

# Village of Lake Villa

## Lake Michigan Water Update

March 2013



### Overview

For many years, ground water has served as our local water supply. Ground water is found below the land surface and is extracted using wells and pumps. The water is disinfected and pumped to our homes through a network of buried pipes.

The future outlook of our ground water supplies is poor. Growing demands for water will burden our fixed water supply and its quality is declining. We are presently approaching the capacity of the shallow wells and are over-pumping the deep wells.

Lake Michigan, with its high quality water, is only a few miles from our homes. Our community leaders have secured the right to use Lake Michigan water to replace the present ground water system.



High quality Lake Michigan water provides a sustainable supply for the future

# Ground Water Issues

Our ground water is extracted from shallow and deep aquifers, which are water bearing soil layers. Wells drawing water from the shallow aquifer are typically 100 to 300 feet deep. Water enters this aquifer when rainfall on the ground surface percolates down. Issues with the shallow aquifer include:

- The water is hard, due to minerals dissolved in the water.
- The water often has high levels of dissolved iron.
- The aquifer can be contaminated by leachate from landfills, chemical and gasoline spills, and salt from winter road ice control.
- Drought periods reduce the amount of water available and wells can go dry.
- Overuse of the aquifer will reduce the levels of local inland lakes.

Wells to the deep aquifer, which is estimated to be over 400 million years old, are typically over 1,000 feet deep. Water enters the deep aquifer in eastern Winnebago and Boone Counties in Illinois and Walworth and Rock Counties in Wisconsin. Issues with the deep aquifer include:

- Water from the deep wells will require expensive treatment.
- The water is naturally contaminated with **radium and barium**.
- The deep aquifer is being over pumped, so the aquifer level is declining.
- Use of the deep aquifer will increase with development in McHenry County to the west as well as Wisconsin to the north.
- The water is hard, due to minerals dissolved in the water.



*The additional cost to bring in Lake Michigan water is approximately \$1.20 per household per day.*



*Most residents on Lake Michigan water do not use a water softener resulting in a savings of about \$300 per year in rent and supplies.*

*Homes with Lake Michigan water have less calcium and rust stains on their toilets and faucets.*

## Central Lake County Joint Action Water Agency (CLCJAWA)

CLCJAWA provides Lake Michigan water to twelve Lake County communities through its nine member agencies and offers the following advantages to our community:

- Reduced capital costs. CLCJAWA provides existing infrastructure as it owns the required lake water intake pipe, treatment plant, and water mains.
- Track record of excellence. No violations of any drinking water standards.
- High quality water treatment, including filtration and multiple disinfection processes.
- Cost effectiveness. The cost to connect to CLCJAWA is less than any other available option for Lake Michigan water supply.
- CLCJAWA has offered full membership, which would include voting powers to help control future water rates.



# Lake Michigan Water

Lake Michigan is the water source for Chicago and over 150 additional Illinois communities, including most of DuPage County, as well as all of the major cities along the Lake. In 1992, CLCJAWA, described below, began supplying water to communities in Lake County. Why is Lake Michigan such a popular water source?

- Long-term sustainability
- Highest quality natural water source in the region
- Lower hardness. Most homeowners do not use home water softening systems
- No iron content eliminating fixture and laundry staining
- NO RADIUM, BARIUM, or landfill leachate contamination.
- EPA regulations for radium control are becoming more stringent and may lead to additional treatment costs.

Lake Villa has applied for and received an allocation of Lake Michigan water that must be used by 2016. As part of the application process, Lake Villa had to demonstrate that Lake Michigan water is the most economical source of supply.

## Cost Information

### Property Tax Component

CLCJAWA	Tax on \$150,000 Property	Tax on \$200,000 Property	Tax on \$300,000 Property
Construction Costs	\$153/year	\$211/year	\$327/year

### Water Rate Component

CLCJAWA	3,000 gal/month	6,000 gal/month	8,000 gal/month
Water Rate/1,000 gal usage	<u>usage</u>	<u>usage</u>	<u>usage</u>
\$2.76	\$8.28/month	\$16.56/month	\$22.08/month
Local Improvement Rate Increase \$0.36	\$1.08/month	\$ 2.16/month	\$ 2.88/month



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## Lake Michigan Water Supply

### Benefits to Residents

- High quality water
- Long-term sustainable water supply
- Most cost-effective solution, both in the present and future
- Positive impact on property values
- Eliminates ground water issues
- Attracts businesses
- Reduced hardness, no softeners needed
- Iron free water, no rust stains

### Average Monthly Household Utility Costs with Lake Michigan Water

- Electricity - \$120
- Cable TV - \$105
- Cell Phone - \$98
- Natural Gas - \$75
- Water\* - \$38
- Internet - \$35
- Water Softener Rental & Salt - \$30
- Refuse & Recycling - \$17.00

\*Assumes 6,000 gallons of water used per month. Does not include sewer.