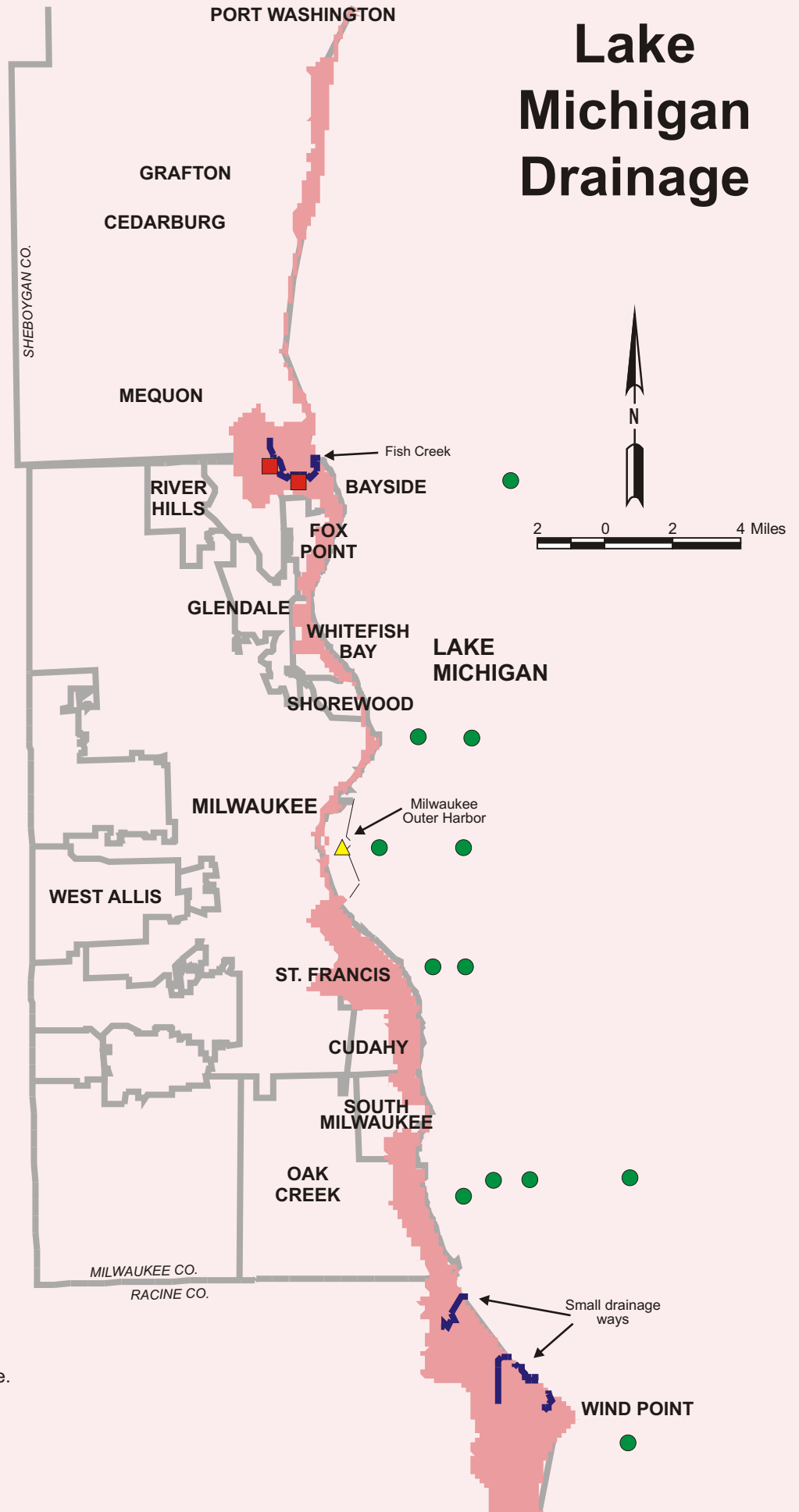


Fecal Coliform Map

Lake Michigan Drainage



- Meets Water Quality Standards at least 85% of the time.
- ▲ Meets Water Quality Standards between 50% and 85% of the time.
- Meets Water Quality Standards less than 50% of the time.

Fecal Coliform & E. coli Bacteria

One of the greatest threats to swimmable water is the presence of bacteria or other pathogens in the water. Common indicators used to determine the potential presence of human pathogens (disease-causing organisms) are *fecal coliform* and *E. coli* bacteria. These microscopic organisms live in the intestines of warm-blooded animals including humans and can be found in fecal waste. Although these bacteria don't necessarily cause disease themselves, they do indicate the possible presence of other disease-carrying organisms that live in the same environment.



Storm sewer outfall to beach area.

Testing water for either fecal coliform or E. coli bacteria is important for public safety. Fecal coliform or E. coli bacteria in high numbers, whether from stormwater runoff, agricultural or livestock management practices, or combined and sanitary sewer overflows, indicates a potential health risk for drinking, bathing, and swimming in contaminated water.



Fecal coliform and E. coli bacteria survival is dependent on specific environmental conditions that are highly variable and change quickly. This makes predicting bacteria populations within the waterways difficult. For example, although spring rains may wash more fecal matter into the waterway, cool water temperatures may prevent them from flourishing. During the summertime, increased exposure to sunlight (with its ultraviolet disinfection properties) may limit bacterial numbers even though warmer water temperatures exist.

Higher amounts of fecal contamination normally occur during wet weather from contaminated runoff reaching the waterways. Monitoring of stormwater runoff in urbanized areas has shown surprisingly high levels of fecal coliform bacteria. Common sources for these high bacterial levels found in urban and rural stormwater runoff include pet wastes, gull and goose droppings, wildlife or livestock operations or manure spreading on farmlands. Other major sources include combined sewer (CSO) and sanitary sewer (SSO) overflows and failing septic systems.

Fecal coliform bacteria is routinely tested in the Lake Michigan while E. coli is mainly used to monitor beach health.



Fecal Coliform bacteria levels in urban stormwater runoff can range from several 100 counts per 100 milliliters of water to well over a million counts! The Wisconsin Water Quality Standard for fecal coliform for most surface water designated for recreational use is 200 counts per 100 milliliters of water.

Fecal Coliform Stats

Bacteria levels are generally very low in the nearshore waters of the Lake Michigan Drainage area. Higher bacteria levels are found in Milwaukee's Outer Harbor and along some area beaches where water circulation is poor. Recent research conducted in Milwaukee, Racine and elsewhere using DNA genetic marking has shown that high E. coli levels at area beaches are due primarily to waterfowl, particular gulls, and stormwater runoff. Bacteria levels show up consistently after large storms, when contaminated runoff enters the waterways. Fecal coliform concentrations are reported in units of bacterial colonies per 100 milliliters of water.