

<u>Corridor E</u> Northwest Highway: Arlington Heights Road to Waterman & Chestnut to Wilke

Corridor E: Northwest Highway: Arlington Heights Road to Waterman, Chestnut to Wilke

Key Issues:

- Screening of UPRR Maintenance Area near Euclid Avenue
- Includes Redevelopment of Hickory Kensington TIF District
- Impacts of Auto related uses on nearby residential
- Enhanced landscaping along the UPRR tracks



Existing Conditions



Proposed Enhancement

Chapter

🔀 General Corridor Design Principles

For many visitors to Arlington Heights, roadway corridors influence first impressions of the Village.

As the Village considers future corridor development, critical design principles should be considered.

Public Improvements

Intersections and Gateway SIgnage:

All signalized interections should be improved to promote safe pedestrian and bike crossings. Gateway Signage can help identify districts within the Corridors and provide a unified community character throughout the Village.



Intersection improvements may include new ADA access and decorative textured crosswalks. (image credit: Teska Associates)



Intersection improvement may include pedestrian refuge islands, decorative textured crosswalks and LED street signs. (image credit: Teska Associates)



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Z Private Improvements

Perimeter Landscape Buffer:

This area includes the perimeter landscape buffer between parking lots and the ROW. The following guidelines provide landscape treatments that can be applied along the Corridor to create a consistent landscape character.

Internal Pedestrian Access:

These guidelines address pedestrian access from the ROW to the building entrances of commercial properties to ensure proper pedestrian access and safety is provided.



Photo example of a wide perimeter landscape buffer



Continuous walks through parking lots to commercial entrances



Photo example of a narrow perimeter landscape buffer

Sustainability

Chapter Contents: Introduction, Energy Efficiency, Land Use Policies and Actions, Transportation Actions, Housing and Building Actions, Sustainable Practices

Introduction

Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations.

Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment. In our own communities, be it school, workplace, home or the town we live in, we need to take ownership of our environment and the stewardship of future development.

To that end, the Village should encourage sustainable development for new and renovated commercial and residential projects by developing a public awareness / education strategy and use of incentives to encourage sustainable development. Sustainable development encourages more efficient use of land and resources such as water, energy, and waste disposal. As such, sustainable development strategies should focus on these three elements:

- Water / Storm Water Conservation
- Energy Efficiency;
- Waste Disposal.

The Village has adopted sustainable goals to guide the Village as part of its Energy Efficiency and Conservation Strategy. These goals are articulated on pages 83 & 84.

Chapter Contents:



Sustainable Practices

Redeveloping in an existing urban area has less impact on the region than sprawl, therefore it is environmentally beneficial to locate new development in urbanized areas utilizing existing infrastructure. This sustainable development practice of in-fill development helps limit sprawl and preserve natural land. The redevelopment of urban areas helps restore, invigorate and sustain established urban living patterns, creating a more stable and interactive community.

As an example, sustainable or Smart Growth principles are applied in the Village downtown. Many destinations are accessible within a half mile radius, such as parks, grocery stores, the commuter train station, and various types of housing and are easy to walk or bike to. As such, Arlington Heights was named a transit friendly community by the DePaul Chaddick Institute.

There are several examples of sustainable practices that the Village should promote and encourage through regulations and incentives. These practices include the following:

- Renewable Energy
- Storm Water Management
- Use of Building Materials

😳 Stormwater Management Practices

Minimizing runoff helps prevent rainwater from washing off your yard into storm sewers and retention ponds and eventually into nearby streams and lakes. A few steps that can be taken to reduce runoff include the following:

Minimize impervious surfaces on your property

Pervious Pavers provide a solid ground surface, strong enough to take heavy loads, like large vehicles, while at the same time they allow water to filter through the surface and reach the underlying soils. The voids in the surface of the paving allow water to drain through and into the soil beneath. Pervious pavers reduce the amount of storm water runoff entering our natural waterways and carrying with it contaminants and pollutants.



C Stormwater Management Practices

Create a Rain Garden or Bio-swale

A rain garden or bio-swale is a planted depression that allows rainwater runoff from roofs, driveways, walkways, and parking lots, the opportunity to be absorbed. A rain garden or bio-swale reduces rain runoff by allowing storm water to soak into the ground. Native plants are recommended for rain gardens and bio-swales because they generally do not require fertilizer and are more tolerant of one's local climate, soil, and water conditions, and attract local wildlife such as native birds. The plants — a selection of wetland edge vegetation, such as wildflowers, sedges, rushes, ferns, shrubs and small trees — take up excess water flowing into the depression. Water filters through soil layers before entering the groundwater system. Root systems enhance infiltration, maintain or even augment soil permeability, provide moisture redistribution, and sustain diverse microbial populations involved in bio-filtration.





Utilize Rain Barrels

Rain barrels help slow down rain runoff so it can drain naturally into the ground. That helps keep excess water out of the sewer systems and keeps rain runoff from collecting pollutants as it travels to drainage systems and nearby waterways. Rain barrels also provide water during dry weather.

Plant Trees Trees immense root systems effectively absorb water over a large area.

For every 5% of tree cover area added to a community, run-off is reduced by approximately 2%. (Source: Identified Benefits of Community Trees and Forests, by Dr. Rim D. Coder, University of Georgia)

By implementing the above simple steps water runoff can be reduced. Even the smallest change can make a positive impact.



Renewable Energy Practices

Renewable energy is a term used to describe energy that is derived from resources, like the sun and the wind – resources that are continually available to some degree or other all over the world. We never run out of them. And their use or capture does not inflict any material damage on the environment.

Go to American Council on Renewable Energy at www.acore.org to learn more.

Solar Energy

Solar technologies are broadly characterized as either passive or active depending on the way they capture, convert and distribute sunlight. Active solar techniques use photovoltaic panels, pumps, and fans to convert sunlight into useful outputs. Passive solar techniques include selecting materials with favorable thermal properties, designing spaces that naturally circulate air, and referencing the position of a building to the Sun.

Installing a solar system could offset the electrical consumption by 50% or more depending on the orientation of your home and the available sunlight.

U.S. Energy Information Administration

Chapter

Passive Solar:

A passive solar building makes use of proper orientation to provide day lighting and natural cooling. In the Midwest the optimal orientation of a building is to the south. Some examples of passive solar are: Using a south facing orientation; Sun shades or brise-soleils over openings and windows; Use of natural air flows and temperature gradients for ventilation and cooling; Landscaping for shade and cooling.

Operable windows, whole house fans Trombe wall or Thermal Storage (exposing masonry surfaces to the cool night sky and insulating these surfaces from outside air during the day. As daytime temperatures rise, the cooler surface acts as a heat sink for the living space.)

Buildings that take advantage of solar building design are less dependent on fuel cost variations and can maintain comfort.

Active Solar:

This refers to the use of collectors, usually located on the roof to collect solar radiation to heat water for domestic uses and possibly, to provide auxiliary heating in the winter months. The systems that provide both hot water and heat are often referred to as combi-systems. An example of an active solar system is the Photovoltaic Systems (PV).

Photovoltaic Systems (PV):

PV systems generate electricity. The PV system may be on the building's roof, integrated into its overhangs, or provide the skin for the building's façade or atrium. Distributed power is PV generated power that is fed into the utility's grid.

In the Northwest Suburbs, 100,000 sf of solar panel surface area could generate enough electricity for about 1,058 homes. U.S. Department of Energy



Solar Farm in Illinois; Use of Solar for Light Solar Panels on Village Banners and Bike Shelter

Renewable Energy Practices Continued

The Village has been employing the use of solar energy for gateway signs, gateway banners in the downtown and most recently the bike shelter. The bike shelter near the train station with its solar panels produces enough energy to light the adjacent park, and was funded by a grant through the Illinois Clean Energy Foundation.

To learn more on solar energy go to Illinois Solar Association at www.illinoissolar.org.

Geothermal:

The term geothermal means earth, and therme, meaning heat, thus geothermal energy is energy derived from the natural heat of the earth. Energy can be extracted without burning a fossil fuel such as coal, gas, or oil. There are three main types of geothermal systems in use today, Dry Steam, Flash Steam and Binary Cycle. This source is almost an unlimited amount of heat generated by the Earth's core.

Direct Use of Geothermal Energy:

Hot water near the surface of the Earth can be used for heat for a variety of commercial and industrial uses. Direct-use applications include heating buildings, growing plants in greenhouses, drying crops, heating water at fish farms, and several industrial processes such as pasteurizing milk.

Binary Cycle:

In the binary system, the water from the geothermal reservoir is used to heat another "working fluid," which is vaporized and used to turn the turbine/generator units. The geothermal water and the "working fluid" are each confined in separate circulating systems or "closed loops" and never come in contact with each other. The advantage of the binary cycle plant is they produce no air emissions.

To learn more about geothermal energy go to www1. eere.energy.gov





Horizontal Geothermal System Source: U.S. Department of Energy

😳 Renewable Energy Practices Continued

Wind Energy Technologies:

Wind energy (or wind power) refers to the process by which wind turbines convert the movement of wind into electricity. Winds are caused by the uneven heating of the atmosphere by the sun, the irregularities of the earth's surface, and rotation of the earth. Wind turbines convert the kinetic energy of the moving wind into electricity. The wind turns the turbine's blades, which spin a shaft connected to a generator to make electricity.

Wind energy technologies use the energy in wind for practical purposes such as generating electricity, charging batteries, pumping water, and grinding grain. Stand-alone turbines are typically used for water pumping or communications.

The Village has an energy aggregation program through Integrys Energy for the purchase of renewable energy, with an opt out option. A participating resident can save 42% off their current electric supply. In addition to the savings, Arlington Heights residents ensure that fees paid by participants for electricity generation go to purchase 100% renewable energy credits, or "green energy". Residents can review information on Integrys and electric aggregation by clicking Integrys Energy on the Village website at www.vah.com.

Types of Wind Turbines:

Modern wind turbines fall into two basic groups: the horizontal-axis variety, as shown in the photo, and the vertical-axis design, like the eggbeater-style Darrieus model, named after its French inventor.

Horizontal axis turbines are the most common turbine configuration used today. They consist of a tall tower, atop which sits a fan-like rotor that faces into or away from the wind, a generator, a controller, and other components. Most horizontal axis turbines built today are two-or three-bladed.

Thomas Middle School in Arlington Heights has a horizontal axis turbine installed on the school property. Although the main purpose of the wind turbine is educational, on a windy day the turbine generate 2.4 kilowatts of energy or roughly enough electricity to power two and a half classrooms.

The Darrieus turbine was invented in France in the 1920s. Often described as looking like an eggbeater, it has vertical blades that rotate into and out of the wind. Using aerodynamic lift, it can capture more energy than drag devices.

The Savonius turbine is S-shaped if viewed from above. This drag-type turbine turns relatively slowly but yields a high torque. It is useful for grinding grain, pumping water, and many other tasks, but its slow rotational speeds are not good for generating electricity. Recently in 2011 the Village Board approved regulations for Solar and Geothermal systems for residential and non-residential zoning districts. The regulations may be found in Chapter 28 of the Village Zoning Code. To see what is allowable go the Zoning Code on the Village website at www.vah.com.

To learn more on wind energy go to Illinois Wind Association, www.illinoiswind.org.



U.S. Department of Energy

Chapter

C Building Materials Practices

Green building materials are composed of renewable, rather than nonrenewable resources. Green materials are environmentally responsible because impacts are considered over the life of the product. Green materials should meet some of the criteria below:

- Recycled Content are products with identifiable recycled content.
- Natural, plentiful or renewable are Materials harvested from sustainably managed sources.
- Locally available are building materials found locally or regionally.
- Salvaged, refurbished, or remanufactured: Includes saving a material from disposal and renovating, repairing, restoring, or generally improving the appearance, performance, quality, functionality, or value of a product.
- Reusable or recyclable: Select materials that can be easily dismantled and reused or recycled at the end of their useful life.
- Durable: Materials that are longer lasting or are comparable to conventional products with long life expectancies.

A few examples of the types of green building materials include:

- Green carpets and area rugs are low-emitting and made from natural fibers (e.g., wool, jute) or with a high content of recycled synthetic fibers.
- Bamboo flooring is a renewable resource that is a fast-growing grass that can be selectively harvested annually. Look for bamboo products that are FSC certified and have no formaldehyde added.
- Linoleum flooring consists of renewable ingredients that often include recycled content and the lifespan can be as high as 30-40 years.
- Paints that use water as the carrier rather than petroleum-based solvents, have lower VOC levels than oil-based paints and they can also be "recycled" by combining any excess; oil paints cannot be recycled in this way.

🗘 Building Materials Practices Continued

Insulation:

Heating and cooling account for 50 to 70% of the energy used in the average American home. Inadequate insulation and air leakage are leading causes of energy waste in most homes. Insulation:

- saves money.
- makes your house more comfortable by helping to maintain a uniform temperature.
- makes walls, ceilings, and floors warmer in the winter and cooler in the summer.

Windows:

You can use the energy performance ratings of windows, doors, and skylights to tell you their potential for gaining and losing heat, as well as transmitting sunlight into your home.

Lighting:

The most common energy-efficient lighting types include energy-saving CFLs, and LEDs. These bulbs are more energy-efficient than traditional incandescent bulbs.

CFLs — about 75% energy savings

Compact fluorescent lamps (CFLs) are simply curly versions of the long tube fluorescent light bulbs. An ENER-GY STAR-qualified CFL uses about one-fourth the energy and lasts ten times longer than a comparable incandescent bulb that puts out the same amount of light.

LEDs — about 80% – 85% energy savings

The light emitting diode (LED) uses the same technology as the little indicator light on your cell phone, but designed to light your home. It is one of today's most energy-efficient and rapidly developing technologies. LED's last up to 25 times longer than the traditional incandescent bulbs they replace. While LEDs are more expensive at this early stage, they still save money because

Appliances:

Look for appliances with an ENERGY STAR rating. Energy efficient choices can save families about a third on their energy bill with similar savings of greenhouse gas emissions, without sacrificing features, style or comfort. To learn more go to www.energystar.gov.

Americans, with the help of ENERGY STAR, saved enough energy in the past year to avoid greenhouse gas emissions equivalent to those from 33 million cars — all while saving nearly \$18 billion on their utility bills.

www.energystar.gov

Chaptei

Heating and cooling account for about 56% of the energy use in a typical U.S. home, making it the largest energy expense for most homes.

Source: EPA.gov



If every American home replaced just one light bulb with a light bulb that's earned the ENERGY STAR, we would save enough energy to light 3 million homes for a year, save about \$600 million in annual energy costs, and prevent 9 billion pounds of greenhouse gas emissions per year, equivalent to those from about 800,000 cars.

Source: Energystar





Energy Efficiency and Conservation Goals

- 1. To link transportation and land use in order to enhance transit options for residents and the labor force.
- 2. To promote and encourage energy efficiency for residential and commercial buildings.
- 3. Encourage the use of renewable energy and resources such as solar, wind, geothermal, and bio fuels.
- 4. Continue to promote and encourage both residents and businesses to reduce waste and ncrease recycling.

- 5. To optimize tree planting and protection of existing trees for maximum carbon reduction and to increase water conservation measures.
- 6. Keep abreast of new policies and research regarding energy efficiency and provide support for local, state, and Federal efforts to promote energy conservation measures.
- 7. Educate and Promote using Public Relations to encourage energy conservation and support for the Village Energy Efficiency Conservation Strategy.

In addition to the overall Goals, the following sustainable policies and action items are recommended as they relate to land use and development of the community, transportation, and housing.

Land Use Policies to Promote Sustainability

- 1. Encourage alternatives to use of gas powered vehicles such public transit, alternatively fueled vehicles, bicycle and pedestrian routes, and bicycle and pedestrian friendly development design.
- 2. Encourage all types of development to use alternative renewable energy sources and meaningful energy conservation measures.
- 3. Encourage development and businesses to reduce the use of chemicals and synthetic compounds in their construction and building materials, operations, products, and services.
- 4. Encourage methods of landscape design and maintenance to reduce or eliminate the use of pesticides, herbicides, and synthetic fertilizers as well as encouraging the use of compost and conserving water.
- 5. Support compact and mixed use development that minimizes the need to drive, re-uses existing infill and brownfield sites, that avoids the extension of suburban sprawl.
- 6. Encourage participatory approaches to planning for sustainability, involving the local community in setting a vision and implementation.
- 7. Support Federal, State and Local programs to offer incentives for sustainable development and practices.



Land Use Actions Towards Sustainability

- 1. Compact development that minimizes the need to drive.
- 2. A mix of integrated uses such as housing, shops, work places, civic uses, within walking or bicycling distance.
- 3. Human scaled development that is pedestrian friendly.
- 4. Development oriented around public transit.
- 5. Home based occupations and work that reduce the need to commute.

- 6. Guiding development to existing developed areas thus minimizing development of outlying undeveloped areas.
- 7. Remediation and redevelopment of brownfield sites and other lands that suffer from environmental constraints.
- 8. Establish financial and regulatory incentives for infill development and eliminate disincentives.

Transportation Actions Towards Sustainability

- 1. Reduction in vehicle trips and miles through compact, infill, mixed use development.
- 2. Use of alternatives to driving including walking, bicycling, and public transit.
- 3. Local street designs that encourage pedestrian and bicycle use.
- 4. Street designs that support and enhance access between neighborhoods and to commercial areas.



- 1. Solar oriented design of development.
- 2. Minimize impervious surfaces to reduce storm water run-off.
- 3. Use of regenerative energy heating and cooling source alternatives.
- 4. Provision of housing near places of employment.
- 5. Selection of building materials which require less energy intensive production methods and long distance transport.

Public Input

Chapter Contents: Public Process, Community Survey

Public Process

Over the course of 11 months beginning in September, 2014, the Village's Comprehensive Plan Subcommittee, a subcommittee of the Plan Commission, met to discuss and provide direction on the new Comprehensive Plan. During this process, a Community Survey was conducted in order to obtain input on the Plan. The Subcommittee forwarded a draft of the Comprehensive Plan to the Plan Commission who held a public hearing in August, 2015. Prior to the public hearing, the draft plan was placed on the Village's web page to allow for public comment. The Plan was then considered by the Village Board in September, 2015.

Community Survey

A community survey was utilized to obtain public input issues related to growth and development, historic preservation, sustainable development, and improving corridors. The survey was posted on the Village's web page beginning April 6th, 2015 through July, 2015 and there were 535 responses. The Village promoted the survey through a posting on our Facebook and Twitter pages, and through the Park District, Library, Senior Center and Chamber of Commerce. Full results of the survey can be found at www. vah.com)

A summary of certain questions is highlighted as follows:

The Village's current population is 75,101. Please indicate one of the following desired populations for the community 15 years from now in Year 2030.

70,000-75,000 (0% to 7% decline)	13%
75,001-80,000 (0% to 7% increase)	66 %
80,001-85,000 (7% to 13% increase)	18%
85,001-90,000 (13% to 20% increase)	3%

Which of the following types of development would you like to see more of in the Village.

Restaurants	72%
Entertainment	70 %
Mixed Use	48 %

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How strongly would you support or oppose policies regarding growth in the Village.

	Strongly Support/Support	Oppose/Strongly Oppose
Policies the limit growth	45%	45%
Policies that pace growth in targeted areas	83 %	12%
No policies, unlimited growth	13%	77%

Presently how satisfied or dissatisfied are you with the following aspects of the Village.

	Strongly Satisfied/Satisfied	Dissatisfied/Strongly Dissatisfied
The number of retail businesses	61%	38%
The overall appearance of your Neighborhood	88%	12%
The overall appearance of the Village	87%	13%
The amount of open space	74%	23%
The distribution of commercial and Residential property	81%	14%

Please indicate how you feel about the following statements.		
	Strongly Agree/Agree	Disagree/Strongly Disagree
Older historic buildings in the Village should be preserved	91%	6%
The Village should improve the appearance of certain corridors along major roadways	90%	8%
The Village should encourage sustainable green development for new construction by encouraging energy efficient buildings that have less impact on the environment	85%	11%
Commercial Areas along some majorstreets lack landscaping	77%	15%
A decline in population is good for the community	11%	79 %

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Please indicate the level of importance for each issue described below as it relates to the Village.

	Very / Somewhat Important	Not Important
Improving the appearance of the Village	93 %	7%
Expand transportation options	69 %	27%
Redevelopment of older commercial areas	92 %	7%
Development that has less impact on the environment	77%	17%
Increase the tax base with new compact mixed use developm	nent 74%	17%
Providing more open space	70%	24%
Increase the number of jobs located in the Village	85%	11%

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Appendix

CONTENTS

VILLAGE OF ARLINGTON HEIGHTS OFFICAL MAP

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Village of Arlington Heights Cook County, Illinois

Official Map North

Existing	Proposed
es	es
js	js
hs	hs
u	U
р	P
np	np
ср	CP
sp	sp
cpk	cpk
dp	dp
CC	CC
f	
d	d
h	
I	
m	
g	9

ELEMENTARY SCHOOL JUNIOR HIGH SCHOOL **HIGH SCHOOL** UNIVERSITY PLAYLOT **NEIGHBORHOOD PARK** COMMUNITY PARK SPECIAL PURPOSE PARK CONNECTOR PARK DISTRICT PARK COMMUNITY CENTER **FIRE STATION DETENTION BASIN** HOSPITAL LIBRARY MUNICIPAL USE OTHER GOVERNMENT USE **EXPRESSWAY** MAJOR ARTERIAL STREET SECONDARY ARTERIAL STREET CBD STREET COLLECTOR STREET SUB-COLLECTOR STREET LOCAL STREET 66 FT MINIMUM RIGHT-OF-V Proposed Street -WAY Lake Cook Rd





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Official Map Central

Existing	Proposed
es	es
js	js
hs	hs
u	u
р	P
np	np
ср	CP
sp	sp
cpk	Cpk
dp	dp
CC	CC
f	f
d	d
h	h
I	
m	m
g	g

ELEMENTARY SCHOOL JUNIOR HIGH SCHOOL **HIGH SCHOOL** UNIVERSITY PLAYLOT **NEIGHBORHOOD PARK** COMMUNITY PARK SPECIAL PURPOSE PARK CONNECTOR PARK DISTRICT PARK COMMUNITY CENTER **FIRE STATION DETENTION BASIN** HOSPITAL LIBRARY MUNICIPAL USE OTHER GOVERNMENT USE **EXPRESSWAY** MAJOR ARTERIAL STREET SECONDARY ARTERIAL STREET **CBD STREET** COLLECTOR STREET SUB-COLLECTOR STREET LOCAL STREET 66 FT MINIMUM RIGHT-OF-WAY Proposed Street





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Village of Arlington Heights Cook County, Illinois

Official Map South

Existing	Proposed
es	es
js	(js
hs	hs
u	U
р	P
np	np
ср	CP
sp	sp
cpk	Cpk
dp	dp
CC	CC
f	f
d	d
h	h
I	
m	m
g	g

ELEMENTARY SCHOOL JUNIOR HIGH SCHOOL **HIGH SCHOOL** UNIVERSITY PLAYLOT **NEIGHBORHOOD PARK** COMMUNITY PARK SPECIAL PURPOSE PARK CONNECTOR PARK DISTRICT PARK COMMUNITY CENTER FIRE STATION DETENTION BASIN HOSPITAL LIBRARY MUNICIPAL USE OTHER GOVERNMENT USE **EXPRESSWAY** MAJOR ARTERIAL STREET SECONDARY ARTERIAL STREET **CBD STREET** COLLECTOR STREET SUB-COLLECTOR STREET LOCAL STREET 66 FT MINIMUM RIGHT-OF-WAY **Proposed Street** Lake Cook Rd







