Community Forum

Our Water: Where does it come from and where does it go?

Alderman Jack Reisenberg & the
Lake Forest Collaborative for Environmental Leadership

Discussion Outline

- Welcome and Introduction – Alderman Jack Reisenberg
- Environmental Collaborative Overview – Curt Volkmann
- Water Quiz
- Water in Our Region – Glenn Adelson (5 minutes)
- Our Fresh Water – Curt Volkmann (5 minutes)
- Our Waste Water – Jim Sullivan (5 minutes)
- Our Storm Water – John Sentell (5 minutes)
- What Can You Do to Help? – Kristin McCain (5 minutes)
- Community Questions and Conversation

Lake Forest's Commitment to Environmental Stewardship

- Lake Forest's 1861 motto: "Naturae et Scientiae Amor", or "Love of Nature and Science."
- 2012 Lake Forest Strategic Plan includes focus on environmental stewardship
- Signed the Sierra Club's 2015 Cool Cities Sustainability Agreement
- Formed Collaborative to achieve the objectives of the Strategic Plan and Sustainability Agreement

Lake Forest Collaborative for Environmental Leadership

- City of Lake Forest
- Lake Forest College
- Lake Forest High School District 115
- Lake Forest Elementary School District 67
- Lake Forest Open Lands Association

Collaborative Goals

- Promote awareness of environmental concerns (water, waste, air quality, ravines and bluffs, invasive species, tree disease and pest threats)
- Develop and promote community-wide projects and programs
- Engage a network of resident volunteers to take action
- Assist in the development of responsible City ordinances and policies

Current Areas of Focus

- Re-greening Lake Forest
- Ravine restoration
- "Where does it come from, where does it go?" education series
  - ***Water (tonight)***
  - Energy
  - Solid Waste

Contacts

- Curt Volkmann (Collaborative Chair)
- Chuck Myers (City of Lake Forest, Parks and Forestry)
- Glenn Adelson (Lake Forest College)
- John Sentell (Lake Forest Open Lands Association)
- Jim Sullivan (School District 115)
- Kristin McCain (School District 67)

Water Quiz

1. **Of all the water in the world, approximately what percentage is usable/drinkable by humans (i.e., freshwater that is not frozen in icecaps or glaciers)?**

    a. 2.5%
    b. 5%
    c. 10%
    d. 60%
    e. 90%

2. **Approximately what percentage of the world's surface freshwater is in the Great Lakes?**

   a. 2%
   b. 12%
   c. 21%
   d. 33%
   e. 54%

3. **Retention time is the time that a substance remains within a body of water before being lost to the system. What is the approximate retention time for a pollutant, such as a benzene molecule, in Lake Michigan?**
    a. 10 minutes
    b. 6 weeks
    c. 6 months
    d. 10 years
    e. 99 years

4. **When you wash a carrot in your kitchen sink, the water comes from _____ and ends up in _____.**
    a. Lake Michigan; Lake Michigan
    b. Lake Michigan; the Gulf of Mexico
    c. Lake Michigan; the Skokie Lagoons
    d. The groundwater beneath your home; Lake Michigan
    e. The groundwater beneath your home; the groundwater beneath your home

5. **If you accidentally flush a bracelet down the toilet, where does it end up?**
    a. Lake Michigan
    b. The drinking water treatment plant on Lake Road in Lake Forest
    c. The NSSD treatment plant on Clavey Road in Highland Park
    d. The Skokie Lagoons
    e. The Gulf of Mexico

6. **Lake Forest today comprises approximately 11,200 acres. Prior to settlement, Lake Forest had approximately how many acres of wetlands to store rainwater?**

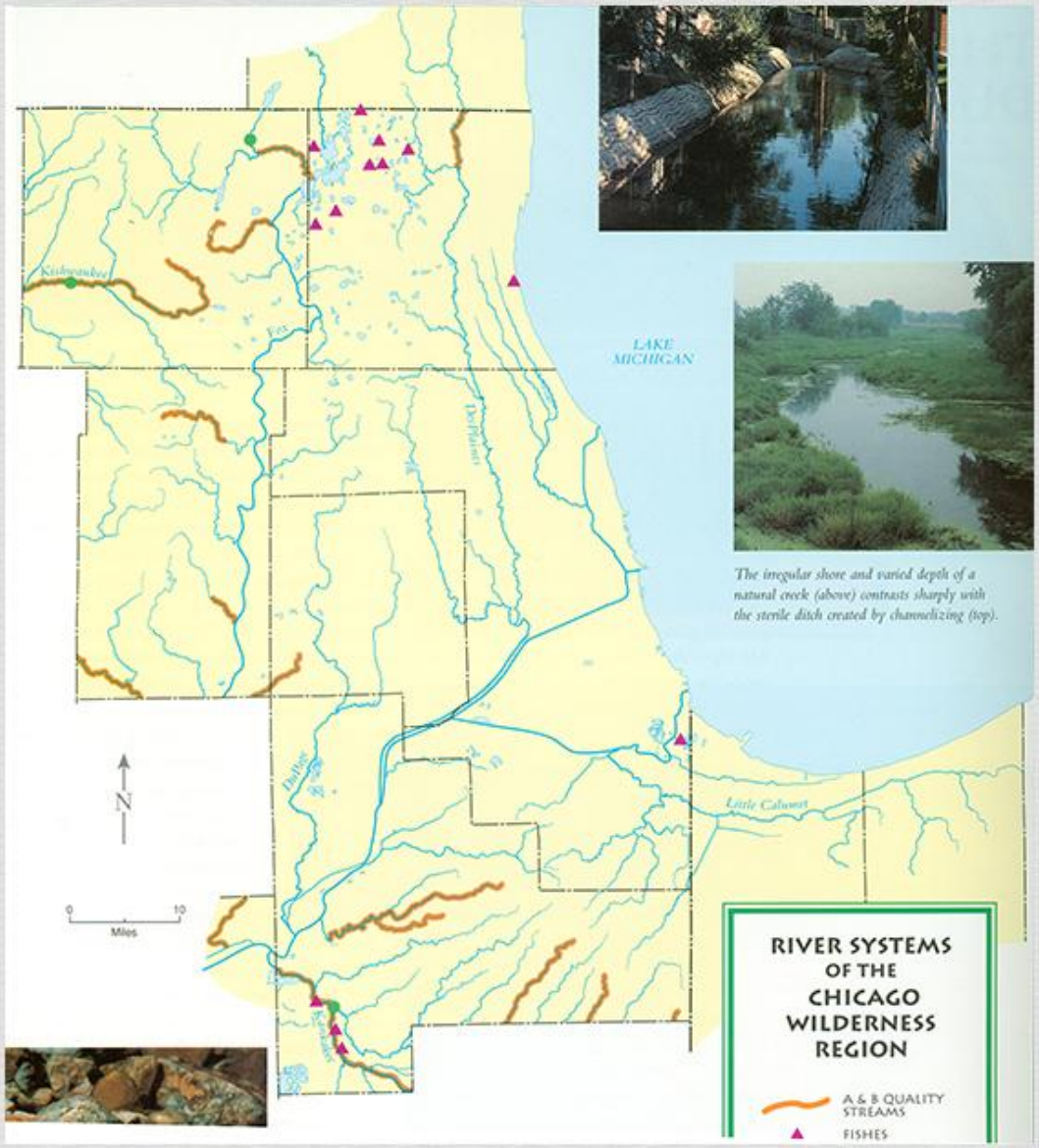
a. 2
b. 100
c. 600
d. 1,000
e. 2,900

7. What is this object protruding from the water near the pavilion at the Lake Forest Beach?

a. A device that measures lake water levels
b. A shark hormone detector that warns swimmers of an impending shark attack
c. A security camera
d. An *E. coli* monitoring device that predicts the presence of *E. coli* by measuring temperature and humidity
e. A cell phone tower for improved beach reception


Lake Forest
100 miles
100 kilometers
Lake Nipigon
Thunder Bay
ONTARIO
MINNESOTA
Lake Superior
Duluth
Sault Ste. Marie
Sault Ste. Marie
Lake Nipissing
QUEBEC
Ottawa River
St. Lawrence River
WISCONSIN
Green Bay
Lake Michigan
Lake Huron
Georgian Bay
Lake Simcoe
Lake Winnebago
Mississippi River
MICHIGAN
Saginaw Bay
Toronto
Lake Ontario
Milwaukee
NEW YORK
Buffalo
Finger Lakes
Detroit
Lake St. Clair
Lake Erie
Chicago
Cleveland
PENNSYLVANIA
ILLINOIS
INDIANA
OHIO

Lake Forest* > Chicago River > Illinois River > Mississippi River > Gulf of Mexico



The irregular shore and varied depth of a natural creek (above) contrasts sharply with the sterile ditch created by channelizing (top).

* East Lake Forest storm water drains to Lake Michigan. All Lake Forest waste water flows to the Chicago River and ultimately the Gulf of Mexico

Our Fresh Water System

Our Water Plant

Our Water Plant

Our Water Plant

Our Water Plant

Our Water Storage

Contaminants in our Water

- Regulated and tested
  - Chlorine, arsenic, barium, fluoride, iron, nitrate, sodium, radium
- Unregulated and "of emerging concern"
  - Flame retardants, hormones, antibiotics, pesticides, pharmaceuticals, etc.

Water Pricing

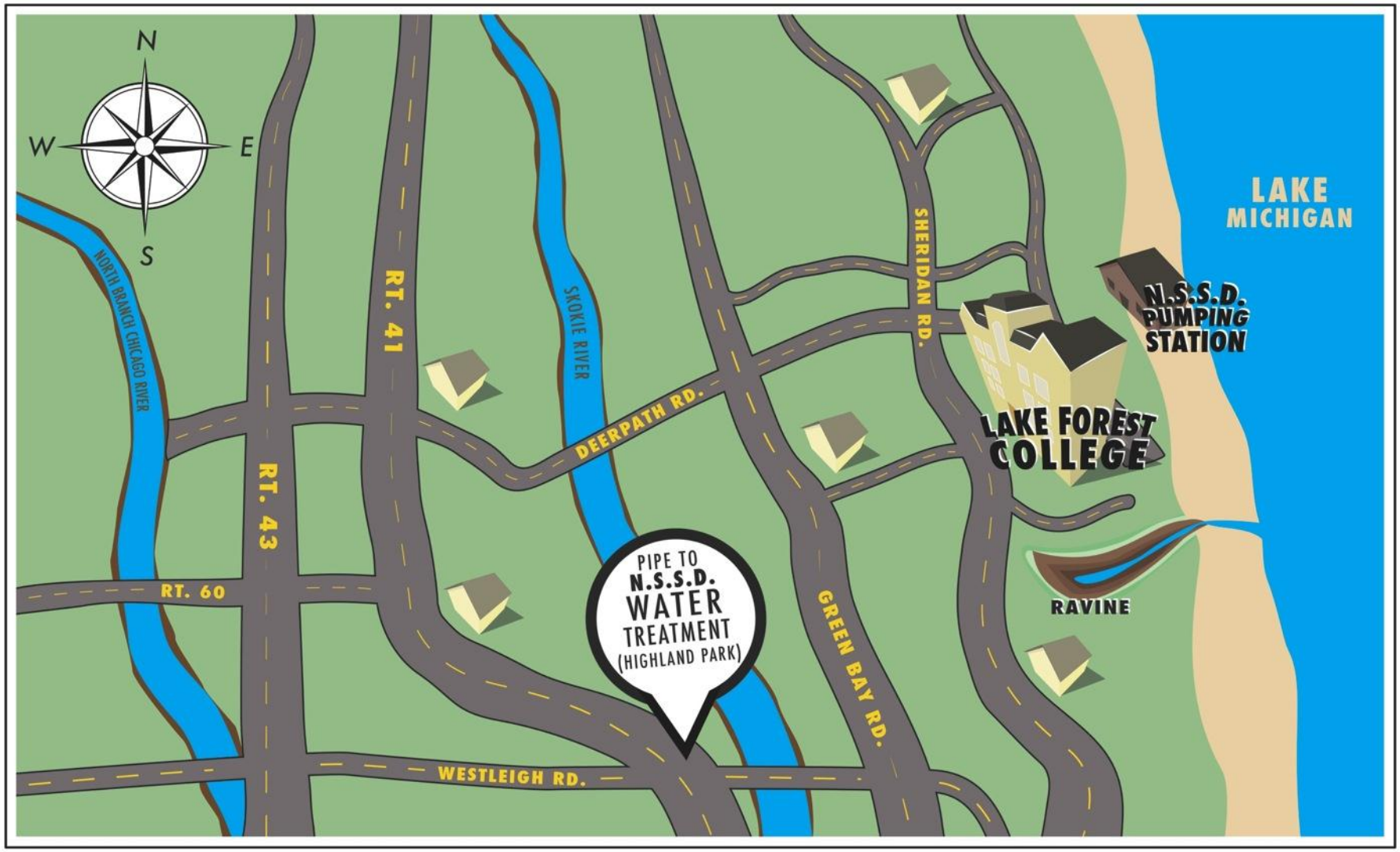
- What we pay today for Lake Forest water
  - $6.56 per 1,000 gallons (water and sewer)
  - Water and sewer customer fixed charge

$1,900

$10,700

Per 1,000 gallons

Our Wastewater System



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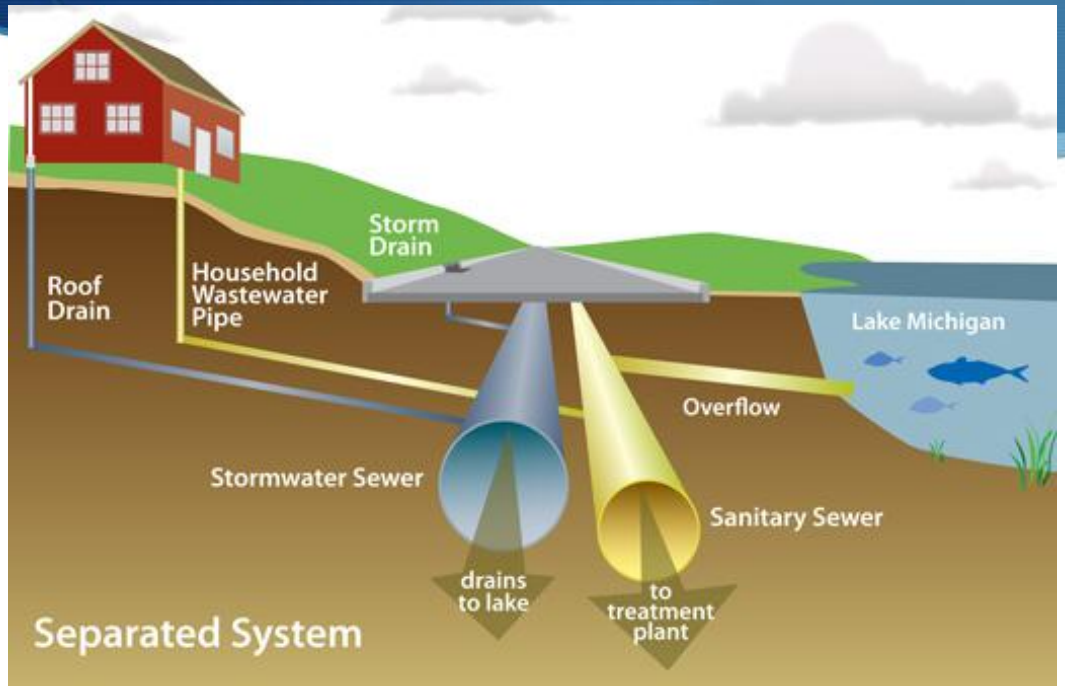


Wastewater Treatment

Wastewater – After Treatment

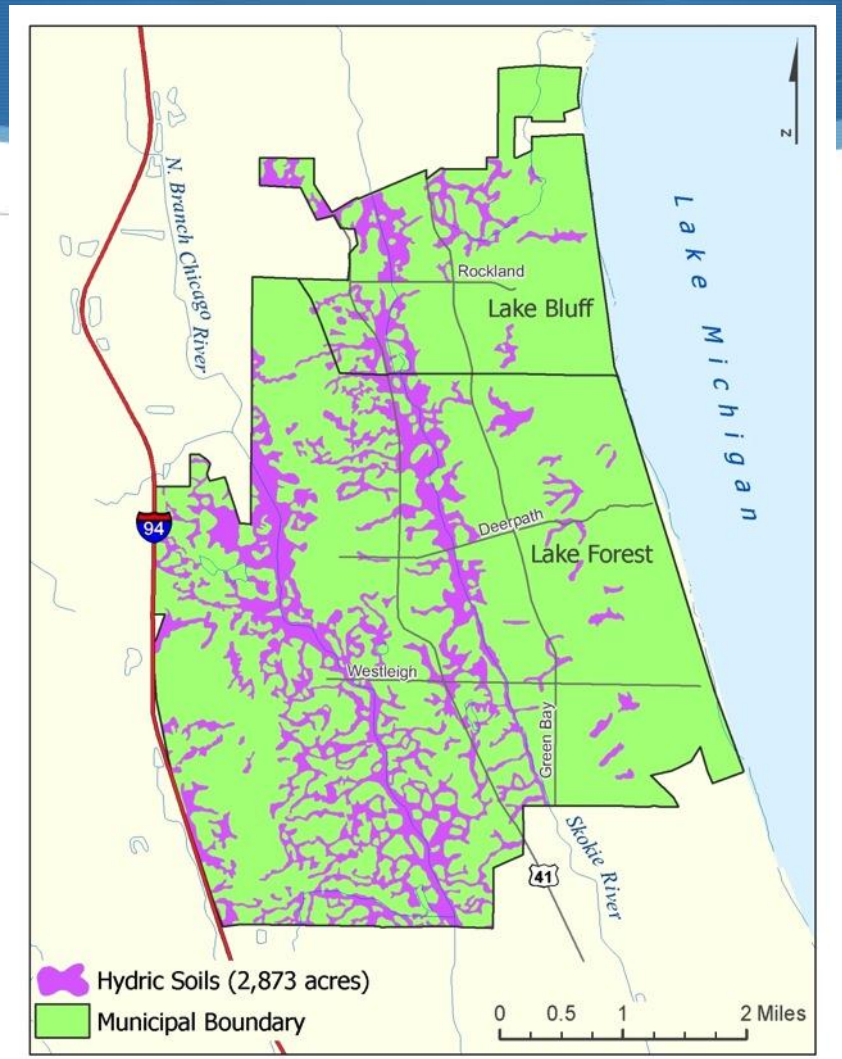
Chicago River > Illinois River > Mississippi River > Gulf of Mexico

Wastewater Pricing and Energy Use

- Pricing for wastewater treatment based on water usage
- North Shore Sanitary District (NSSD) Plant
  - $1 million per year on electricity
  - $200,000 per year on natural gas
- NSSD Lake Forest Pumping Station
  - $25,000 per year on electricity
  - $8,000 per year on natural gas

Our Storm Water System

Historical Wetlands in Lake Forest



Current Wetlands in Lake Forest

Skokie River

What Can You Do? 10 Simple Steps…

#1 - **Follow watering restrictions in the summer and consider watering less.**

Do you know the City of Lake Forest Water Restrictions?

- ❑ Sprinkling is permitted on odd or even days, based on your address.
- ❑ Sprinkling is discouraged between 10:00 a.m. and 8:00 p.m.
- ❑ Newly installed lawns and landscaping, exempt from these restrictions, may be watered daily for a reasonable period after installation.

Simple Steps For Your Property…

#2 - **Reduce the amount of fertilizers and pesticides on your lawn or garden**

#3 - **Consider adding green infrastructure**

Examples: Native Plants, Planting Trees, Rain Barrels





Simple Steps For Your Home…

#4 - **Install WaterSense plumbing fixtures and irrigation controllers.**

#5 **- Stop leaky toilets, indoor faucets and outdoor faucets.**

#6 **– Do not flush or dump pharmaceuticals or chemicals down drains.**

#7 **– Use phosphorus free detergents.**

Simple Steps For Lake Foresters…

#8 - **Drink our City water – it's cheap and clean!**

#9 – **Pick up your pet waste and dispose in the trash.**

#10 - **Don't feed the gulls and pick up all your garbage at the beach.**

Water Quiz Review

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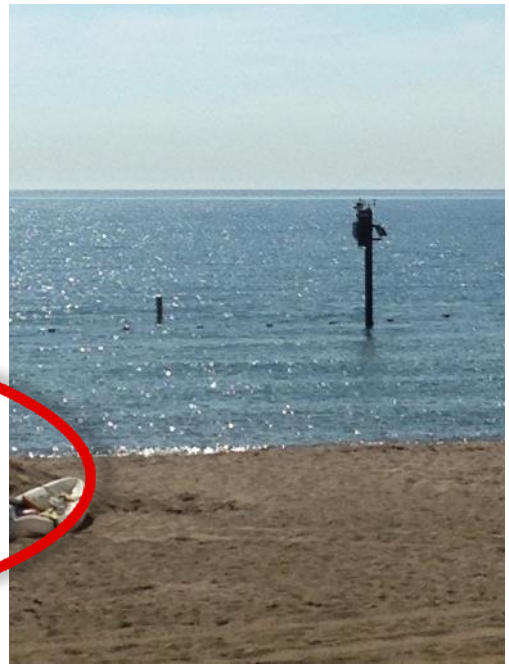
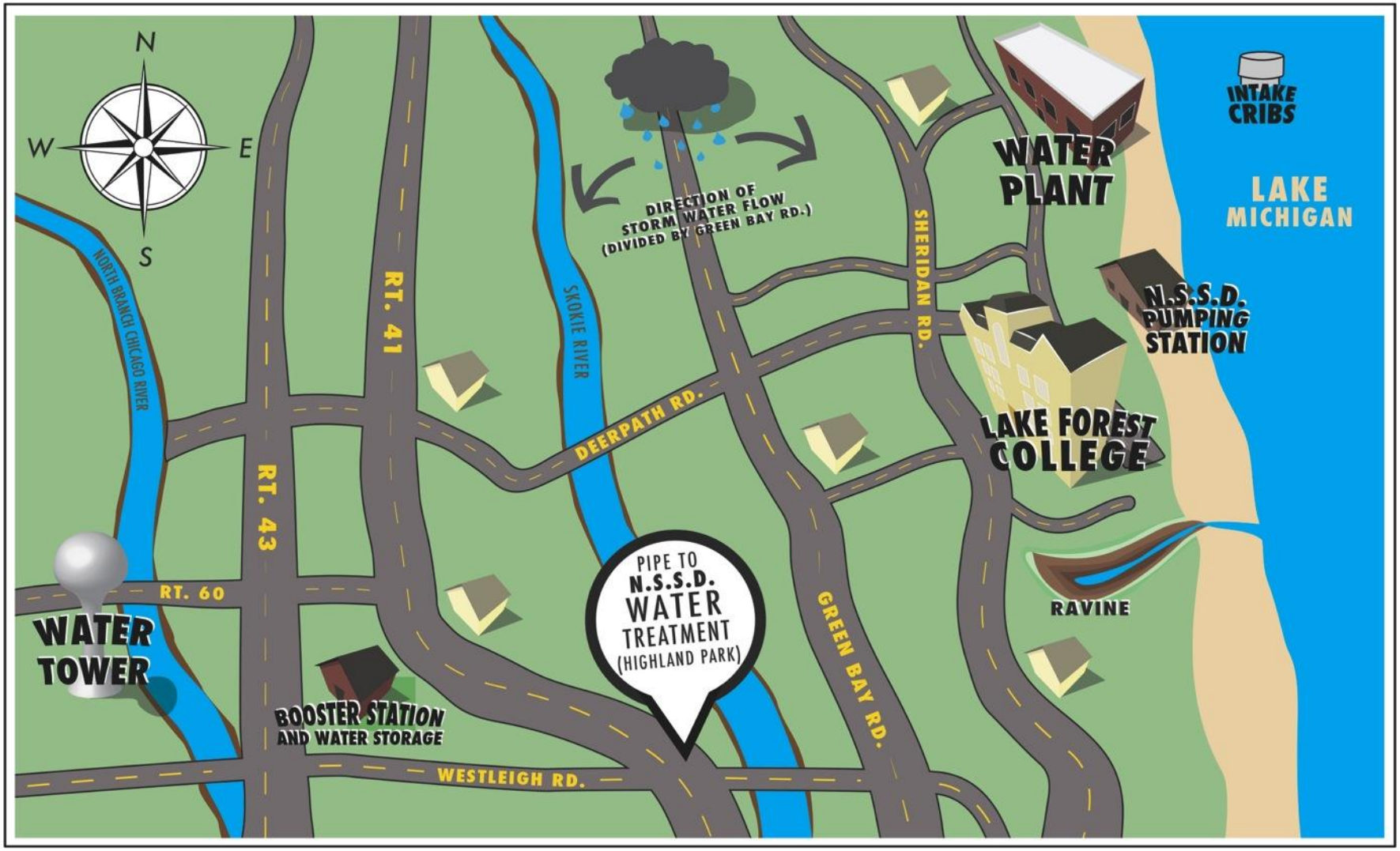


Questions and Discussion


N
W
E
S
NORTH BRANCH CHICAGO RIVER
RT. 41
RT. 43
SKOKIE RIVER
DIRECTION OF STORM WATER FLOW (DIVIDED BY GREEN BAY RD.)
SHERIDAN RD.
WATER PLANT
INTAKE CRIBS
LAKE MICHIGAN
N.S.S.D. PUMPING STATION
DEERPATH RD.
LAKE FOREST COLLEGE
RT. 60
WATER TOWER
PIPE TO N.S.S.D. WATER TREATMENT (HIGHLAND PARK)
GREEN BAY RD.
RAVINE
BOOSTER STATION AND WATER STORAGE
WESTLEIGH RD.