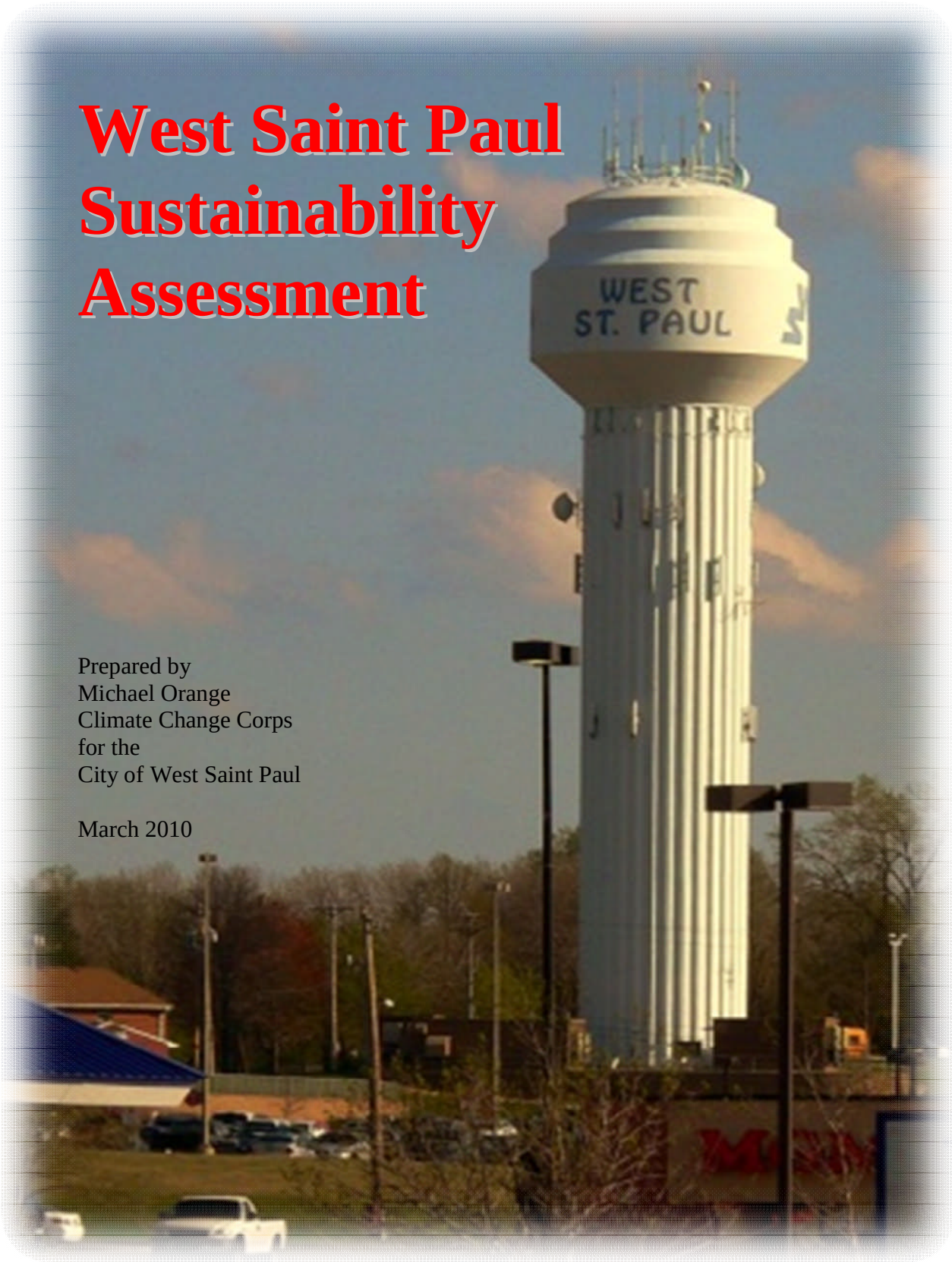
West Saint Paul Sustainability Assessment



Prepared by
Michael Orange
Climate Change Corps
for the
City of West Saint Paul

March 2010

Acknowledgments

Mayor and City Council
John Zanmiller, Mayor
Jim Englin and Aaron VanMoorlehem, Councilpersons for Ward 1
Tony Vitelli and Ed Iago, Councilpersons for Ward 2
Dave Wright and Darlene Lewis, Councilpersons for Ward 3

City Staff Involved in the Study
Sandy Christensen, Finance Director
John Remkus, City Manager
Ben Boike, City Planner/Zoning Administrator
James Hartshorn, Community Development Director

West Saint Paul Municipal Center, 1616 Humboldt Avenue
West Saint Paul, Minnesota, 55118
651-552-4100, www.weststpaul.govoffice.com

Consultant
Michael Orange
Minnesota Pollution Control Agency, Climate Change Corps
651-457-8793, orange_michael@msn.com

Table of Contents

Figures, Resources, and Attachments

Executive Summary

One of the objectives in the City of West Saint Paul's draft *2008 Comprehensive Plan Update* (Comp Plan, p. 30) calls on the City to: "Encourage sustainable development and best management practices to protect the environment for future generations." City staff asked a member of the Minnesota Pollution Control Agency's Climate Change Corps to provide comments and suggestions on how the City might improve key City documents in terms of sustainability principles in the hope that this, in turn, will enable the City to become more sustainable.

The City's Comprehensive Plan, Zoning Code, and other relevant documents have been good tools that helped City leaders make West Saint Paul a safe, affordable, thriving community with beautiful neighborhoods, a successful business and industrial sector, and stable institutions while preserving its substantial natural resources. It's a city that works, but it can work even better. The purpose of this sustainability assessment (Assessment) is to build on this good work using a viewpoint that might not have been employed before—one that deals with the effects of two key global risk factors—an altered climate and energy insecurity due to the imminent peak oil crisis.

This Assessment summarizes key elements of sustainability including a definition and the concepts of the Precautionary Principle, the commons, environmental externalities, and the importance of local self-reliance. It briefly describes the climate change and peak oil issues in order to stress both the environmental and economic urgency of planning for these twin crises.

Before discussing the specifics of the City documents, the Assessment provides a sustainability vision of the City at some future date sufficiently distant so as not to be constrained by current regulatory or economic constraints but influenced primarily by climate change and energy insecurity. This future vision favors well-located urban areas like West Saint Paul over sprawled suburbs and can help guide City development in the meantime.

The Assessment includes comments on the pertinent City documents and recommends numerous Action Steps, which also provide an easy method to quickly review the heart of the report's recommendations.

Fortunately, everything the City needs to prepare for climate change and energy insecurity are well known and have been tested for up to three decades in communities throughout the country that are similar to West Saint Paul. This Assessment and its Resources section at the end reference numerous programs that contain detailed guidance for implementation including lists of sites that offer model ordinances on many of the topics discussed herein.

Simply put, it is critically important for the City to assess its vulnerabilities in the face of energy and climate uncertainty and to seriously plan for this drastically different future.

This Assessment is the sole work of Consultant, with the important help of the above-listed City staff. The City and the MPCA are under no obligation to agree with, accept, or implement any of the comments, suggestions, or the Action Steps included herein.

1.0. Introduction and Goal of the Study

In the spring of 2009, staff from the City of West Saint Paul (City) requested that the Climate Change Corps, sponsored by the Minnesota Pollution Control Agency (MPCA), evaluate the City's key planning and development enforcement documents regarding their sustainability. The members of the Climate Change Corps are semi-retired professionals with expertise in sustainability who provide free services intended to improve the sustainability of local governments. MPCA staff assigned Michael Orange (Consultant) to the project, entitled the "West Saint Paul Sustainability Assessment" (Assessment). The Consultant provided the first draft of the Assessment to City staff on 8/13/09 and incorporated the changes suggested by staff into this revised version.

The Consultant reviewed the following documents for the Assessment:

- Draft *2008 Comprehensive Plan Update* (Comp Plan)
- *A Strategy for South Robert Street's Renaissance Redevelopment Design Framework*, 2000 (Renaissance Plan)
- Appendix I of the City Code: *West Saint Paul Zoning Ordinance*
- *Capital Improvement Plan 2010-2014*
- Section 730 of the City Code: *Stormwater Drainage Utility*

This Assessment provides comments and suggestions on how the City might improve key City documents in terms of sustainability principles in the hope that this, in turn, will enable the City to become more sustainable.

This Assessment is the sole work of Consultant, with the important help of the above-listed City staff. The City and the MPCA are under no obligation to agree with, accept, or implement any of the comments, suggestions, or the Action Steps included herein.

2.0. Sustainability and Global Risk Factors

One of the objectives in the City's Comp Plan (p. 30) calls on the City to: "Encourage sustainable development and best management practices to protect the environment for future generations." The following subsections summarize matters that are crucial to a more sustainable future for West Saint Paul.

2.1. Sustainability Factors

It's appropriate to first define terms. Perhaps the oldest definition of sustainability is still the best: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."[1] A central principle of sustainability is the recognition of the interdependence of environmental, economic, and social equity concerns, known as the "three Es." They are

[1] *World Commission on Environment and Development. Our Common Future*. (Oxford, Great Britain: Oxford University Press, 1987). (Frequently referred to as the Brundtland report after Gro Harlem Brundtland, Chairman of the Commission).

often referred to as three legs of a stool—lacking just one means the stool will not stand; emphasizing one over the other puts us on uneven ground."[2]

- **The Precautionary Principle:** *The Wingspread Statement on the Precautionary Principle*, (1998) defines the Precautionary Principle as follows: "When an activity raises threats of harm to the environment or human health, precautionary measures should be taken, even if some cause and effect relationships are not fully established scientifically." Key elements of the Precautionary Principle include implementing preventative measures in the face of scientific uncertainty, exploring alternatives to possibly harmful actions, placing the burden of proof on the proponents of an activity rather than on the potential victims of the activity, and using democratic processes to enforce the principle, including the right to informed consent. The Principle is still valid.

- **The Commons:** At the heart of any public action should be the commitment to protect that which is held in common by the public from exploitation, abuse, and degradation. Our well-being is enhanced when the commons is used to maximize opportunities for everyone, and degraded when the commons is used to maximize profits or opportunities for a few, or to maximize only a few opportunities. For example, polluting the commons is not a right. A purpose of this Assessment is to reduce pollution and reassert our collective stewardship.

- **Environmental externalities:** The way we measure our economic performance has global implications. Consider the most basic measure of our nation's economic performance, the gross nation product (GNP). In calculating GNP, use of a natural resource does not depreciate it. Our methods account for the depreciation of buildings, machinery, and vehicles on the expense side of the ledger, but not the deterioration from pollution of the environment and our bodies. The more we pollute and spend to clean it up, the higher our GNP. For example, the efforts to clean up the infamous Exxon Valdez spill in Prince William Sound in 1989 actually increased our GNP measurement.

  Substantive change will include acceptance of the principles of full-cost accounting and life-cycle costing, both at alll levels of government. These principles account for the waste, pollution, and environmental impacts of all phases of production, service, transportation, distribution, and waste management.

- **Importance of local self-reliance:** As a counterweight to the ever-increasing pressure for globalization grows the notion of localism. A thorough understanding of globalism should take into account the devastating impact on the environment from all of the energy consumed and pollution generated in shipping goods halfway across the world. It should consider the economic and sociological impacts of outsourcing, job loss, the increased relocation of people, and the long-term effects on families that lack the security of reliable employment and a stable

[2] *What is Sustainable Development? Environment, Economy and Equity: Three Legs of Sustainable Development*. Website of City of Austin, Texas. http://www.ci.austin.tx.us/sustainable/sustdev.htm.

community. In addition, it should calculate the effect on wages and the quality of life when global competition drives wages, working conditions, and environmental protections down to the lowest bidder**.**

At the heart of the concept of local self-reliance is the simple idea that the smartest solutions to most of our needs—material, economic, cultural, psychological—lie close to home. New information technologies make it more possible to stay in one place without being cut off from the global marketplace. Improvements in the scrap and recycling industries provide a chance for communities to be less dependent on raw materials purchased from faraway suppliers. Steady advances in wind, solar, geothermal, and biogenic power make local energy sources a more feasible and cost-effective idea. Moreover, breakthroughs in the manufacture of materials may mean that eco-friendly products fabricated from locally grown vegetation may reduce imports of gasoline, chemicals, paper, and plastic. Dollars spent on goods and services produced and sold locally circulate and grow in the local economy instead of being exported for distant purchases.

2.2. Global Risk Factors: The Twin Crises of Climate Change and Energy Insecurity

There's another Hurricane Katrina coming called global climate change, and it's coming to West Saint Paul. Hyperbole? Not really if you consider long-term effects. Environmentalist and author, Bill McKibben, describes our future as if we are caught in a vise between the two closing jaws of climate change and energy insecurity due to peak oil. Perhaps the U.S. Congress is finally poised now to address the issue of global climate change and how to both mitigate and adapt to the transformational effects it portends. However, few people are prepared for the equally great challenge of energy insecurity.

Cities are the homes for the majority of our population and the seats of government closest to the people—the communities most interested in developments that foster local self-reliance. It's the municipal level of government that has the most authority over the two matters that can have the greatest potential to reduce greenhouse gas emissions and oil consumption; namely, land use and transportation. This is where the rubber meets the road when it comes to affecting change. Local governments are first responders, and Katrina taught us that upper levels of government can be completely ineffectual by comparison. At this time, probably no city or county in Minnesota has adequately assessed its vulnerabilities and only a few have begun to face energy and climate uncertainty and to seriously plan for our drastically different future.

According to Daniel Lerch, author of the book, *Post Carbon Cities: Planning for Energy and Climate Uncertainty*, "Never before have so many people been so dependent on faraway places for basic needs like food and fuel. At the same time, the very thing that has made this unprecedented global urbanization possible—our voracious consumption of oil and natural gas—has also given rise to peak oil and global warming, two enormous problems which threaten to wreak havoc with our globalized urban world if we don't address them quickly and forcefully.… The transition is not a choice, however. The new

urban age of energy and climate uncertainty has already begun, and your city has a window of opportunity to prepare for its challenges now."[3]

- **Mitigating and adapting to climate change makes ethical and economic sense:** McKibben summarized the urgency of the matter in a more recent article published in the *Energy Bulletin*, "Every major scientific body in the world has produced reports confirming the peril [of global climate change]. All 15 of the warmest years on record have come in the two decades that have passed since 1989. In the meantime, the Earth's major natural systems have all shown undeniable signs of rapid flux: melting Arctic and glacial ice, rapidly acidifying seawater, and so on."[4]

  According to the world's premier authority on global climate change, the Intergovernmental Panel on Climate Change (IPCC), "Tens of millions of Americans are likely to be exposed to greater risks for injury, disease, and mortality due to higher pollution levels, more frequent and more intense heat waves, more intense storms, elevated pollen levels and better conditions for the spread of water- and insect-borne diseases, in the absence of effective counter measures."[5] [6]

  The IPCC has concluded that, worldwide, an 80% reduction from 1990 levels of greenhouse gas emissions will be necessary to stabilize the climate. Sustainability planning to slow the onslaught of global climate change still has an altruistic aspect—we should do the right thing. Implementing sustainability measures will also save us energy so it also makes financial sense. Eventually, upper levels of government will take actions that will discourage the age-old practice of using the atmosphere as a dump for our waste carbon and will mandate, among other measures, a carbon tax or a cap-and-trade system that will reduce the public subsidy for energy and raise prices.[7] [8] Eventually, carbon regulations and peak oil

[3] Daniel Lerch, *Post Carbon Cities: Planning for Energy and Climate Uncertainty*, 2007, pp. 59-60.
[4] Source: http://www.energybulletin.net/node/51735.
[5] Refer to www.IPCC.ch. A look at two diseases tells a story about air pollution: Asthma and allergies strike 1 out of 4 Americans (source: Centers for Disease Control, *Fast Facts A-Z. Vital Health Statistics, 2003*). More than 70% of people with asthma also suffer from allergies (source: National Library of Medicine, *Understanding Allergy and Asthma*, National Institutes of Health). The prevalence of asthma increased 75% from 1980-1994. Asthma rates in children under the age of five have increased more than 160% from 1980-1994 (source: Centers for Disease Control, *Surveillance for Asthma - United States, 1960-1995*, MMWR. 1998; 47 (SS-1)).
[6] According to the Carnegie Institution for Science, humans are adding carbon to the atmosphere faster than in the 1990s. Emissions have been growing at 3.5% per year since 2000, up sharply from the 0.9% per year in the 1990s. The largest factor in this increase is the widespread adoption of coal as an energy source. Source: *Pioneer Press*, 2/15/09.
[7] The US military and intelligence communities are assessing the threat of climate change: "The changing global climate will pose profound strategic challenges to the United States in coming decades, raising the prospect of military intervention to deal with the effects of violent storms, drought, mass migration and pandemics, military and intelligence analysts say. Such climate-induced crises could topple governments, feed terrorist movements or destabilize entire regions, say the analysts, experts at the Pentagon and intelligence agencies who for the first time are taking a serious look at the national security implications of climate change. … Much of the public and political debate on global warming has focused on finding substitutes for fossil fuels, reducing emissions that contribute to greenhouse gases and furthering negotiations toward an international climate treat—not potential security challenges. But a growing number of policy makers say that the world's rising temperatures, surging seas and melting glaciers are a direct threat to the national interest. If the United States does not

factors will begin to ratchet prices upwards significantly and inexorably. This will make an even more compelling economic case for sustainability planning and implementation and it will shorten the payback periods for energy efficiency measures.

It's reasonable to assume that governments, especially the federal government, could have a mitigating effect on energy prices provided they take aggressive action to reduce fossil fuel use.

- **Energy insecurity:** Peak oil refers to the point at which total global oil production cannot grow any further and begins to decline, an event that an increasing number of petroleum experts predict happening by 2012, if it hasn't happened already (refer to Figure 1 below). The crisis occurs because demand continues to increase exponentially, especially as the standards of living increase in countries like India and China, and the supply lines are increasingly vulnerable to disruption due to armed conflict. As we move into an era of oil depletion and energy constraint, everything from transportation to medicine, to food and to even climate change response strategies will be affected because almost everything we do is dependent on oil.

  Peak oil effects will first appear as prices become increasingly volatile and progressively higher and there are longer-term fuel supply interruptions. Eventually, we will have to replace our addiction to oil with drastically reduced demand and nearly complete substitution with sustainable alternatives.

  The following is from the 2005 analysis, "Energy Trends and Their Implications for U.S. Army Installations" by the Army Corps of Engineers:

  > "The oil market will remain fairly stable in the very near term, but with steadily increasing prices as world production approaches its peak. The doubling of oil prices from 2003-2005 is not an anomaly, but a picture of the future. Oil production is approaching its peak; low growth in availability can be expected for the next 5 to 10 years. As worldwide petroleum production peaks, geopolitics and market economics will cause even more significant price increases and security risks. One can only speculate at the outcome from this scenario as world petroleum production declines. The disruption of world oil markets may also affect world natural

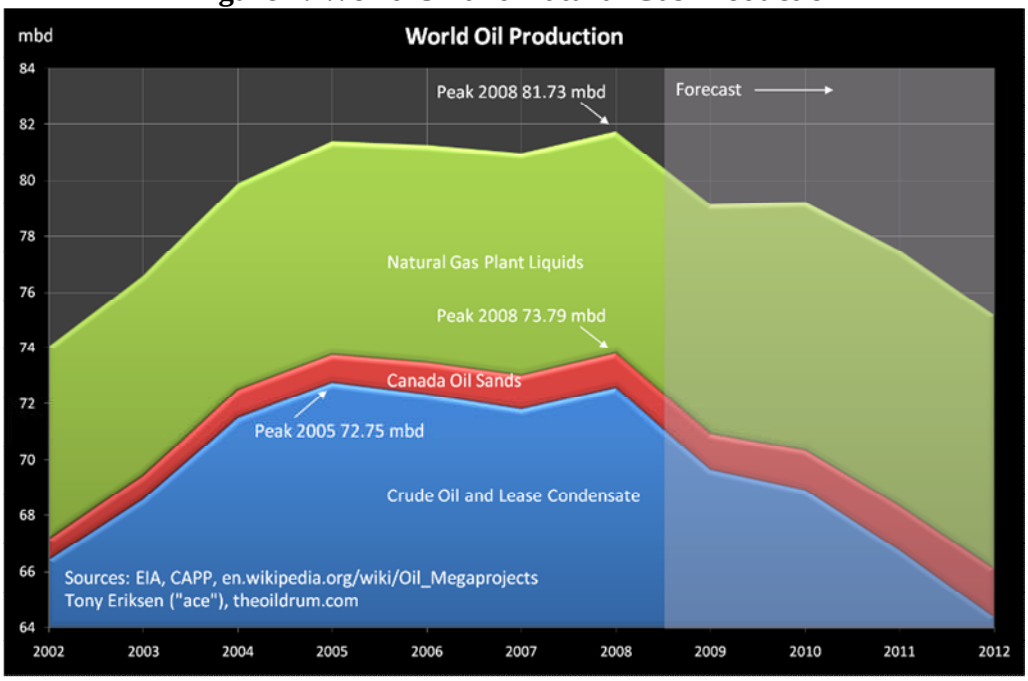
---

lead the world in reducing fossil-fuel consumption and thus emissions of global warming gases, proponents of this view say, a series of global environmental, social, political and possibly military crises loom that the nation will urgently have to address. ... The National Intelligence Council, which produces government-wide intelligence analyses, finished the first assessment of the national security implications of climate change just last year. It concluded that climate change by itself would have significant geopolitical impacts around the world and would contribute to a host of problems, including poverty, environmental degradation and the weakening of national governments." "Climate Change Seen as Threat to U.S. Security," John M. Broder, *New York Times*, 8/9/09.

[8] Unfortunately for the environment, current federal cap-and-trade legislation incorporates such an inexpensive penalty for carbon pollution that it will not stimulate a significant change in energy conservation behavior.

gas markets since most of the natural gas reserves are co-located with the oil reserves."[9]

Figure 1: World Oil and Natural Gas Production



Last November, the British newspaper, *The Guardian*, published an article that added more light on the peak oil issue. The article refers to the oil production predictions by the International Energy Agency,[10] and how the agency has over-predicted the availability of new oil finds and production capabilities:[11]

> The world is much closer to running out of oil than official estimates admit, according to a whistleblower at the International Energy Agency. . . . The senior official claims the US has played an influential role in encouraging the watchdog to underplay the rate of decline from existing oil fields while overplaying the chances of finding new reserves.
>
> Now the "peak oil" theory is gaining support at the heart of the global energy establishment. "The IEA in 2005 was predicting oil supplies could rise as high as 120 m barrels a day by 2030 although it was forced to reduce this gradually to 116 m and then 105 m last year," said the IEA source, who was unwilling to be identified for fear of reprisals inside the

[9] *Post Carbon Cities: Planning for Energy and Climate Uncertainty, a Guidebook on Peak Oil and Global Warming for Governments*, Daniel Lerch, Post Carbon Institute, 2007, p. 7. http://postcarboncities.net/

[10] The International Energy Agency (IEA) is an intergovernmental organization, which acts as energy policy advisor to 28 member countries in their effort to ensure reliable, affordable, and clean energy for their citizens. Refer to: http://www.iea.org/about/index.asp.

[11] Source: http://www.guardian.co.uk/environment/2009/nov/09/peak-oil-international-energy-agency.

> industry. "The 120 m figure always was nonsense but even today's number is much higher than can be justified and the IEA knows this."
>
> "Many inside the organisation believe that maintaining oil supplies at even 90 m to 95 m barrels a day would be impossible but there are fears that panic could spread on the financial markets if the figures were brought down further. And the Americans fear the end of oil supremacy because it would threaten their power over access to oil resources," he added. . . .
>
> A second senior IEA source, who has now left but was also unwilling to give his name, said a key rule at the organisation was that it was "imperative not to anger the Americans" but the fact was that there was not as much oil in the world as had been admitted. "We have [already] entered the 'peak oil' zone. I think that the situation is really bad," he added.

2.3. The Future for the Upper Midwest and West Saint Paul

Unlike so many other areas of the country (not to mention the rest of the world), the Upper Midwest and especially Minnesota is rich in the substance that will become increasingly valuable, clean fresh water.[12] We may be less affected by climate change because our northern Continental climate may be relatively better able to handle more warmth and destabilization. Our extensive mineral, farming, and renewable energy resources will enable our relatively sparse population to become more self-reliant and less dependent on a globalized economy. Minnesota has traditionally outperformed the nation in quality of life indicators dealing with the economy, education, good government, environmental progressiveness, etc. This attractiveness will translate into the potential for increased population growth from in-migration and increased valuation for urban land that is better connected geographically and transit-wise to the region's job centers.

Now "fully developed," the question becomes how can West Saint Paul plan to best be fully redeveloped?

- **What this means for West Saint Paul:** As the City looks to its long-range future, a post-peak-oil future with an altered climate, perhaps its single most important aspect is its location. As a first-ring suburb, it's a short drive or bus ride over the 4 miles to downtown St. Paul, one of the region's major employment and cultural centers. On its east and southern borders, limited access highways not yet choked by congestion link the City with the rest of the region. This will be increasingly important as peak oil combines with the inevitable carbon limitations (carbon tax or cap-and-trade limits) to increase gas prices to unprecedented heights.

[12] Imagine the plight of the parts of the country like the Southwest that are totally dependent on there being more snow in the mountains hundreds of miles away to provide additional water and hydropower for the growing population that seems to totally ignore its solar resources.

One of the effects of energy and climate uncertainty will be a recentralization of cities. Cities are inherently more efficient than sprawled communities. Studies show that urban density is inversely related to energy consumption. A city that is twice as dense as a sprawled community, for example, will use half the energy on a per-capita basis. This also means the denser city will be more affordable. Imagine the future fate of a family living in a third-ring suburb that racks up 40 miles of driving a day for long commutes and errands and has to heat and cool the typical large house when energy costs double or triple.

In contrast to sprawled Twin Cities suburbs, West Saint Paul offers a range of housing choices and price points, including a well-maintained supply of multi-family units and modestly sized, affordable homes. This will be increasingly desirable for the future household that will have to devote a much greater percentage of its household income to energy, transportation, and food. Compared to distant suburbs with street systems dominated by cul-de-sacs and choked arterials that are only car-friendly, West Saint Paul's grid system affords greater connectivity for all modes of travel—cars, buses, bicycles, and pedestrians—and all parts of the City are close to the City's healthy commercial spine along Robert Street and to the several neighborhood centers. Experts predict that communities that have a variety of mixed uses (including a range of housing choices, commercial and cultural diversity, and industrial areas), that are well connected, walkable, and are close to job centers and transit corridors will be best able to weather the impending threats posed by energy insecurity and climate change. West Saint Paul has all of these desirable characteristics and there is great potential to improve further on the City's strengths and weaknesses.[13]

West Saint Paul has a "dual" personality. While the northern half of the City is older and urban in character, resembling central city neighborhoods of the same era, the southern half has a suburban character. Since future energy and climate uncertainty described above favors centralized urban over sprawled suburban forms, the City can best compete for its future share of commerce, culture, and population with a focus on enhancing its urban personality. Unfortunately, the City has fallen behind other area suburbs that have already made great strides using New Urbanism principles to redevelop, for example, their former strip commercial areas into high quality, mixed-use city centers.

- **West Saint Paul's sustainable future:** What might visitors see in West Saint Paul in some distant sustainable future? They could see more of what is best here in terms of well-designed, low-to-medium-density residential and commercial uses, mixed-use developments, zero-emission industrial uses, and cultural opportunities. Future markets may make virtually all of the buildings along Robert Street candidates for replacement by new mixed-use developments that will bring new residents, jobs, commerce, public services, and culture together in

[13] Commenting on an old Guindon cartoon where one character tells another, "You don't move to Edina. You achieve it," a lifelong resident of West Saint Paul said it was the same for West Saint Paul 60 years ago growing up here.

a thriving community that is within walking and biking distance from the City's population.

Buildings in West Saint Paul's sustainable future would consume only renewable fuels, some of it generated on rooftop solar collectors and micro-wind-turbines, and most stormwater will be managed on site. From the air it would be a brighter city because roofs and streets will be more reflective (materials that are less reliant on oil will replace asphalt roads, roofs, and shingles) to minimize the urban heat island effect, and a greener city because the urban forest will flourish as it helps to manage stormwater and supply fuel to the City's distributed energy, co-generation plant.

The City's transportation system would be sustainable because it will give all people economical access to jobs, commerce, recreation, culture, goods, and residences utilizing transportation systems that rely on renewable resources and do not create pollution. Visitors would see zero-emission vehicles, electric buses, and efficient co-owned vehicles like HourCars[14] plying a totally connected street and highway system surfaced with pervious paving. A comprehensive alternative system of safe sidewalks and street crossings and bike lanes will link not only with regional recreational destinations but also with the transit nodes and other uses including commercial, social, cultural, and institutional centers.

Future visitors would see healthier people who walk and bike more in cleaner air and eat less but healthier food because more of it will be grown locally (including in their own yard and in community gardens) without the use of petroleum-based fertilizers and pest controls. People will have made good use of the extra time they used to devote to commuting now that congestion has been controlled and they will live closer to where they work, learn, worship, and play.

While this sustainable future is mostly a positive picture from a physical standpoint, especially because of the City's location and physical layout, there would be other things to observe even if they are less visible. People would be less wealthy because, without public subsidies and externalized costs, they will have to pay the full economic and environmental costs of their consumption of energy-, carbon-, and transportation-intensive commodities such as gasoline, heating and cooling fuels, globally produced products, and food. The sustainable economic future will result in less economic injustice (a narrowing of the income gap), less conspicuous consumption, and more progressive taxation and increased need for public services.

- **The tools are available; just add commitment:** Fortunately, everything the City needs to prepare for energy and climate uncertainty described above is well known and has been tested for up to three decades in communities throughout the country that are similar to West Saint Paul. This Assessment references numerous programs that contain detailed guidance for implementation, and the Resources

[14] Refer to http://www.hourcar.org/about.

section at the end contains web links. The Resources section also lists sites that offer model ordinances on many of the topics discussed herein.

It is critically important for the City to assess its vulnerabilities in the face of energy and climate uncertainty and to seriously plan for this drastically different future. It makes economic sense in the short, medium, and long term.

3.0. Comments on City Documents

The City's draft *2008 Comprehensive Plan Update* (Comp Plan), Zoning Code, and other relevant documents have been good tools that helped City leaders make West Saint Paul a safe, affordable, thriving community with beautiful neighborhoods, a successful business and industrial sector, and stable institutions while preserving its substantial natural resources. It's a city that works, but it can work even better. The purpose of this Assessment is to build on this good work using a viewpoint that might not have been employed before—crisis planning. The following comments and suggested Action Steps are intended to help the City prepare for an altered climate and the peak oil crisis.

The following subsections refer to appropriate sections of the City's Comp Plan and include sustainability comments on this and other relevant City documents:

3.1. Population and Housing Density

- **Population projections:** Understandably, the Comp Plan accepts the population projections from the Metropolitan Council, which predicts a tiny 8% increase over the next 20 years (from the projected 20,100 in 2010 to 21,700 persons in 2030). However, since energy and climate uncertainty and the resulting urban centralizing influences mentioned above will accelerate the market values of property that is proximate and well connected to major job and cultural centers, the future market for additional residences will support a significantly larger population and increased housing density. The population in that theoretical sustainable future may approach the 33,000-population figure included in the 1963 Comprehensive Plan.

Action Step 1: The City should develop its own population projections using higher figures and then develop the appropriate plans, ordinance changes, and metrics as regards zoning amendments, traffic generation projections, housing and school needs, etc.

- **Increasing housing density:** A strength of the City is its strong share of multi-family housing that is somewhat higher than the region's average for a first-ring suburb. The future trends described above will make multi-family housing a more desirable choice because, compared to low-density, single-family areas, it is more efficient and can be located closer to commercial, job, public service, and cultural and educational centers. The rezoning of portions of Robert Street to accommodate mixed use (medium-density residential and commercial) in the

Gateway North District located north of Butler Ave. was an important step that will enhance the City's future.[15]

The City's adopted redevelopment plan for Robert Street, the Renaissance Plan, addresses this matter:[16]

> "West Saint Paul has a strong opportunity to capture its share of the projected regional population and household growth. Other first-ring suburbs of the Twin Cities have redeveloped parcels for housing and new commercial development that have been very successful. The same can be true for West Saint Paul. Redevelopment offers the creation of new land available for residential development. Providing more land for residential uses benefits the corridor by increasing the population base and commercial market, creating a more diverse and vital environment, and providing more life-cycle housing choices. New building typologies, such as mixed-use senior's housing and retail complexes, live/work units and multifamily townhomes should be encouraged in order to tap the market demands, which are reflecting changing demographic trends and diverse incomes. In 1995, households comprised of married couples with children accounted for only 25 percent of total households in the United States. In the 1980s and 1990s, household types have diversified, due to an increase in childless couples; more divorces, resulting in a higher proportion of single-parent households; and cohabitating individuals. By 2010, as the baby boom generation ages, it is estimated that one-third of total households will be empty nesters. In addition, Generation X is postponing childbearing into their 30s. These trends have increased the need for housing alternatives to the traditional single-family home."

The City must face the "D" word—density— head on.[17] Redevelopment cannot happen without it. The methods for suburbs to increase density are well known since they were first articulated in the late 1980s as New Urbanism (refer to References section at the end of the Assessment for links to the New Urbanism principles). Residential densities of at least 8 dwelling units per acre are generally needed for transit and transit-oriented developments to be economically viable.[18] The Comp Plan, however, "provides for approximately 280 new housing units to be constructed on land currently slated for redevelopment as well as other undeveloped land in West Saint Paul. It is estimated that this will occur at an

[15] According to the Comp Plan (p. 46), the District is intended to have a 50:50 mix of commercial and residential development.
[16] *A Strategy for South Robert Street's Renaissance Redevelopment Design Framework*, p. V-4.
[17] Steven Belmont states in his study, "The Truth about Smart Growth" that "High densities foster all the urban virtues admired by urbanites; they underlie the 'exuberant diversity' described by Jane Jacobs in *The Death and Life of Great American Cities*. . . . High urban densities sustain commercial diversity, suppress crime, accommodate tranquil streets, correlate with affluence, and generate little vehicular traffic." Density can support a multi-modal transportation system that offers choices for people.
[18] The Neighborhood Development component of the Leadership in Energy and Environmental Design (LEED) Program has a prerequisite of 12 dwelling units per acre for communities with regular transit service to qualify for certification.

average gross residential density of about 6 units per acre" (p. 47). This is not an adequate level of density for future developments and it does not fully reflect the future housing needs for the City's burgeoning senior population.[19] (The Resources section at the end of the Assessment includes a listing of the model ordinances that are available to help the City plan for and implement higher density redevelopments.)

Action Step 2: The City should amend its Zoning Code to shrink setback requirements and minimum lot areas; increase allowable floor area ratios; allow live-work units; and encourage more affordable housing in the form of duplexes, medium-density residential (especially for seniors), and accessory dwellings (such as "mother-in-law" apartments).

With only 32 acres of undeveloped land available in the City in mostly scattered single plots of land, there is not much additional land with which to expand the population and absorb the City's appropriate share of the region's long-range population growth.[20] The City's Comp Plan recognizes the need for increased density. On page 38 it states, "Encourage land use development that supports transit, such as concentration of higher density development along transit routes."

Action Step 3: The City should up-zone appropriate areas for multi-family residential or adopt an overlay district zone for these areas that would allow limited multi-family developments on individual sites using the conditional use permit process to control any adverse off-site effects. For consideration should be those residential areas located within walking distance (1/4 mile) of Robert Street, the neighborhood commercial centers, industrial uses, and areas within walking distance of transit routes.

- **Affordable housing:** The City has done a lot to provide affordable housing (refer to Comp Plan pages 48-49). The American Planning Association (APA) recommends an additional approach to make housing more affordable. In its report, "Land-Use Incentives for Affordable Housing, Community Design, and Open Space Dedication,"[21] the APA recommends local governments grant density bonuses of at least 25% (plus additional incentives or equivalent financial incentives) to developers of affordable housing.

  A related model statute described in the AIA report also authorizes development incentives for increased nonresidential floor area for provision of "public benefit amenities" (e.g., plazas, parks, and open space; access to transit stations; overhead weather protection and street arcades).[22] The article states that a public benefit amenity may also include provision of affordable housing as part of a nonresidential development, in which case a density bonus is appropriate. A local

[19] The Comp Plan states that, "Approximately 800 housing units, about 10 percent of the City's total housing, were built prior to 1940. West Saint Paul has a very high proportion of retired persons compared to other suburban areas. The limited vacant land, development costs and market demand will likely produce more senior and attached housing over the years to come."
[20] Although zoned R1, the large Wolter Nursery property, which has been vacant for years, could be rezoned and redeveloped for medium-density residential.
[21] Refer to Section 9-301, http://www.planning.org/growingsmart/summary.htm
[22] Model Smart Growth Codes (p. 3-19) September 15, 2005.

government may also adopt a "uniform incentives ordinance" to address both the provision of affordable housing, the dedication of open space, and the provision of community design amenities consistent with Green Communities principles (refer to the Resources section for additional information).

Action Step 4: The City should encourage the provision of additional affordable housing consistent with the principles outlined in the American Planning Association report, "Land-Use Incentives for Affordable Housing, Community Design, and Open Space Dedication," and Green Communities principles.

3.2. Signal Hills Shopping Center: The most important piece of property for the City's sustainable future, the place that, if redeveloped in a sustainable manner, could reshape the future more than anything other single place, is, of course, the Signal Hills Shopping Center property. A mixed-use development that includes medium-density housing behind and above commercial along Robert Street and Butler Avenue has tremendous potential. Just such a development was featured as Concept C in the Renaissance Plan (Attachment 1). The best way to maximize the potential for this valuable property is to require redevelopment consistent with the Neighborhood Development component of the Leadership in Energy and Environmental Design (LEED) Program. There should be no substantive barrier to a new development achieving a Gold or Platinum level of certification (refer to Figure 2 in Section 4.2 and the Resources section for additional information regarding LEED).[23]

Action Step 5: Instead of waiting for the current owner to decide to make all or a part of the Signal Hills Shopping Center site available for a development that may or may not be consistent with the City's sustainable future, the City should formally adopt a redevelopment plan for the entire site that should be along the lines of Concept C in the Renaissance Plan. However, none of this extremely valuable real estate should used for single-family instead of multi-family residential. Also, a transit hub and a stormwater management pond are appropriate elements for inclusion in the redevelopment. Development should meet the LEED-ND Gold or Platinum standard.

Adopted plans do shape the future, while the lack of one leaves the future to chance.

3.3. Robert Street and Commercial Areas

It is very encouraging to read that, according to the Comp Plan (p. 26), the City had adopted significant zoning ordinance changes that affect the commercial zones, consistent with the Renaissance Plan, which the City adopted in 2000: "A formal site planning process including stricter design standards was implemented. Reduced setbacks were implemented to encourage redevelopment and implementation of design standards. A new 'Gateway North District' was implemented in the zoning ordinance in 2007 to address mixed use development along the northern portion of the Robert Street corridor. Many of the changes implemented can be seen in the recent developments along Robert

[23] The Robert Street Committee recently discussed the desired redevelopment plan for Signal Hills in accordance with Concept C in the Renaissance Plan; however, according to City staff, the property owner is in no hurry to sell or redevelop.

Street today. As the Robert Street corridor continues to undergo change, it presents both challenges and opportunities for the City. The City should continue to implement the policies and objectives in the Robert Street Renaissance Plan."[24]

Although the following discussion focuses on Robert Street, the principles discussed are generally applicable in the City's other commercial areas as well.

The Comp Plan states (p. 68), "Robert Street is seen more and more as Main Street and less as a thoroughfare," and it includes numerous reinforcements for the plans and policies developed in the Renaissance Plan.[25] This is very important because the Renaissance Plan is a far-reaching, much-needed, and detailed plan that has the potential, if implemented, to transform Robert Street, help grow a population that can support the existing and future commercial and cultural uses, and help make the City into a more livable community that is better prepared to address the future challenges of energy insecurity and climate change. The City should continue to implement all aspects of this excellent plan. Consistent with this recommendation, the City has applied for federal funding ($7 million) for a complete rebuild of Robert Street including landscaped center medians and improved pedestrian facilities.

On closer examination, however, some features of the Renaissance Plan are not being adopted or enforced including the following:

- **Mixed use and excessive commercial zoning:** The market study completed as part of the Renaissance Plan identified an already excessive amount of retail square footage in 2000 along the Corridor relative to future growth (p. VIII-9). In addition, the Comp Plan states that commercial land comprises 9% of the City's total, a figure that is relatively high when compared to other metro communities' average of approximately 5%. Nonetheless, the Proposed Land Use Map in the Comp Plan and the Zoning Map show a virtually unchanged amount of land planned and zoned for commercial use as currently exists.

  Although the Zoning Code appropriately allows multi-family residential as a conditional use in all of the commercial districts (except the B1 Limited Business District), excess commercial zoning can allow the dispersal of commercial uses and hamper efforts to make the City more pedestrian, transit, and bicycle friendly. According to the Comp Plan, there has been a 30% decrease in retail sales between 2003 and 2005 while County sales increased by 15% during the same period. This is an indication of a weakening commercial base. Population growth within the commercial service area is crucial for the economic health of Robert Street. A key strategy for growth, as described in the Renaissance Plan, is

[24] According to City staff, the Robert Street Committee recommended exploring a second mixed-use district similar to what is proposed in the Renaissance Plan for a "Town Center District" which would also include mixed-use and senior housing. The Town Center concept could be expanded to other locations. One outcome or finding related to the Gateway North District is that the permitted uses may be too restrictive.

[25] According to City staff, the City Council has discussed over recent years the identity of Robert Street and whether it functions more as a thoroughfare or as a destination "Main Street." Despite much of its function as a thoroughfare, the Council promotes the perception of Robert Street as a destination.

centralized, mixed residential and commercial uses, much of it two or more stories.

The City followed an important recommendation in the Renaissance Plan to accommodate mixed uses better when it created the new B5 Gateway North Zoning District and rezoned the commercial areas north of Butler to this District. The B5 District encourages mixed-use development and is slightly stricter than a B-3 General Business District. For example, it prohibits businesses that have a drive through area. However, more change is needed because District regulations are not complete as regards the setback, yard, landscaping, pedestrian access, and screening recommendations of the Renaissance Plan.

The new growth came in the form of two major residential developments, one of which is mixed-use with commercial on the first floor.

Action Step 6: The City should study the possibility of rezoning to the B5 Gateway North District all of the commercial north of the Wentworth Ave. area and restrict most of it to a one-block depth, including the Signal Hills Shopping Center site.

- **Building setbacks, entrances, and allowable building materials:** A key element of a pedestrian-friendly streetscape in commercial areas is having buildings close to the street and street-oriented pedestrian access. The Renaissance Plan stressed this as regards the Northern and the Signal Hills districts (p. IX-1): "Place new buildings at a maximum 5-foot setback from the right-of-way line. Corner buildings should also have a maximum 5-foot setback from South Robert Street as well as the side street. Main building entries should face or be clearly visible from South Robert Street." However, the Zoning Code requirements for commercial districts allow up to a 30-foot setback and up to 90 feet in the B4 Shopping Center District, and they are silent as regards entries. Fortunately, the Code prohibits parking in this front yard in all but the B4 Shopping Center District and it now includes detailed requirements as regards allowable building materials and minimum façade fenestration.

Action Step 7: The City should revise its Zoning Code to conform to the building setback, entryway, yard, landscaping, and screening recommendations of the Renaissance Plan.

- **Nonconformities with required setback areas and encroachments on the public right of way** The Zoning Code defines certain building setbacks and front yard requirements for business districts.[26] For example, the Code calls for landscaped front yard setbacks in the B3, B4, and B5 Business Districts, which dominate along Robert Street. Since most older commercial uses along the street have parking, usually right up to the sidewalk (which is not in compliance with the current Code), these uses are nonconforming. Most are probably legal

[26] Refer to the following sections of the Zoning Code: 5.9 (4)(a) and 33.9 (3)(b) Architecture, Landscaping, Lighting, Open Storage.

nonconforming uses because they complied with earlier, less-restrictive regulations. Many of these parking lots allow vehicles to extend over the sidewalk and obstruct the public right-of-way.[27] The slides in Attachment 1, "A Walk on Robert Street—a Pedestrian's View," show the effects of this past and current practice. Slides 9-11 show permanent outdoor storage of tires (in direct violation of the Code,[28]), commercial displays, poorly maintained utility facilities and newspaper boxes, and parking where the Code calls for landscaping.[29] These private encroachments and obstructions make an already undesirable public sidewalk even worse. For new developments on Robert Street near Wentworth Ave., the City approved sidewalk obstructions that further disrupt pedestrian use and make walking more unfriendly and unsafe (refer to Slide 9 in Attachment 2). In recent years, the City approved separate right turn lanes for 3 businesses on Robert Street that further disrupt the pedestrian environment, increase impervious surfaces and street maintenance costs, and shrink the available space for landscaping (Slide 11). It is hard to imagine that these businesses generate sufficient turn-in traffic from Robert Street to warrant these special right-turn lanes.

- **Landscaping, screening, and pedestrian-friendly/un-friendly situations:** Attachment 2 shows recent examples of excellent and modest landscaping plans; all very acceptable. The attachment also shows examples of minimalist "landscaping" comprised primarily of rock, which may be appropriate for the desert (xeriscaping) but not for Minnesota. Unfortunately, the most common form of landscaping along Robert Street is "zero-scaping," none at all, as the slides show.

  The City's Zoning Code has adequate landscaping requirements for new construction that can greatly help in making Robert Street more pedestrian friendly. However, there are no screening requirements for any of the commercial and industrial districts except where they abut residential districts. The Renaissance Plan required screening that consists of a 3-foot-high wall, fence, or vegetation that is at least 90% opaque, it specified six-foot-wide "amenity zones," and it defined other landscape design criteria, which are appropriate to be incorporated into the Zoning Code (p. IX-7). Existing uses are grandfathered in with no compliance requirements at all.

[27] The public right-of-way extends to the outer edge of the sidewalks on Robert Street.

[28] This violates the Zoning Code, Section 33.9 (3): Tires for sale shall not be stored or displayed outside the principal building, except: (A) In a display rack during business hours; or (B) In a permanent outside display container that is completely enclosable and located in conformance with Setback requirements. Such display container shall be closed when the station is not open for business.

[29] Recently, the City allowed a Robert Street business to make a significant investment in landscaping and upgrading of its parking area even though some of the parking extends right up to the curb of the cross street and blocks safe pedestrian movement. Since there is more than ample parking for this business on site, this would have been an opportune time to bring the site into compliance with the Zoning Code.

Action Step 8: In order to make Robert Street a more pedestrian-friendly area, the City should require screening wherever parking is visible from an adjacent public sidewalk, consistent with what is called for in the Renaissance Plan.

Attachment 2 also shows slides of cases, some very recent, where the City has allowed large curb radii at Robert Street intersections. These enable and encourage drivers to make the turns at excessive speeds thereby making matters less safe for pedestrians and future bicyclists.[30] Also noted in the attachment are sidewalks that disappear, again hampering pedestrians. Attachment 2 includes good examples of street-front access to businesses (instead of only via the parking lot) and the excellent pedestrian-safety example of the drive-thru/sidewalk intersection for the new Starbucks Coffee shop. The fact that people are choosing to dine along Robert Street in new, outdoor seating areas is an encouraging development and a portent of the pedestrian-friendly future that is possible.[31]

- **Parking:** Excess parking hampers a pedestrian-friendly community, increases business costs unnecessarily, harms the environment, and reduces the City's potential tax base because it is not the highest and best use of land. The Renaissance Plan recommended increased use of shared parking, shared curb cuts that would make possible a landscaped median on sections of Robert Street, and reduced parking requirements where appropriate. Many cities have parking ceilings and shared parking formulas in their zoning codes to decrease required parking more consistent with actual parking demand. An American Planning Association report states the following: "Shoup (2005) recommends a thorough reexamination of parking standards. He found the Institute of Transportation Engineers parking generation rates to be statistically suspect. Shoup presents convincing evidence that off-street parking requirements distort transportation choices, warp urban form, debase urban design, increase housing costs, burden low-income households, damage the economy, and degrade the environment."[32]

  Typically, retail businesses seek to maximize their parking supply, especially in places like West Saint Paul where land is relatively cheap and property taxes are low. This is especially true for big box developments, which generally design their sites using their peak-day parking stall demand for customers and employees. For the rest of the year, vast areas of empty concrete (with reading-level nighttime lighting) dominate the landscape.

  The best tool to define appropriately sized parking lots is a travel demand management (TDM) plan (the Resources section includes a reference to a model TDM plan ordinance). A TDM plan can account for well-established measures—

[30] The cross streets are not designated bus or truck routes, which may warrant wider curb radii. The reference to "future" bicyclists is because the street is far from bicycle friendly at this time.
[31] Perhaps the factor most contributing to the new outdoor seating is the recently enacted, statewide indoor smoking prohibition.
[32] "We paved paradise," by Katharine Mieszkowski. Published 10/1/07 in Salon: http://www.salon.com/news/feature/2007/10/01/parking/index.html

such as shuttling employees from remote sites on peak shopping days, using pervious paving and over-flow parking areas to minimize stormwater runoff, and predicting transit usage—to estimate a more reasonable parking demand and reduce the size of paved parking lots.

Action Step 9: The City's Zoning Code should require major commercial developers provide a privately financed, travel demand management plan to predict a more reasonable parking demand and reduce the size of paved parking lots.

The City's current minimum parking lot dimensions may have been reasonable as the average American auto/SUV kept getting larger, but future vehicles will be much smaller.

Action Step 10: The City should reduce minimum parking requirements and downsize its dimensional requirements for parking areas to urban standards (e.g. 8 ½' X 18' stalls and aisle and driveway widths of 20'), and add a provision for shared parking.

- **Lighting:** Although the Zoning Code has a strict requirement that prohibits glare and light pollution,[33] examples of bad commercial lighting are, unfortunately, the rule not the exception in the City. Poorly designed lighting not only wastes electricity, it creates an unpleasant and less safe pedestrian environment (refer to the Dark Sky reference listed in the Resource section).

- **Code compliance fund:** It is very difficult for a city to force existing uses to comply with ordinances that were never enforced originally or changed after the use was established. Some cities employ a "fee-bate" process whereby increased business licensing fees finance a loan and grant fund (the "rebate" half of the coined term). The funds can reduce compliance costs for existing businesses. Ultimately, aesthetic improvements help improve the overall business climate and prevent non-complying businesses from tarnishing the reputation of the area.

Action Step 11: The City should consider creating a fee/bate process (for example, as a part of its business license renewal procedures) to assist existing businesses comply with the City's codes and ordinances.

- **Economic impact study for big box developments:** The Renaissance Plan recommends limiting big box developments to the South District located south of Emerson. This is where four of the five current big box developments are located (Menards, Lowe's, Super Target, and Wal-Mart). Big K is in the Signal Hills District (Attachment 2 shows pictures of these stores).[34] The City's Economic

[33] Section 5.9 (4) (e): Lighting levels must not exceed zero foot-candles at the abutting property line. No direct glare may extend onto the public street, public open space or neighboring properties.
[34] The Home Depot is located in Inver Grove Heights a short distance from the City boundary.

Development Department provided major public subsidies to aid the development of two of these big boxes, Super Target and Lowe's.[35]

Big box developments have long sparked great controversy. The study, *A Guide to Retail Impact Studies*, has the following to say about them (refer also to *Big Box Swindle: The True Cost of Mega-Retailers and the Fight for America's Independent Businesses* by Stacy Mitchell):

> "States and municipalities have long evaluated the impact that large retail development projects may have on such things as traffic and the environment. Some are now adopting policies that require that the economic and fiscal impact of these developments be considered as well. These policies typically have two key components: They require that an independent study of the economic and fiscal impact of the retail development be conducted by a qualified analyst selected by the municipality and paid for by a fee assessed to the developer. They establish a standard that the project must meet in order to be approved. The policy may say, for example, that the planning board (or city council or other permitting authority) may approve the development only if it concludes, based on the data provided by the study and other evidence submitted, that the project will not have an undue adverse impact on the community or that the benefits of the development will outweigh the costs. A growing number of cities and towns are incorporating these types of policies into their zoning codes."[36]

Action Step 12: To be more economically sustainable, the City should require a privately financed economic impact study whenever it considers providing a public subsidy of any substantial size for any development.

3.4. Transportation

Sustainability in transportation requires an efficient pattern of land use. In order to be efficient, public transportation requires a certain population density or employment density. The most efficient transportation systems will be supported by particularly intensive development patterns at well-served transit nodes. Close proximity of medium-or-higher-density households and businesses at transit nodes can also support the efficient provision of commercial goods and services and can create opportunities for shared public goods (the commons, e.g. parks, libraries, and other cultural and educational facilities). Density fosters community building among residents and networks of

[35] The City determined the existing Target store and nearby properties were blighted, created a tax increment financing (TIF) district fairly restricted to the store site, and provided $710,000 in TIF funds to the project. For the Lowe's site, the City determined the site was blighted, created a TIF district fairly restricted to the store site, and provided $410,000 in TIF funds to Lowe's for site improvements and soil remediation.

[36] *A Guide to Retail Impact Studies*, February 2008, prepared by Civic Economics, *www.CivicEconomics.com*, for and with the Institute for Local Self-Reliance, www.ILSR.org, http://www.informedgrowthact.com/guide.pdf

communication and services among businesses—all of which increase efficiencies and reduce the consumption of natural resources.

Since land use and transportation are essentially inseparable, the flip sides of the same coin, many of the comments herein regarding housing and commercial uses affect transportation policy. An important strength of the Renaissance Plan was its meticulous attention to streetscape improvements that can calm vehicular traffic and enhance safety and alternative transportation modes. The Comp Plan encouragingly states that (p. 78), "[T]he City of West Saint Paul is in the process of requesting federal money for Robert Street improvements. In accordance with the approved Renaissance Plan, a major component of the potential project would include bicycle/pedestrian improvements along the corridor. The City will work closely with Mn/DOT and Dakota County to maximize all modes of transportation along the corridor."

Action Step 13: The City should apply the principles of New Urbanism, travel demand management, and transit oriented development at every opportunity.

Other important measures include the following:

- **Sidewalk master plan:** City staff are currently working on a sidewalk/path inventory. Once completed, Dakota County is expected to assist in conducting a gap analysis to determine where the greatest need for additional sidewalks and bike paths exists.

  According to City staff, recent surveys indicate that more than 50% of residents don't want sidewalks because of the cost to build them and the effort to maintain them. The City's Special Assessment Policy (Policy) defines how costs for new construction and repairs of public infrastructure (streets, sewers, water supply, etc.) are shared between the City and abutting property owners. For new construction of sewer and water line connections to properties (laterals), for example, the Policy calls for 100% property-owner assessment. This makes sense since these facilities would be built exclusively for the abutting property owners. Similarly, there is a 70% property-owner share for new alleys since they would be primarily used by the property owners, but also serve a public purpose for waste collection and as secondary access routes.

  However, the Policy calls for no City participation in two very important public infrastructure components—new streets and new sidewalks. New streets, for example, on the Signal Hills site when it is redeveloped, would serve a strong public transportation role, provided they are fully integrated into the City's system and not designed as single-use cul-de-sacs. The same is true for sidewalks. While property owners concerns are understandable, sidewalks and street crossings, designed with safety in mind for the walking dependent, are a crucially important part of the public infrastructure—the commons—and should not be subject to the preferences of only those owners whose property would front on new sidewalks. The Policy has a 50/50 share for the cost of replacing sidewalks. This is also an

appropriate ratio for sharing the cost for new construction of streets and sidewalks.

Action Step 14: The City should develop a sidewalk inventory and master plan, and integrate the plan into the City's Capital Improvement Program.[37] The plan's first priority should be to map primary sources of walkers and the walking dependent (e.g. places where youth and seniors live) and likely destinations for the walking dependent (retail areas, schools and churches, community centers and parks, the pool and ice rink, the library, bus stops, clinics, etc.). Phase 1 implementation should require the development of safe sidewalks and street crossings within ¼ mile of primary routes between trip sources and destinations. Phase 2 would include other areas of the City with a minimum population density. The City should amend its Special Assessment Policy to require a 50/50 City/property-owner assessment of the costs of new sidewalks.

- **Child-friendly principles:** To be more pedestrian-friendly and bike-friendly, the City needs to be more child-friendly. The federal Americans with Disabilities Act might serve as a model for making safe, walkable communities so kids can get out of their parents' cars and walk or bike to school and get more fit for life (refer to the Resources section for references).

Action Step 15: The City should encourage the implementation of child-friendly principles in public and commercial places. The City should not allow the residents on a section of a through street to veto planned improvements.

- **Bicycle infrastructure:** The Comp Plan identifies a single, mostly off-road bike path planned for the City and otherwise, has general encouragements for bike infrastructure. While bike paths are important, far more critical is the provision of safe bike lanes marked along all of the safest streets for biking, and sidewalks for biking kids to accommodate all kinds of biking, not just recreational.

Action Step 16: The City should prepare a comprehensive plan and capital improvement program to encourage biking by interconnecting retail, schools, community centers and parks, clinics, the library, etc. with safe bike lanes and sidewalks.

- **Organized solid waste collection:** The Comp Plan suggest that the City may also consider a program to encourage neighborhoods to utilize a single, licensed waste hauler "to minimize overlapping of services." Unorganized waste hauling results in every licensed hauler driving all over the City with unnecessary fuel consumption and pollution, noise, congestion, and cost.

Action Step 17: The City should create an organized solid waste and recyclables collection system.

- **Green fleets and employee commute:** The City must lead by example as regards green transportation (refer to the Minneapolis Downtown TMO in the Resources list for more information).

[37] The City adopted its first Capital Improvement Program in 2009.

Action Step 18: The City should begin the transition of the City fleet to fuel-efficient vehicles and alternative fuels and adopt a travel demand management plan for City employees that encourages the alternatives to single occupant vehicle commutes.

3.5. Stormwater and Urban Forest Management

This subsection combines the topic of the urban forest with stormwater management because the most important contribution of the urban forest is its capability to manage stormwater.

In the City's sustainable future, surface water management requires both prevention and remediation actions. A sustainable West Saint Paul will protect surface waters through the elimination of both point and non-point source pollutants. Discharges should not degrade any receiving water bodies. As with most pollution issues, prevention is always the most cost effective and efficient method. In the case of stormwater, capture and proper treatment of the first inch of a rain event can remove the majority of the pollutants and nutrients. Thus, capture and treatment on-site is the preferred method.

This is consistent with the stormwater management provisions in Section 40 of the Zoning Code, the recently revised Municipal Water Resources Management Plan, and current state policy. The Minnesota Pollution Control Agency's non-degradation policy states that no discharge shall further degrade an already impaired water body. Conventional development contributes to the eutrophication[38] of surface water. However, technology and stewardship should combine to use stormwater to re-charge the ground water system and supplement the community demands for watering of lawns and gardens within the City. Stormwater runoff should be used by businesses, communities, and residents to further the sustainability goals.

While the City's plans and ordinances reflect current state-of-the-art language, ultimately, the sustainable goal is to eliminate all pipes that drain to creeks, the Mississippi, and the City's lakes by managing 100% of stormwater on site. Then only roads would drain to pipes (which should lead to stormwater management ponds). Eventually, pervious paving will eliminate that source as well.

- **Pervious paving (when it rains, it drains):** Porous pavements are as effective as traditional pavements and are attractive on both environmental and economic grounds. In addition to its main benefits—improving groundwater recharge and stormwater management while reducing stormwater costs (porous concrete can drain up to 40 inches per hour)—it reduces the urban heat island effect because it has lower mass, and it is less susceptible to freeze-thaw damage because it will not saturate. While the underlying stone bed is usually more expensive than a conventional compacted sub-base (because it needs to be deeper and more porous,

[38] Eutrophication is an increase in the concentration of chemical nutrients in an ecosystem to an extent that increases the primary productivity of the ecosystem. Subsequent negative environmental effects include anoxia and severe reductions in water quality, fish, and other animal populations.

i.e. more crushed stone), this cost difference is offset by eliminating the need for a stormwater management system. On projects where unit costs have been compared, porous pavement has been the less expensive option.

Action Step 19: The City should change its Zoning Code and its street repaving practices to require porous pavements.

- **Stormwater management:** The Comp Plan states that (p. 34), "Temporary storage areas, retention basins or natural swales scattered throughout developed areas should be encouraged so as to reduce peak flows, erosion damage and construction costs." This and the other stormwater management policies in the plan, the Zoning Code, and the Municipal Water Resources Management Plan are vitally important. The problem is retrofitting the existing system and paying for it. The City maintains 7 ponds that pre-treat stormwater before its discharge into the Mississippi River. One area of concern is the Signal Hills Shopping Center. Stormwater from this entirely impervious area drains directly to Thompson Lake in Thompson Park and degrades the lake's water quality with winter salt use and petroleum products leached from roofs, asphalt paving, and vehicles. Redevelopment of the shopping center must include a stormwater management pond on site that pre-treats 100% of the site's stormwater.

  The City wisely has the necessary tool—a stormwater management utility—that can both encourage more sustainable development and generate funds for additional stormwater management measures.[39] The City has a fee structure to charge all property owners for the public cost to manage sewers. On behalf of the City, the Saint Paul Regional Water Services utility adds the City's management fee onto its water supply bill based on the amount of water used and the type of property.[40] The fee structure allows property owners to apply for a reduced fee provided they prove that the on-site management of the property's stormwater is greater than that assumed in the fee schedule.

  Unfortunately, the fees are so low they only generate funds sufficient to maintain the existing sewer systems, not the improvements the City needs. According to City staff, very few owners have applied for a reduction since the utility was created years ago. This is probably due to the low cost of the fee or to the fact that developers and property owners are unaware of the opportunity to reduce the quarterly fees.

[39] Refer to Section 730 of the City Code: *Stormwater Drainage Utility.*

[40] With the exception of outdoor faucet use, virtually all water supplied ends up in the sanitary sewer system so it is a good surrogate for sanitary sewer usage. To estimate storm sewer usage, the fee schedule includes assumptions regarding typical pervious-to-impervious ratios for various use categories and typical stormwater runoff amounts.

Action Step 20: In order to implement the City's stormwater management measures, it should both increase fees for stormwater not managed on site and step up efforts to publicize how developers and property owners can reduce these fees by more on-site stormwater management. The City could then use the revenues to fund the strategies that move the City to a more sustainable future; namely, to create additional stormwater management ponds, expand and preserve the urban forest, and implement a repaving program that relies on pervious paving.

- **Trees as urban infrastructure:** The City should view its urban forest as infrastructure that is just as important as its streets and sewers. In addition to the stormwater management benefits mentioned above, trees make the following contributions, all of which will become increasingly important in a future dominated by climate change and peak oil effects:

  - Provide shade for air conditioning units and to reduce the urban heat island effect;
  - Shield winter winds;
  - Produce oxygen and sequester carbon;
  - Produce future biomass for heat and power (particularly important considering the peak oil issue, which will dramatically increase the need for bio-energy);
  - Provide aesthetic and traffic calming values; and
  - Increase real estate values.

  Since climate change will expose the urban forest to increased threats from storms, heat stress, and insect infestations, the City must plan for increased maintenance costs. For example, experts state that the recent arrival of the emerald ash borer will make the ash a virtually extinct species in Minnesota.[41]

  For trees in commercial areas, conventional "tree coffins" are designed for failure. However, alternative methods exist. For example, structural soil methods developed at Cornell University allow trees to be planted anywhere because it allows their roots to grow under paved areas without disrupting the pavement as they grow. In a street installation, a trench running continuously and parallel to the curb, 8 ft. wide and 3 ft. deep, would be minimally adequate for a continuous potential rooting zone for continuous tree planting.[42]

Action Step 21: The City should complete a tree inventory, embark on a tree-planting program, and plan for replacement trees for all of the ash trees on public property.

- **Tree preservation in development controls:** While the City's ordinances provide basic control over the design of new developments and major building expansions, the regulations do not take into account best practices for tree

[41] At this time, no peer-reviewed study exists to support the claims of some manufacturers of chemical preventatives and cures that their products can save any species of ash.
[42] Refer to http://www.amereq.com/images/cusoil.pdf.

preservation. The Zoning Code does not fully protect on- and off-site trees from damage by new development. For example, nearby impervious surfaces, compacted soils, and changes in drainage patterns can diminish a tree's necessary supply of water and air and thereby shorten its normal life. Excavation and trenching can compromise a nearby tree's roots such that it loses structural stability, becomes more susceptible to disease, and it dies earlier. Since several years may elapse before the tree succumbs to the damage, the causal linkage is often overlooked.

Action Step 22: The City should amend its Zoning Code to require privately financed tree preservation plans for larger developments that might threaten the loss of substantial on- and off-site trees.

- **Heritage tree program:** Many cities have created heritage tree programs designed to inventory, designate, celebrate, and protect public and private trees because their age, size, type, historical association, or horticultural value are of special importance to the city. West Saint Paul benefits from many large and beautiful trees that warrant special recognition and preservation.

Action Step 23: The City should consider creating a heritage tree program.

4.0. Air Quality, Energy Efficiency, and Sustainable Development

Sustainable air quality in West Saint Paul means that economic and household activities related to heating, cooling, travel, power production, and industrial production would not cause chemical, heat, or particulate pollution of the atmosphere. Clean air would have no significant adverse impacts on the health of humans or the ecosystems of the natural environment.

A sustainable West Saint Paul would not rely on fossil fuels. Instead, it would utilize energy sources that are completely sustainable such as solar, wind, water, biomass, and geothermal energy. Reliance on renewable fuels would drastically reduce pollution and address the problem of global climate change.[43] Deriving our energy from renewable fuels requires living on the energy budget set by the natural supply of these renewable resources. This underscores the importance of energy conservation in municipal operations and improved energy efficiency in City equipment and facilities. These represent the cheapest and easiest first steps in the path to energy sustainability. Beyond the provision of sustainable energy, a sustainable society ensures that affordable energy is available to everyone. It provides opportunity for local, democratic participation in the formulation of energy policy. It favors an energy system that is reliable in times of natural or man-made disruptions because of the multiplicity of small-scale energy sources, storage, and distribution methods.

[43] The Koda Energy plant in Shakopee is an example of a co-generation, biomass facility (refer to http://www.biomassmagazine.com/article.jsp?article_id=2237 and http://www.citypages.com/2008-12-31/news/how-summit-and-schell-are-saving-the-prairies/)

4.1. Municipal Options

Currently, State law restricts local governments from using local ordinances to require new development to exceed the state-adopted International Building Code. Although the Minnesota Code was once considered one of the best in the country, it is now sorely outdated. Building efficiency technology has outstripped it to the point that energy efficiencies that are 50% better than the Minnesota Code are now possible with less than ten-year payback periods.[44] [45] Local governments currently have four options to address building resource efficiency:

- Cities can adopt mandatory standards for new municipal building construction and mandatory re-commissioning requirements for existing facilities over a minimum size.

- State law does not prohibit a municipality from requiring more rigid building efficiency for developments that require the city approval of a permit that is not a "permit of right." Permitted uses, for example, are permits of right while special permits (not "of right") include conditional use permits, variances, planned unit development approvals, site plan review approvals, etc.).[46] In addition, the state preemption does not prevent a city from setting higher standards for developments that seek city resources (e.g. tax increment financing, grants, loan guarantees, tax abatement, condemnation, etc.). There are several comprehensive sets of standards available (for example LEED) and highly refined utility-sponsored programs designed to maximize and subsidize building energy efficiency (refer to the Resources section).[47]

- Cities can promote voluntary design or performance standards that exceed the State Building and Energy Code.

[44] A payback period is the time needed for energy and other savings to pay back the incremental cost of installing the efficiency measure. After the payback period, the savings accrue to the property owner.

[45] In an interview of Dr. Amory Lovins of the Rocky Mountain Institute by *The McKinsey Quarterly*, the writer asked Dr. Lovins, "More broadly, how do you think CEOs should be approaching energy efficiency today?" Lovins replied, "[Decision makers] should think of energy and resource efficiency as a key source of competitive advantage. In my team's latest redesigns for $30 billion worth of facilities in 29 sectors, we consistently found about 30-60% energy savings that could be captured through retrofits, which paid for themselves in two to three years. In new facilities, 40-90% savings could be gleaned—and with nearly always lower capital cost. Moreover, seldom-counted side benefits can be far more valuable than the direct savings. For instance, a typical office pays about 160 times as much for people as for energy, so a 0.6% gain in labor productivity would have the same bottom-line effect as eliminating the energy bill. However, we routinely see not a 0.6 but a 6-16% gain in labor productivity in efficient buildings with better thermal, visual, and acoustic comfort. When people can see what they're doing, hear themselves think, breathe cleaner air, and feel more comfortable, they do more and better work. We also see 40% higher retail sales in well day-lit stores, 20-odd percent faster learning in well day-lit schools, and better clinical outcomes in green and efficient hospitals. These often overlooked side benefits are frequently worth tens or hundreds of times more than the actual reduction in energy costs."

[46] Woodbury's planned unit development ordinance requires LEED design.

[47] For example, Xcel Energy's Design Assistance Program (formerly the Energy Assets Program) results in 30% and greater improvements in building energy efficiency with bundles of measures having only a seven-year payback period.

- A substantial amount of resources are used and waste generated in constructing, redeveloping, and demolishing buildings, and the Minnesota Building Code does not restrict this area. Solid waste management is primarily the responsibility of county and city governments so the City can influence construction and demolition methods to maximize the reduction, reuse, and recycling of construction and demolition materials.[48]

4.2. Sustainable Development: Policy and Ordinance Gaps

- **Sustainable development references in the Comp Plan:** The Comp Plan contains important policy language encouraging sustainable development (p. 54; emphasis added): "The City supports development and redevelopment that is sensitive and has a low impact on the environment.… New developments are encouraged to consider sustainable green building design, conserve valuable energy and environmental resources and protect air and water quality for future generations. The Minnesota Sustainable Design Guide published by the University of Minnesota College of Design and the standards through the US Green Building Council's Leadership in Energy and Environmental Design (LEED) program can help guide the creation of municipal programs that facilitate the community-wide application of sustainable design practices." While the current policy "encourages," the Comp Plan and Zoning Code contain no policies or regulations that would require new private or public developments and major renovations to achieve state-of-the-art sustainable standards.

  The Comp Plan lists on page 84 a variety of provisions that future developments "shall contain" that "culminate in multi-use, walkable, livable communities." The following list is from the Comp Plan. Those provisions that are not clearly required by the Zoning Code are underlined for emphasis:

  - Protected historical resources
  - Solar shading
  - Dark sky lighting
  - Pedestrian oriented to design lots[49]
  - Zone appropriate architecture
  - Green construction
  - Green approaches to water
  - Energy efficiency standards
  - Green common spaces
  - Green approach to yard waste disposal
  - Green infrastructure
  - Green maintenance/repair standards
  - Rain gardens
  - Rain barrels and cisterns

[48] The non-profit ReUse Center, for example, has a deconstruction division with decades of experience.
[49] The meaning of this "provision" is not clear

- Green roofs
- Green approaches to waste water management
- Multimodal transportation opportunities
- Storm water maintenance
- Utility easements

Regarding the above list, even for those provisions not underlined, the City codes do not require compliance beyond what is typical for other suburban communities.

Our buildings are where we consume a great share of our non-renewable resources and they are where we now know how best to conserve those resources.[50] There are many opportunities where the City can promote and require private sector production of sustainable development. The first step is by serving as a good example for its own facilities followed by public education, regulatory incentives, and by linking the extension of public financial assistance to sustainability expectations. Incentives can link sustainable design to density bonuses or regulatory relief. The City can expect high performance in developments that receive City assistance of any form.[51]

- **Passive House standards:** The technology of energy efficiency keeps improving and the Passive House is one such example. In the United States, a house built to the Passive House standard results in a building that requires space heating energy of 1 BTU per square foot per heating degree day, compared with about 5 to 15 BTUs per square foot per heating degree day for a similar building built to meet the 2003 Model Energy Efficiency Code. This is between 75-95% less energy for space heating and cooling than current new buildings that meet today's US energy efficiency codes. The Passivhaus in the German-language camp of Waldsee, Minnesota (Biohaus) uses 85% less energy than a house built to Minnesota building codes.[52]

- **Leadership in Energy and Environmental Design (LEED):** Because of its increasing importance and use, the following provides some basic information regarding the LEED standards (refer to the Resources section at the end of the Assessment for web links). The following table lists the incremental construction costs to achieve the various LEED standards and the payback period for these additional costs based on lowered utility costs.

[50] Buildings account for:
- 65% total US electricity consumption
- 36% total US energy use
- 30% total US greenhouse gas emissions
- 136 million tons of construction and demolition waste in the US (approx. 2.8 lbs./person/day)
- 12% of potable water in the US
- 40% of global raw material use (3 billion tons annually)

[51] The requirements could be waived in special cases such as certain expansions and where historic properties are involved.
[52] Refer to http://waldseebiohaus.typepad.com/biohaus/design.html

The payback period includes only annual utility energy savings. The larger benefit of LEED buildings is in improved indoor environment (lower absenteeism, greater productivity, better thermal comfort), lower maintenance costs (commissioned building, more durable materials, smaller or eliminated building systems), higher corporate profile (increased product sales, marketing advantage, improved employee morale), and reduced risk of remedial measures (to deal with sick building syndrome or environmental contaminants).

Figure 2: Costs and Payback Periods for LEED Buildings

	Certified	Silver	Gold	Platinum
LEED Points	26 to 32	33 to 38	39 to 51	52 to 69
Typical Energy Savings	30 to 40%	40 to 50%	50 to 60%	60% and over
Incremental Construction Cost	2%	5%	7.5%	10%
Annual Utility Savings	$0.75/ft^2	$1.00/ft^2	$1.25/ft^2	$1.50/ft^2
Typical Payback Period	Under 3 years	3 to 5 years	5 to 10 years	10+ years

- **LEED by example:** The City must lead by example. One important method is to require net zero greenhouse gas emissions for new City-owned projects. This can be accomplished by maximizing efficiency through green design for new buildings (using standards such as LEED) and then retrofitting existing buildings to make them more efficient and thereby offset the net new emissions from the new construction. The City intends to accomplish the new construction part of this ideal by constructing the proposed Public Works facility to qualify for LEED certification.[53] The following are suggested Action Steps that would enhance the City's sustainability as regards energy and climate change:

Action Step 24: The City should establish standards for municipal facilities that reduce energy usage and it should take the following actions:

- Require users of City facilities to turn off lights and computers when not in use.
- The City should site, design, construct, renovate, operate, maintain, and deconstruct City facilities in a manner that makes long-term efficient use of energy, water, and materials efficiency, while providing healthy indoor environments.
- The City should establish a standard that will apply to all new construction of public facilities located within the City (referred to herein as the Building Efficiency Standard). The Building Efficiency Standards must meet or exceed the Gold level of LEED-New Construction standards.
- The City should adopt a schedule to periodically audit the energy efficiency of existing facilities and upgrade them to a ten-year or longer payback standard.[54]

[53] According to City staff, the City may not seek LEED certification even if the project qualifies due to concerns regarding certification costs.

[54] Since the City will own public buildings indefinitely, energy efficiency improvements with payback periods exceeding 10 years are reasonable investments to make.

Action Step 24 (cont):

- The City should maximize the efficiency of its street lighting and traffic signals through a replacement program using LEDs and other energy efficient products.
- The City should document its greenhouse gas emission "footprint" to ensure that new municipal construction results in a net-zero increase.

Action Step 25: The City should encourage larger private developments to attain a high standard of sustainability in the construction of new facilities through the following actions:

- The City should amend its Zoning Code and Comp Plan to require larger developments that require a permit that is not a "permit of right" and those that benefit from City assistance (as defined above) to comply with the City's Building Efficiency Standards.
- The City should establish incentives that encourage the construction of facilities that rely on "green" energy sources such as solar, wind, geothermal, and biogas.

- **Licensing power:** Under existing municipal authority, City inspectors ensure the safe installation and operation of heating and ventilation equipment. Cities could also use their inspection authority and their licensing authority for businesses and rental property to improve energy efficiency via mandatory benchmarking and re-commissioning (re-commissioning generally has a two-year payback period).[55] The City could link licensing and inspection fees to a fee-bate program that would help fund the needed energy efficiency improvements that have reasonable payback periods.

Action Step 26: The City should consider creating a fee/bate program that would link to its licensing and inspection authority for businesses and rental property and generate funds to improve building efficiency.

- **Energy efficiency, tax increment financing district:** Financing is often a barrier to energy efficiency improvements. Also, because developers usually need to get their money out of a new project right away so they can move on to the next one, they are often hesitant to invest in efficiency measures with longer paybacks. This is also true for property owners who may anticipate moving in a few years but still want the property to be more efficient. A solution is for the City to create a tax increment financing (TIF) district to monetize a loan fund for energy efficiency improvements within the TIF district, which could encompass the entire City. Property owners could get 20-year funds at below-market rates and have the loan payments added to their property taxes so that it runs with the property not the owner.[56]

[55] Contact the Center for Energy and Environment regarding the benefits of recommissioning http://www.nextstep.state.mn.us/energyconference/090122hancock.pdf

[56] Contact John Farrell at the Institute for Local Self Reliance for more information. California and New Mexico already allow this and the City of Berkeley is already doing it.

Action Step 27: The City should consider using tax increment financing (TIF) to finance a loan fund for energy efficiency improvements within a TIF district, which could be the entire City.

- **"Green" energy:** Cities should encourage the development of distributed energy (small on-site power plants to serve a building, a campus, or a neighborhood) and co-generation (simultaneous generation of more than one form of energy e.g. heat and power) because they are inherently more efficient than traditional sources of power. In addition, cities can purchase "greener" energy (energy derived from renewable fuels, which can slow the effects of climate change) and they can form buying pools to magnify their purchasing power.[57]

- **Green municipal purchasing, full cost accounting, and payback periods:** Externalities have distorted the true costs of energy and carbon waste disposal. The City's decisions (e.g. vehicle purchases) must be based on lifecycle costs. The City will need to assess where and how it will secure future energy supplies, especially renewable sources (including geothermal), and guide municipal resources where they will help secure that energy-independent future via oil substitutes. While aesthetic opposition is currently a major deterrent force to distributed generation and the use of solar and wind, the future energy climate change crises should displace these objections.

  Asphalt, for example, will become increasingly expensive and supplies may be interrupted due to the peak oil crisis. Payback period estimations must be fully transparent. When energy prices increase due to peak oil and carbon emission regulations, actual payback periods will be significantly foreshortened. Governments at the municipal, county, regional, and state levels should collaborate on purchasing decisions to reduce costs, support local businesses, and encourage the use of greener products.[58]

Action Step 28: Major municipal purchasing decisions must include a full-cost-accounting methodology based upon three energy cost scenarios: Current prices, most likely future prices, and a high-price future.

Action Step 29: The City should support public and private efforts that employ "green" energy, including taking the following actions:

- The City should maximize its use of "green" power; including energy produced by renewable fuels and cleaner alternative fuels, energy from distributed plants, and co-generated energy.
- The City should establish goals for the share of its electricity purchases produced by "green" energy sources.

[57] For example, a group of 100 municipalities with 450,000 customers formed the Northeast Ohio Public Energy Council (NOPEC) signed a six-year supply contract with Green Mountain Power, switching from 60% coal and 40% nuclear power to 98% natural gas and 2% renewable energy, while at the same time lowering their residents' average electricity bill by 6-8%. Under the terms of the agreement, Green Mountain will also build a 10 mW wind turbine and install photovoltaic systems on school buildings throughout the NOPEC area. Source: *New Rules*, Fall 2001.

[58] For more information, contact Joanna Kertenz at MPCA, Environmentally Preferable Purchasing Division.

Action Step 29 (cont.):

- The City should explore partnering with other local governments in the creation of a renewable energy buying pool.
- The City should evaluate on a life-cycle-cost basis the feasibility of utilizing distributed energy and co-generation in all new City facilities.
- The City should encourage the development of distributed and co-generated energy sources provided these facilities minimize off-site impacts, especially particulate emissions, and it should ensure that institutional and legal barriers do not impede its development.

- **Local agriculture:** The amount and variety of food produced and year-round availability will decrease while the cost will significantly increase in spite of a longer growing season.

Action Step 30: Ensure that City Codes do not unduly restrict home and community gardens and farmers markets.

- **Improved efficiency and reduced redundancy and costs through the merging of appropriate municipal services:** The Twin Cities include more than a hundred municipalities, each with a full array of municipal departments, facilities, ordinances, and plans. Cities and counties have found economies of scale and a reduction of duplicated services and facilities by merging resources in a range of circumstances such as police, fire, emergency preparedness, public works services, and shared facilities.

Action Step 31: West Saint Paul should study the feasibility of merging additional services with its nearby communities to improve the efficiency of municipal operations and save public funds.

4.3. GreenSteps Cities

At the behest of the State Legislature, the Minnesota Pollution Control Agency created a new assistance program called GreenSteps Cities, for all Minnesota cities that will support and recognize implementation of 27 sustainable development best practices. The best practices focus on cost savings and greenhouse gas reductions that will lead cities beyond compliance and encourage a culture of innovation. A city that implements a set number of the best practices organized into the five categories below will be recognized as a GreenStep City. Implementation of additional best practices over time will garner additional recognition.[59]

Many of the Action Steps proposed herein are included among the following 27 GreenSteps Cities best practices:

[59] An explanation of the actions, a contact person to advise on implementing the actions, and web resources describing the benefits of each action will be available in draft form during March 2010 at www.MnGreenSteps.org.

Buildings & Lighting

1. **Efficient Existing Public Buildings:** Work with utilities and others to assess and finance energy and sustainability improvements of existing structures.
2. **Efficient Existing Private Buildings:** Work with utilities and others to assess and finance energy and sustainability improvements of existing structures.
3. **New Green Buildings**: Construct new buildings to meet or qualify for a green building standard.
4. **Efficient Building and Street Lighting & Signals:** Improve the efficiency of public and private lighting and signals.
5. **Building Reuse:** Create economic and regulatory incentives for redeveloping and repurposing existing buildings before building new.

Land Use:

6. **Comprehensive Plan and Implementation:** Adopt a Comprehensive Plan and tie regulatory ordinances to it.
7. **Higher Density:** Enable and encourage a higher density of housing or commercial land use.
8. **Efficient and Healthy Development Patterns:** Mix land uses.
9. **Efficient Highway-Oriented Development:** Adopt commercial development and design standards for highway road corridors.
10. **Conservation Design:** Adopt development ordinances or processes that protect natural systems.

Transportation:

11. **Complete Green Streets:** Create a network of multimodal green streets.
12. **Mobility Options:** Promote active living and options to single-occupancy car travel.
13. **Efficient City Fleets:** Implement a city fleet investment, operations and maintenance plan.
14. **Demand-Side Planning:** Use Travel Demand Management and Transit-Oriented Design.

Environmental Management:

15. **Purchasing:** Adopt an environmentally preferable purchasing policy.
16. **Urban Forests:** Increase city tree and plant cover.
17. **Efficient Stormwater Management:** Prevent stormwater generation.
18. **Green Infrastructure:** Enhance city parks and trails.
19. **Surface Water Quality:** Improve local water bodies.
20. **Efficient Water and Wastewater Facilities:** Assess and improve drinking water and wastewater facilities.
21. **Septic Systems:** Implement an effective management program for decentralized wastewater treatment systems.
22. **Solid Waste Reduction:** -Increase waste reduction, reuse and recycling.

Economic and Community Development:

23. **Benchmarks & Community Engagement:** Adopt outcome measures for GreenStep and other city sustainability efforts, engaging community members in ongoing education and discussion.
24. **Green Business Development:** Document the use of assistance programs for green business and job development.
25. **Renewable Energy:** Remove barriers to and encourage installation of renewable energy generation capacity.
26. **Local Food:** Strengthen local food and fiber production and access.
27. **Business Synergies:** Network/cluster businesses to achieve better energy, economic and environmental outcomes.

Action Step 32: West Saint Paul should apply to become a GreenStep City.

Action Step 33: The City should develop a sustainability plan with clear sustainability goals and indicators of progress, and integrate it into its Comprehensive Plan.

Resources

The following are resources pertinent to the matters discussed in this Assessment:

- **Child-friendly principles in public and commercial places:** (refer to http://www.childfriendlycities.org/ MnDOT has a Safe Routes to School Program with grant money.
- **Clean Energy Resource Teams:** The Minnesota Project has developed the CERTS program to encourage clean energy and economic development for communities across the state through the Clean Energy Resource Teams (CERTs) project. http://www.mnproject.org/e-certs.html
- **Green Communities:** Green Communities is the first national green building program focused entirely on affordable housing (http://www.greencommunitiesonline.org/).
- **ICLEI:** ICLEI Local Governments for Sustainability is the leading international organization sponsoring sustainable cities. (http://www.iclei.org/)
- **LEED:** Leadership in Energy and Environmental Design programs (http://www.usgbc.org):
  - LEED-NC: For new construction and major renovations and additions
  - LEED-EB: For existing buildings
  - LEED-CI: For commercial interiors
  - LEED-CS: For core and shell
  - LEED-H: For homes
  - LEED-ND: For neighborhood developments
- **Minneapolis Downtown Transportation Management Organization:** The Downtown TMO is an excellent source of information on TDM plans. Refer to http://www.mplstmo.org/
- **Minnesota GreenStep Cities:** Has list of state grants and loans (pp. 19-23) and new program for designation as a GreenStep City. Refer to http://www.cleanenergyresourceteams.org/files/GreenStepCities_FinalReport_0.pdf
- **Minnesota Next Steps Program:** Web site sponsored by the Minnesota Pollution Control Agency that provides a wide range of information on community sustainability, with a special focus on resources that are useful for local governments. Refer to http://www.nextstep.state.mn.us
- **Minnesota Sustainable Design Guide:** Refer to http://www.sustainabledesignguide.umn.edu/
- **Model ordinances:** Minnesota Planning (now part of the Minnesota Department of Administration) published a 313-page guide "From Policy to Reality: Model Ordinances for Sustainable Development" in September 2000 developed by CR Planning consultants. It is a first step in pursuit of the goal of creating a package of model ordinances that Minnesota communities can use in charting their futures. During 2008 and 2009 this guide was updated (refer to http://www.crplanning.com/susdo.htm). Also see APA model ordinances: http://www.planning.org/research/smartgrowth/index.htm and especially: http://www.planning.org/research/smartgrowth/pdf/chapter4.pdf.

  Model ordinances are currently available for the following areas:

  - Mixed-Use Zoning District (APA and CR Planning)
  - Live/Work (APA)
  - Town Center (APA)
  - Affordable Housing Density Bonus (APA)
  - Unified Development Permit Review Process (AKA Planned Unit Development) (APA and CR Planning)
  - Transfer of Development Rights (APA and CR Planning)
  - Conservation Sub-district (CR Planning)
  - Cluster Development (APA)
  - Pedestrian Overlay District (APA and CR Planning)
  - Transit Oriented Development (CR Planning)
  - Street Connectivity Standards (APA)
  - Travel Demand Management Plan (CR Planning)
  - On-Site Access, Parking, Circulation, and Shared Parking (APA)
  - Adequate Public Facilities (CR Planning)
  - Energy Efficiency, Solar Access, and Wind Energy (CR Planning)
  - Highway Commercial District (CR Planning)
  - Stormwater and Erosion and Sediment Control (CR Planning)
- **National resources:** Daniel Lerch, *Post Carbon Cities: Planning for Energy and Climate Uncertainty*, 2007, has a thorough list of national resources starting on page 85.
- **New Urbanism principles:** Refer to: http://www.newurbanism.org/newurbanism/principles.html
- **Non-glare lighting:** The Dark Sky website contains helpful information about appropriate light fixtures: http://www.darksky.org/
- **Stormwater utility:** Refer to City of Minneapolis Stormwater Management Ordinance and utility fee structure (http://www.ci.minneapolis.mn.us/stormwater/fee/).
- **Transit for Livable Communities:** Refer to http://www.tlcminnesota.org/index.php
- **Tree replanting funds:** MN ReLeaf, a program of the Minnesota Department of Natural Resources, is a state resource for tree replanting funds.

Attachment 1
Concept C design for the Signal Hills Shopping Center from the report, *A Strategy for South Robert Street's Renaissance Redevelopment Design Framework*, 2000

Concept C: Mixed-Use Neighborhood. Concept C illustrates the way in which the shopping center site can evolve over the long term into a mixed-use neighborhood center, assuming that the current use could fall victim to a stagnant market. The concept illustrates the extension of the neighborhood street grid throughout the site, providing greater connectivity to and from the residential areas to South Robert Street businesses. Single-family home sites are proposed to act as an extension of the existing neighborhood to the west. Townhomes and other multi-family dwellings are proposed to be located in the central portion of the site. Mixed-use buildings front South Robert Street. The park provides an open space amenity and a central gathering area for the neighborhood.

Attachment 2
A Walk on South Robert Street: A Pedestrian's View