Environmental Research and Development Program found that the effects of urban encroachment occurring near military installations is continuing to grow and that urban encroachment negatively impacts both the civilian population and the military installation. (39) According to the study, urban growth and development negatively influence a military installation's ability to conduct training and maintain combat readiness.(39) Urban Encroachment may also hinder the viability of the military installation itself.(39)

Other Military Installations are also feeling the pressure that urban encroachment is placing on their viability. According to the U.S. Office of Economic Adjustment, Nellis AFB represents a clear example of the urban growth issue confronting military installations. (29) The air base is located in Clark County and adjacent to the city of North Las Vegas, Nevada. Urban sprawl is spreading north and west from Las Vegas, threatening to surround Nellis on four sides, affecting the base's ability to sustain its flying missions.(29) The northern aircraft departure corridor is now the only air route remaining where aircraft carrying live ordinance (bombs & missiles) may depart for the distant Nellis Test and Training Range or beyond. The southern departure route has long been closed to aircraft

carrying bombs and missiles, but remains in use for all other flying missions.(29) As urban development spreads, concerns are being raised that the emerging development patterns also may affect the northern aircraft departure route, possibly curtailing missions and bringing the Nellis AFB's future into question.(29)

The Los Angeles - San Diego Regions of Southern California provide another example of civilian encroachment hampering military operations. The urban development occurring near Marine Corps Base Camp Pendleton is becoming detrimental to the base's operations. MCB Camp Pendleton is an important amphibious training base that is today being squeezed between the growing Los Angeles and San Diego metropolitan regions. (29) A military installation's first priority is to provide its training forces with a realistic training environment. (29)

As Los Angeles grows southward and San Diego grows northward along the Pacific coast, MCB Camp Pendleton is experiencing urban development pressures from both directions.(29) The resulting urban growth pressures outside the fence line of Camp Pendleton are disrupting species habitat, driving wildlife onto this pristine Marine Corps training base, and affecting the quality of military training. (29)

Today, Camp Pendleton is recognized as one of the last bastions of large natural open space for wildlife habitat and rare flora, fauna, wetlands and other natural ecological features in Southern California.(29) About

28,000 acres of Camp Pendleton's 127,000 acres have some form of use restriction in order to comply with the Endangered Species Act and other environmental regulations.(29) In addition, community complaints about noise from live fire exercises have led to sharp limits on how Marines train. (29)

Nowhere are those restrictions more visible than at the camp's Red Beach, where Marines once trained before the landing on Iwo Jima in 1945.(29) The military training value of this mile long stretch of beach on the Pacific coast has been sharply curtailed in recent years.(29) For example, Marines once ashore at Red Beach cannot tactically disperse as they normally would during a landing, but rather can only move in designated areas.(29) Marines are not allowed to entrench or "dig in" because they might disturb environmentally sensitive endangered species or habitat.(29) Vehicle and troop movements also have been isolated to a few designated trails.(29) Helicopter training flights and live fire exercises are limited by concern over community noise complaints.(29)

In 2003, the Marine Corps conducted an encroachment impact study on training and readiness at Camp Pendleton.(29) An assessment of 739 training tasks determined that civilian development encroaching and surrounding the installation has had a measurable negative impact on the quality of training at Camp Pendleton.(29) The quantitative assessment determined that a Battalion Landing Team's training on Camp Pendleton was able to complete its required non-firing tasks to only 68 percent of the Marine Corps standard. (29)

This report by the Office of Economic Adjustment concludes that the findings of this assessment demonstrate that Camp Pendleton's ability to provide the full range of realistic combat training opportunities for Marines operating on and deploying from the base is significantly hindered by civilian encroachment.(29)

Despite the pressure urban sprawl adds to our nation's foreign oil reliance policies, urban sprawl is rendering the military vulnerable as well. If training exercises continue to be hampered by urban encroachment, where will our troops be able to train? Further, if neighborhoods continue to encroach towards military installations, how will top secret training, operations and equipment be conducted and used without civilian detection? If urban sprawl continues at the current rate not only can our nation's foreign oil reliance be exploited, but our military defenses can be jeopardized as well.

Global Warming

Despite the fact that global warming may not appear to be a direct threat to national security, the effects it has on the nation's health, environment and natural resources could prove to significantly jeopardize the overall security of our nation.

Urban sprawl is a current trend that is the result of poor regional planning. Global Warming, though it is not a man made trend, is the indirect result of trends in urban and regional planning. According to the Sierra Club, the

world's leading scientists project that during our children's lifetimes, global warming will raise the average temperature of the planet by 2.7 to 11 degrees Fahrenheit. (32)

According to the National Academy of Sciences, the Earth's surface temperature has risen by about 1 degree Fahrenheit in the past century, with accelerated warming during the past two decades.(46) Coincidentally, urban sprawl has accelerated during the past two decades as well. There is new and stronger evidence that most of the warming over the last 50 years is attributable to human activities.(46) According to the U.S. Environmental Protection Agency (EPA), human activities have altered the chemical composition of the atmosphere through the buildup of greenhouse gases - primarily carbon dioxide, methane, and nitrous oxide. The heat trapping property of these gases is undisputed although uncertainties exist about exactly how the climate responds to them. (46)

According to an EPA Publication, energy from the sun drives the earth's weather and climate, and heats the earth's surface; in turn, the earth radiates energy back into space.(46) Atmospheric greenhouse gases (water vapor, carbon dioxide, and other gases) trap some of the outgoing energy, retaining heat somewhat like the glass panels of the greenhouse. Without this natural "greenhouse effect" temperatures would be much lower than they are now, and life as known today would not be possible. Instead, thanks to greenhouse gases, the earth's average temperature is a more hospitable 60 degrees Fahrenheit. However, problems

may arise when the atmospheric concentration of greenhouse gases increase.(46)

The EPA states, that since the beginning of the Industrial Revolution, atmospheric concentrations of carbon dioxide have increased nearly 30%, methane concentrations have more than doubled, and nitrous oxide concentrations have risen by about 15%.(46) According to the EPA, these increases have enhanced the heat trapping capability of the Earth's atmosphere, subsequently causing the Earth's average temperatures to rise.(46)

Unfortunately, poor regional planning fosters global warming. Urban Sprawl results in an exponentially increasing utilization of fossil fuels. Furthermore, a lack of alternative non-fossil fuel forms of transportation compound the problem. According to the EPA, scientists generally believe that the combustion of fossil fuels and other human activities are the primary reasons for the increased concentration of carbon dioxide in our atmosphere. (46) Furthermore, in the last hundred years the release of carbon dioxide by human activities has insurmountably increased. Fossil fuels burned to run cars and trucks, heat homes and businesses, and power factories are responsible for about 98% of U.S. Carbon Dioxide emissions, 24% of methane emissions and 18% of nitrous oxide emissions. (46) Increased agriculture, deforestation, landfills, industrial production, and mining also contribute a significant share of emissions. In 1997, the United States emitted about one-fifth of total global greenhouse gases. (46)

Impacts of Global Warming

According to the EPA, rising global temperatures are expected to raise the sea level and change precipitation and other local climate conditions. Changing regional climate could alter forests, crop yields and water supplies.(46) The EPA further states that global warming could also affect human health, animals, and many types of eco-systems. Deserts may expand into existing rangelands, and features of some of our National Parks may be permanently altered. (46)

Despite the warnings posed by the EPA, the Sierra Club alleges that global warming will have even more drastic consequences which include the rapid spread of dengue fever, malaria, hantavirus, encephalitis and other climate influenced diseases. (32) The Sierra Club also believes that heat stretches such as the one that killed 699 people in the Midwest during the summer of 1995 will become more common.(32)

Urban sprawl (a current regional planning trend and problem) and global warming (consequence of such sprawl) are becoming two serious problems faced by regional planners today. Despite efforts to curb urban sprawl, it appears that our capitalistic system fosters this problem and thus it continues. Further, as sprawl increases, so do emissions and the global warming problem. Despite the fact that global warming is an indirect consequence of urban sprawl, it is a problem that faces planners today nonetheless. If this problem is not addressed, it appears that the consequences could be disastrous and ultimately

jeopardize not only our country's safety and security but its self sufficiency as well.

Urban Sprawl & Social Decline

Since the beginning of civilization, social decline and widespread poverty have been factors associated with the decline of past civilizations. Examples of a growing impoverished class as it contributes to the decline of a civilization can be found from as early as the Roman Empire to civilizations as recent as the Soviet Union. Though the significance of poverty's influence on the decline of a civilization is debatable, the existence in past civilizations and the strain it places on existing civilizations is evident. Currently, urban blight and poverty in our country's urban city centers is an increasing problem that the United States must combat in order to maintain both its economic and structural integrity. Currently, urban sprawl exacerbates the problems in our cities' urban centers by drawing funds away from existing developments in our city centers (which are many times already under-funded and poverty stricken) and applying these funds to new ex-urban developments.(34) This often prevents existing developments from receiving the necessary funds required for maintenance and contributes to the infra-structural decay that can be found in many of our country's city centers.

In addition to the financial loss existing developments experience due to urban sprawl, urban sprawl also centralizes poverty and tends to create a system of class

isolation. According to Associate Professor of Political Economy Paul Jargowsky of the University of Texas at Dallas, sprawl is related to poverty and inequality mainly because sprawl creates a greater degree of separation between the income classes. (18) If new development-whether planned or unplanned, ugly or beautiful, high density or low density- accentuates segregation of the rich and middle class from the poor, it contributes to the concentration of poverty. (18) Jargowsky's study finds that sprawl produces vast areas of concentrated wealth in the favored sectors of the city, while leaving the poor geographically and socially isolated in decayed central city areas.(18) Despite the geographic disadvantage such development places on lower income central city inhabitants, other aspects of sprawl have impacts on the poor as well, such as environmental degradation and low density. However, it is the pronounced tendency towards economic segregation that is the most likely to have dynamic effects on the income distribution. (18)

In a study conducted by Professor Jargowsky on the effects of urban sprawl as it effects urban blight, Professor Jargowsky concludes that sprawl and central city decline generate metropolitan areas in which the poor, especially the minority poor, live at a great remove from the areas of fastest job growth, and leaves the poor socially isolated.(18) Professor Jargowsky states that the poor are harmed directly by this system and that they are less likely to learn about suburban job opportunities, are less likely to have the necessary skills to be a realistic candidate for any of these job opportunities, are provided with inefficient public transportation and face a higher

degree of discrimination in hiring and promotion.(16) Further, the concentration of poor leads to concentration of social problems.(18) Residents may be harmed directly, by falling victim to violent crime, or indirectly, by being drawn into counterproductive activities.(18)

Sprawl, at least as it currently operates, is clearly part of a larger process that leads to more spatial, racial, social, and economic distance between neighborhoods.(18) These multiple dimensions of difference between lower income central-city neighborhoods and affluent exurban neighborhoods contribute directly to poverty in the short run by reducing the capacity of the inner city poor to find out about, to obtain, and to remain in jobs in the high growth sectors of the metropolitan area.(18) According to Jargowsky, these differences hinder the development of human and cultural capital in the next generation, setting the stage for greater poverty and inequality for generations to come. (18)

The strain urban sprawl is placing on our nation's poor has also caught the attention of a grassroots organization in Buffalo, NY named Housing Opportunities Made Equal (HOME). According to HOME, as Buffalo's suburbs have grown, Buffalo has become more and more racially segregated - creating the 4th most segregated metropolitan area in the country. As of the 1990 US Census, 85% of minorities (92% of Blacks) and 71% of low-income families in Erie County resided in the city. As fair housing advocates know, where people live impacts every other aspect of their lives - from access to schools to employment opportunities. (48) HOME also believes that sprawl has led to increased traffic congestion and

longer commute times to higher taxes to pay for services (police and fire departments) and infrastructure (new schools, more roads, new water and sewer lines).(38) Sprawl has led to the erosion of Buffalo's tax base and downtown commerce as well as the increased concentration of poverty and unemployment in the city. Sprawl is largely responsible for the destruction of the character of the city of Buffalo and its surrounding communities.(48)

Though some studies correlate sprawl with economic vitality, it is apparent that an economic boom from sprawling development is short sighted. Besides the strain sprawling development places on lower income families, strain resulting from the costs of additional and inefficient infrastructure will prove to be more costly. When septic systems fail, sewerage and power lines need to be replaced and basic infra-structural maintenance needs to be financed, it will become apparent that the long term costs of additional infrastructure will far outweigh the economic gains experienced during the initial development period. Many communities will then be faced with finding ways to finance these projects. This may result in increased taxes, impact fees or the cutting of other public projects. Regardless, such strain along with a stagnant lower class (which can ultimately result in civil unrest) can be detrimental to the long term security of a nation.

Chapter 2

Smart Growth as a Solution to Urban Sprawl

Urban Sprawl has been an exponentially increasing trend in regional planning for the past few decades. However, the problems caused by this trend are becoming more evident with each passing day. Increased traffic, emissions, fuel consumption, neglected infra-structure and global warming are all bi-products of urban sprawl. These problems are becoming more apparent to the public at large and have finally become such a nuisance that the solutions to such problems are one of the highest priorities among planning commissions across the country. The outcry for a solution to the urban sprawl problem has sparked the newest trend in urban & regional planning today. This trend in planning is known as "Smart Growth".

According to the Sierra Club, smart growth is the intelligent, well planned development that channels growth into existing areas, provides transportation choices and preserves farm land and open space.(34) The Sierra Club believes that through better planning, smart growth reduces dependence upon cars and alleviates congestion, thus

reducing the sprawl-created burdens to our budgets and our environment.(34) The ultimate goal of smart growth will be to design neighborhoods that are closer to jobs, shopping and transit to reduce car dependant transportation, travel time and vehicle miles traveled (VMT). The implementation of smart growth initiatives will also greatly reduce emissions that contribute to global warming and induce a more economically efficient society.

According to the Smart Growth Network, for smart growth to be effectively implemented it must abide by the following principles:

- Create a Range of Housing Opportunities and Choices
- Create Walkable Neighborhoods
- Encourage Community and Stakeholder Collaboration
- Foster Distinctive, Attractive Communities with a Strong Sense of Place
- Make Development Decisions Predictable, Fair and Cost Effective
- Mixed Land Uses
- Preserve Open Space, Farmland, Natural Beauty and Critical Environmental Areas
- Provide a Variety of Transportation Choices

-Strengthen and Direct Development Towards Existing
Communities(42)

Each of these principles should be considered by a planning board when implementing the use of smart growth initiatives in order for smart growth to be effective. However, different communities may have to place more emphasis on certain principles based on their uniqueness. Planning boards must pursue a comprehensive master plan that entails a well rounded approach to applying smart growth principles.

The Link Between Smart Growth & National Security

Sprawling development is directly responsible for our nation's excessive fuel consumption, increased foreign fuel reliance and the encroachment of sprawling development on domestic military installations. Further, the impacts of global warming and social decline could compromise such national security measures as maintaining the resilience of critical infrastructure, economic strength and the implementation of strong civil defense and preparation measures. However, implementation of smart growth initiatives will not only slow the pace of sprawling development, but it will also alleviate the pressures urban sprawl is placing on national security concerns.

Smart Growth & Foreign Fuel Reliance

Currently, our excessive need for foreign oil is forcing diplomatic compromises with regimes hostile to American interests, forcing business relationships with those anti-

democratic entities, forcing our economy to be dependent on international & foreign events (ex. terrorist attacks, armed conflicts, natural disasters, etc.) and placing our country at a strategic disadvantage in the event of a fuel shortage. However, smart growth initiatives seek to reduce the amount of foreign fuel needed in order for a community and economy to be sustainable.

According to the Sierra Club, placing new development within already built areas reduces VMT by as much as 61%. (34) Further, planning pedestrian friendly development along with good transit systems would save the average household over \$2,000 a year on transportation costs.(34) This reduction in VMT's and transportation cost would result in a direct reduction in fuel usage, thus alleviating the need for foreign fossil fuel. This will enhance national security measures by providing a step towards U.S. energy dependence, providing a strategic and diplomatic upper hand when dealing with hostile regimes and a more independent economy.

Smart Growth & Urban Encroachment on Military Installations

Maintaining a strong effective military is a vital part of national security.(30) As research has indicated, sprawling development is drastically restricting the military's ability to train and conduct vital operations. Sprawling development will only continue to hinder our military's ability to operate if it is not stopped.

According to the Sierra Club, if 25 million units of new housing built in the U.S. over the next twenty-five years

are placed in a more efficient way, 3 million acres of land would be preserved. (34) The use of this smart growth initiative will stem the urban encroachment military installations are currently experiencing. This will further serve to preserve green space which can be used for secret and strategic military installations, provide a green space buffer zone between civilian development and military installations and provide the necessary green space for military operations to be conducted without civilian interference.

Smart Growth & Global Warming

"While the public and the political communities assume that the healthcare systems are adequately preparing for terrorism incidents that would generate catastrophic loads, the medical community is struggling just to maintain its everyday capacity."

-Dan Hanfling MD (Making Healthcare Preparedness Part of the Homeland Security Equation)(15)

Though the concept of global warming and the impacts associated with global warming are controversial, the potential of harm from such impacts could be severe. As evidenced by the above statement, any increase in climate change related illness or illness resulting from an increase in pollution could further strain a system already under pressure. Further, impacts from global warming could also strain our nation's economy by altering crop and water supplies. This could place the United States at a serious strategic disadvantage in the event of a natural disaster or terrorist attack.

Despite arguments in the scientific community surrounding the validity of global warming, the implementation of smart growth initiatives would be a wise precautionary measure in reducing any risks associated with a possible climate change. According to the Sierra Club, the benefits of smart growth are essential in protecting our country's economic and ecological future. Studies conducted by the Sierra Club list the following benefits of Smart Growth:

- Placing new development within already built areas reduces VMT by as much as 61% and CO2 emissions by 50%.
- Planning pedestrian friendly development along with good transit systems would save the average household over \$2,000 a year on transportation and save 40 million tons of carbon emissions.
- If 25 million units of new housing built in the U.S. over the next twenty-five years are placed in a more efficient way, 3 million acres of land would be preserved, 3,00 fewer miles of state roads would be needed, and at least \$250 billion would be saved.
- In another 50 years, implementing smart growth measures would save 200 million metric tons of carbon emissions per year.
- Design improvements to homes can result in at least 30% greater energy efficiency in heating, cooling, and water heating.(34)

The benefits from the implementation of smart growth initiatives will serve to enhance our national security system by reducing the risk of climate change and climate change related illnesses, reducing the risk of straining our healthcare system from climate change related illness, reducing the risk of damaging water and crop supplies resulting from climate change and pollution, and reducing the strategic and economic disadvantage such a natural resource loss would create during the event of a natural disaster or terrorist attack.

Smart Growth & Social Decline

The resilience of a nation's critical infrastructure is an important aspect of national security. Sprawling development is not only increasing the costs of infrastructure maintenance, but it is also contributing to the decay of existing infrastructure.

A report by the U.S. Office of Technology Assessment (OTA) found that it cost a western city \$10,000 more to provide lower density suburban development than to a more compact urban neighborhood. (25) Similarly, the Urban Land Institute (ULI) found that infrastructure costs per housing unit drop dramatically as density increases. (25) The combined cost of utilities, schools, and streets falls from \$90,000 for one dwelling sited on four acres to just over \$10,000 per unit for development of 30 units per acre. (25) This will not only serve to strengthen and develop existing infrastructure, but will allow for the proper funding of education, public safety and economic development.

In addition to strengthened infrastructure resulting from the implementation of smart growth initiatives, other national security concerns surrounding social decline will also be alleviated. These initiatives will serve to decentralize poverty, prevent the political ramifications associated with widespread poverty, combat blighted environments in which crime tends to prosper and provide necessary educational funding to allow students to compete internationally.

Other Smart Growth Benefits to National Security

In addition to the solutions that smart growth initiatives provide for urban sprawl related security issues, there are also other benefits that these initiatives will provide to U.S. security. One such benefit would result from providing a variety of transportation choices. This smart growth initiative would not only provide a multi-modal approach to citizen evacuations in the event of a disaster, terrorist attack or a foreign attack, but it would also provide a multi-modal approach for both military and law enforcement officials to deploy in the event of such a disaster. Further, the provision of multi-modal transportation options provides a strategic advantage by diversifying transportation options that military and law enforcement officials can utilize to engage threats.

Another benefit smart growth initiatives may provide to the overall security of the U.S. consists of fostering healthy

lifestyles through the establishment of walkable neighborhoods. According to a 2003 report by the University of Maryland's National Center for Smart Growth Research and Education, residents of sprawling cities and counties tended to weigh more, walk less, and have higher blood pressure than did people living in compact communities.(16) Further, in another study, health psychologist James Sallis of San Diego State University and his colleagues reported that residents of "high-walkability" neighborhoods, which have closely packed residences and a mix of housing and businesses, tended to walk more and were less likely to be obese than residents of low-walkability neighborhoods.(16) Therefore, it appears if smart growth initiatives were to be instituted on a large scale not only would the overall health of the U.S. increase, but the strains on our current healthcare system may decrease.

Chapter 3

Ways to Institute Smart Growth Initiatives

In order for Smart Growth to be effective, communities must recognize the importance and value of modifying the way they grow. (35) Since the end of World War II, our country has grown accustomed to outward development. Further, outward growth has proven to be very profitable to private developers (especially in the short term). Attempting to convince such developers to engage in a new way of doing business will be difficult at best. However, once communities begin to absorb the long term costs of sprawling development along with the detrimental quality of life issues caused by such development, it will be apparent that seeking a new way of doing business will no longer be an option.

Currently, the Smart Growth Network has constructed a policy implementation manual to put smart growth principles into action and change the way communities function.(35) This manual addresses the economic, community and environmental benefits of adopting smart growth principles and provides methods to allow local governments, lenders, community groups, zoning officials, developers, transit agencies, state governments and others to agree to a new way of doing business.(35)

According to the Smart Growth Network, communities must adopt the principles of using mix land uses, taking advantage of compact building design, creating a range of housing opportunities and choices, creating walk-able communities, fostering distinctive, attractive communities with a strong sense of place, preserving open space, farmland, natural beauty, and critical environmental areas, strengthening and directing development towards existing communities, providing a variety of transportation options, making development decisions predictable, fair and cost effective, and encouraging community and stakeholder collaboration in development decisions in order properly implement smart growth initiatives and combat sprawling development.(35)

The implementation of the above policies will make smart growth initiatives profitable and attractive to profit driven companies. Further, it will discredit any arguments against the implementation of smart growth initiatives due to cost effectiveness issues. If these policies are adopted by state, local and regional planning boards, smart growth initiatives will prove to be profitable and cost effective in the short term and cost saving in the long term.

Conclusion

This paper set to address the connection between smart growth initiatives and national security. Research has shown a strong link between smart growth initiatives and their ability to directly affect such national security issues as foreign fuel reliance and urban military

encroachment. Unfortunately, research has also shown that smart growth initiatives as they are linked to global warming, social decline and national security are not strongly correlated. Further, much of the quantitative data surrounding smart growth initiatives are based on projected benefits mainly touted by smart growth proponents. However, these topics suffer from a severe lack of contemporary research and should not be dismissed. In addition, research has shown that there may be many indirect benefits to national security resulting from the implementation of smart growth initiatives. Some of these benefits may manifest in the form of a healthier better educated populace, a more stable economy, and the ability to diversify our nation's disaster response strategies. Based on the potential benefits resulting from smart growth initiatives, further research on this subject should not only be conducted, but smart growth should be seriously considered as part of the national security equation.

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