

Carlton-Cook-Lake-St. Louis Community Health Board
CHAAP 2008 – Environmental Health Data Table
Combined Four County Indicators– Final Version

Environmental Health Data Indicators	CARLTON YEAR	COOK YEAR	LAKE YEAR	ST. LOUIS YEAR	STATE YEAR	SOURCE
Number of Food Beverage and Lodging (FB&L) Establishments	2007 - 138	2007 - 173	2007 - 147	2007 - 1140		1 16
Most Frequently Cited Risk Factors on FB&L Inspections	2007 1. Unclean food contact surfaces 2. Cold holding 3. Lack of Certified Food Manager 4. Date marking 5. Cross-connections - plumbing	2007 1. No Certified food manager 2. Unclean food contact surfaces 3. Food contact with unclean utensils 4. Plumbing repairs 5. Toxic item storage	2007 1. Microbial Control/Hot & Cold holding) 2. Food Manager Certification 3. Toxic Supplies and Applications/Storage 4. Plumbing Maintenance/Cross Connections 5. Sanitizing/Clean Equipment	2007 1. Cross Contamination 2. Lack of Certified Food Manager 3. Cold Holding 4. Personal Hygiene 5. Unsafe Food Source		1 MDH 16 Co PH: Lake and St. Louis Counties
Foodborne Outbreaks (a) -Number of cases -Number confirmed	2006 5 cases 1 confirmed	2006 0 cases 0 confirmed	2006 0 cases 0 confirmed	2006 0 cases 0 confirmed	2006 1236 cases 80 confirmed	2
Number of Hazardous Material Releases (events) (b)	2006 – 2 Releases 0 Injured Individuals	2006 – 0 Releases 0 Injured Individuals	2006 – 2 Releases 1 Injured Individuals	2006 – 13 Releases 2 Injured Individuals	2006 – 546 Releases	2
Number of Owner Occupied Homes Built prior to 1980 % of total housing units (2000 Census) (c)	10,128 est. 73.8%	2,751 est. 58.5%	5,445 est. 79.5%	80,834 est. 84.5%	1,433,607 69.4%	3
Total Blood Lead Levels Tested (Children 0-72 months)	2006 - 639	2006 - 33	2006 - 174	2006 - 3430	2006 - 85,746	2
Blood Lead Levels 10-14.9 ug/dL ² (Children 0-72 months)	2006 - 7	2006 - 1	2006 - 1	2006 - 36	2006 - 841	2
Blood Lead Levels 15- 19.9 ug/dL ² (Children 0-72 months)	2006 - 0	2006 - 0	2006 - 0	2006 - 7	2006 - 239	2
Blood Lead Levels 20 ug/dL or greater (Children 0-72 months)	2006 - 0	2006 - 0	2006 - 0	2006 - 10	2006 - 210	2

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Public Health Nuisances Confirmed Reported / Resolved in reporting year	2007 1 Confirmed 1 Removed, abated or resolved	2007 2 Confirmed 2 Removed, abated or resolved	2007 12 Confirmed 20 Removed, abated or resolved	2007 82 Confirmed 70 Removed, abated or resolved		4
Public Health Nuisances – Top 3 Complaints	2007 1. Mold 2. Garbage/Junk Houses 3. Accumulation of Junk & Rubbage	2007 1. Elevated radon 2. Improper sewage disposal 3. Accumulation of Junk & Rubbage	2007 1. Mold 2. Garbage/Junk House, 3. Rabies calls	2007 1. Improper sewage disposal 2. Garbage ontainment 3. Accumulation of Decaying Matter		4
Radon Tests Completed by County Residents and Tracked by County Staff (d)	2005 - 120 2006 - 171 2007 - 53	2007 – 6	2007 – 7	2007 - 232		16
Number of Elevated Radon Tests (over 4 pCi/L)	2005 - 70 (58%) 2006 - 60 (35%) 2007 - 26 (49%)	2007 – 4 (67%)	2007 - 3 (43%)	2007 - 58 (25%)		16
Total Tons of Recyclable materials collected from residents and organizations (1 ton = 2,000 lbs.)	2004 - 5,250 tons 2005 - 5,213 tons 2006 - 4,907 tons	2004 - 1,540 tons 2005 - 1,550 tons 2006 - 1,412 tons	2004 - 2,413 tons 2005 - 4,090 tons 2006 - 2,760 tons	2004 - 52,619 tons 2005 - 61,483 tons 2006 - 62,748 tons	2004 - 2,421,765 2005 - 2,480,353 2006 - 2,523,635	6
Total Tons of Municipal Solid Waste Sent to landfills (1 ton = 2,000 lbs.)	2004 - 12,693 tons 2005 - 13,060 tons 2006 - 13,137 tons	2004 - 4,021 tons 2005 - 4,481 tons 2006 - 4,745 tons	2004 - 6,501 tons 2005 - 5,566 tons 2006 - 6,667 tons	2004 - 54,560 tons 2005 - 54,066 tons 2006 - 54,039 tons	2004 - 3,344,918 2005 - 3,394,341 2006 - 3,379,435	6
Estimated Number of People Burning or Burying their Garbage and Estimated Tons Burned or Buried. (On site disposal) (e)	2004 2100 people 881 tons 2005 1658 people 696 tons 2006 1631 people 685 tons	2004 71 people 30 tons 2005 71 people 30 tons 2006 71 people 30 tons	2004 600 people 252 tons 2005 600 people 252 tons 2006 600 people 252 tons	2004 *9486 people *3982 tons 2005 *9488 people *3983 tons 2006 *9489 people *3983 tons <i>*includes WLSSD</i>	2004 191,883 people 80,543 tons 2005 188,065 people 78,940 tons 2006 182,456 people 76,586 Tons	6

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Meth Lab Busts	2005 - 0 2006 - 0 2007 - 3	2007 - 0	2007 - 0	2005 - 3 2006 - 3 2007 - 0		7
Septic Systems Failing – estimated percent	2007 - 17%	2007 - 35%	2007 - 11%	2007 - 40%		8
Septic Systems – Est. Percent of Systems that Constitute a Danger to Physical Safety	2007 - 3%	2007 - 5%	2007 - 8%	2007 - 5%		8
Number of MN Lake Superior Beaches Monitored (f)	N/A	2005 - 10 2006 - 10 2007 - 11	2005 - 11 2006 - 11 2007 - 11	2005 - 18 2006 - 18 2007 - 17		9
Number of MN Lake Superior Beach Advisories	N/A	2005 - 1 2006 - 2 2007 - 5	2005 - 3 2006 - 2 2007 - 3	2005 - 29 2006 - 12 2007 - 25		9
Number of Non Community Drinking Water Tests: (non community) <i>*Base tests only – Initial annual water test at a facility or test taken after a coliform incident has been cleared. May be more than 1 base test due to multiple wells or water sources. (g)</i>	2006 - 113 2007 - 109	2006 - 453 2007 - 82	2006 - 258 2007 - 238	2006 - 921 2007 - 771		13, 16
Number of Non Community Systems with Confirmed Positive Tests for Coliform or E Coli: (g)	2006 - 3 2007 - 5	2006 - 21 2007 - 10	2006 - 18 2007 - 12	2006 - 42 2007 - 53		13, 16
Number of Food Beverage and Lodging (FB&L) Establishments Tested for Drinking Water and Confirmed Positive Coliform	2007 - 38 Tested Confirmed Positive 2	2007 - 72 Tested Confirmed Positive - 8	2007 - 75 Tested Confirmed Positive - 7	2007 - 223 Tested Confirmed Positive - 20		13, 16

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Community Water Testing * Total Number of Municipal Samples Taken (g)	2006 - 65 2007 - 47	2006 - 3 2007 - 0	2006 - 10 2007 - 4	2006 - 100 2007 - 151		13
Community Water Testing * Number of Municipal samples tested Positive for Coliform (g)	2006 - 0 2007 - 0	2006 - 0 2007 - 0	2006 - 0 2007 - 2	2006 - 4 2007 - 19		13
Community Water Testing * Total Number of Non-Municipal Samples (g)	2006 - 6 2007 - 3	2006 - 6 2007 - 4	2006 - 7 2007 - 4	2006 - 11 2007 - 10		13
Community Water Testing * Number of Non-Municipal Samples Tested Positive for Coliform (g)	2006 - 0 2007 - 0	2006 - 0 2007 - 0	2006 - 0 2007 - 0	2006 - 0 2007 - 0		13
Recreational Lake Quality – Number of Lakes monitored by Volunteers in the Citizen Lake Monitoring Program (CLMP) (h)	13 Lakes Monitored	95 Lake Monitored	121 Lakes Monitored (Highest CLMP Partipation)	102 Lakes Monitored	1,263 Lakes Monitored	20
Number of Lakes in Each County (counted in 1968)	74	812	817	939	15,291	21
Notable Secchi Readings:	Deepest Secchi Transparency Rdg in Carlton Co. Little Hanging Horn: 14 feet	<u>Third Deepest Secchi Transparency Rdg:</u> Clearwater Lake : 31 Feet	<u>Deepest Individual Secchi Transparency Reading in State:</u> Knife Lake - 60 feet	<u>Second Deepest Secchi Reading in State:</u> Sabin Lake: 54-57 feet	<u>Statewide Mean Secchi Transparency Reading:</u> 9.9 feet	

Regional Environmental Indicators

	2006	2007	Source
Well Water Tests **ERA Labs	610 Total Tested 120 Coliform positive (20%) 14 E coli positive (3%)	578 Total Tested 86 Coliform positive (15%) 22 E coli positive (4%)	18 *Represents only samples from private individuals in MN.
** Northeast NE Tech Labs		754 Total Tested 96 Coliform positive (13%)	17
** Carlton Co. Zoning Tested for Coliform & E coli		2007 283 total tested 16 positive (6%)	10
WLSSD Rain-Related Sewage Overflows (tracked by WLSSD) and Gallons (when Known) (i)	2 overflows 55,000 gallons	44 + overflows Over 18.3 million gallons	15
Air Quality Index Tests (AQI) Days with AQI > 100 (j)		Duluth, Ely and Grand Portage Duluth - 2 days Ely - 0 days Grand Portage - 0 days Detroit Lakes – 3 days Rochester - 8 days Mpls. / St. Paul - 9 days (High level due to Fine Particulate Matter)	19
Air Quality Tests Average AQI		Duluth - 42.96 Ely - 28.95 Grand Portage - 15.56 Detroit Lakes - 40.09 Rochester - 52.26 Mpls. / St. Paul - 52.61	19

Sources:

1. MN Department of Health (MDH) – Bemidji/Duluth Regional Office
2. MDH MN County Health Tables www.health.state.mn.us
3. www.factfinder.census.gov
4. MDH –Planning and Performance Measurement Reporting System – Co PH
5. CHB – Carlton Cook Lake St. Louis Counties Community Health Board
6. MPCA SCORE Report - pca.state.mn.us
7. Carlton, Cook, Lake and St. Louis Counties Sheriff Dept.
8. 2007 SSTS Annual Report – Carlton, Cook, Lake St. Louis Co Planning and Zoning
9. MPCA – Heidi Bauman, MN Lake Superior Beach Monitoring Program
10. Carlton, Cook, Lake and St. Louis Counties’ Planning and Zoning Departments
11. ERA Labs
12. NE Tech. Labs
13. FBL – MDH Drinking Water Protection Section, EH Division
14. MDH Duluth Office - Mike Luhrson
15. WLSSD – Western Lake Superior Sanitary District Commun Relations Rep
16. Carlton, Cook, Lake and St. Louis Counties Public Health & Human Services
17. NE Tech Labs – Renee (lab mgr) 742-1042
18. ERA Labs – Bob Magnuson 727-6380 bob@eralabs.com
19. MPCA – www.pca.state.mn.us/data/edaAir/
20. MPCA – Citizen Lake Monitoring Program 2007 Report www.pca.state.mn.us/publications/wq-lar2-07.pdf
21. DNR - http://files.dnr.state.mn.us/publications/waters/INTRO_BULL25.pdf

Footnotes:

- (a) A confirmed **foodborne disease** outbreak is an incident in which two or more people experience a similar illness after a common food or meal, and epidemiologic evaluation implicates the food or meal as the source of illness. Confirmed outbreaks may or may not be laboratory-confirmed.
- (b) **Hazardous materials** are released daily throughout Minnesota as a result of industrial, agricultural, and domestic spills of acids, ammonia, and other chemicals which can cause injuries and force evacuations. The Hazardous Substances Emergency Surveillance (HSEES) program collects this data. This does not include releases that involve petroleum products exclusively, such as diesel fuel or propane, nor releases permitted by the Minnesota Pollution control Agency or a chronic release, such as a several-month leak from an acid holding tank.
- (c) **Lead:** Although lead-based house paint has long since been taken off the market, children living in older homes are threatened by chipping or peeling lead paint, or excessive amounts of lead-contaminated dust. More than 80 percent of homes built before 1978 contain lead paint. Even at low levels, lead poisoning in children can cause IQ deficiencies, reading and learning disabilities, impaired hearing, reduced attention spans, hyperactivity and other behavior problems. Pregnant women poisoned by lead can transfer lead to a developing fetus, resulting in adverse developmental effects. More than 80% of homes built before 1978 contain lead paint.
- (d) **Radon** is a naturally occurring radioactive gas, which means it continuously decays and releases radiation. It is produced from minerals in soil, such as uranium and radium. It is colorless, odorless and tasteless. The U.S. Environmental Protection Agency estimates that each year 21,000 people die of lung cancer as a result of being exposed to elevated levels of radon. Radon is the second leading cause of lung cancer for smokers and the leading cause of lung cancer for non-smokers. Although radon is present throughout the environment, radon levels indoors are generally higher which increase the risk of cancer. Much of the soil in the Upper Midwest contains widespread uranium and radium. These minerals continuously break down to release radon gas. Therefore, Minnesota’s geology homes have basements that are used as living spaces. MDH estimates that about one in three (1/3) Minnesota homes have enough radon to pose a significant risk to the occupants’ health over many years of exposure.
- (e) **Estimation of Burning/Burying Garbage:** Each solid waste dept or district uses household population and customer numbers from haulers to determine those with no service. They use formulas and records to determine those who self haul; the remainder burn/bury garbage. These figures are supposed to be adjusted annually with population change estimates.
- (f) **Beaches** on Lake Superior are monitored for E coli levels and an advisory is posted if found. Advisory remains posted and beaches are retested until levels are brought down. A beach may have more than one advisory throughout the season if re-contaminated. Direct testing for pathogens is expensive and impractical, as pathogens are rarely found because they usually occur sporadically and mostly at low levels. Instead, public health agencies look for the presence of “indicator” species, so called because their presence indicates that fecal contamination may have occurred.
- E.Coli and Fecal Coliform:** The two most commonly used indicators for recreational waters are fecal coliforms and E. coli (short for Escherichia coli). These are bacteria that live in the lower intestines of warm-blooded animals, including wildlife, farm animals, pets and humans and are excreted in their feces. In fact, the bacteria may constitute a significant fraction of fecal waste. E.coli and fecal coliform are not usually pathogenic, but their presence can indicate sewage contamination, perhaps accompanied by disease-causing pathogen.

(g) **DRINKING WATER** –

Public Water Supply: To be considered “public,” a water supply system must provide water to people other than those who own or operate the system. It must also have more than 15 service connections, or provide water to more than 25 people.

Two Types of Systems: Community and Non-Community:

Community systems (residential):

Municipal systems: Serving towns or cities

Non Municipal systems: Provide water to people in a variety of residential locations, including manufactured home parks/mobile home park, apartment buildings, housing subdivisions, colleges, hospitals and correctional facilities (privately owned)

Noncommunity Systems (nonresidential)

Transient (ever-changing population), e.g., truck stops, rest stops, retail businesses, shopping malls, etc.

Non Transient, (stable population groups) e.g., schools, factories, workplaces, churches, day care facilities, etc.

Base Test: Initial annual water test at a facility or test taken after a coliform incident has been cleared. There may be more than 1 base test per facility due to multiple wells or water sources.

- (h) **Recreational Lake Water Testing:** Data taken from the 2007 Report on the Transparency of Minnesota lakes – May 2008. The MPCA completes lake assessments on thousands of lakes and also administers a Citizen Lake Monitoring Program (CLMP) run by volunteers who conduct simple water-quality checks regularly. The most common test is a Secchi Disk Reading which is used to monitor the lake’s transparency or clarity. Water transparency is an easy measurement that tells a lot about a lake’s water quality by indicating the amount of light penetrating into a lake. It also provides an indirect measure of the amount of suspended material in the water, which may indicate the amount of algae in the water. Additional Lake Assessments are completed by MPCA and sometimes county staff. These assessments assess Total Phosphorus, Chlorophyll-a and Secchi transparency. Lakes can be searched individually at www.dnr.state.mn.us/lakefind/

- (i) **What is a Sanitary Sewer Overflow?** Average, daily flow of water through a community’s Sanitary Sewer system can be very different than the flow seen during a large rain storm or in spring during high snowmelt runoff. This increase in water does not mean that residents are suddenly creating more wastewater (water that goes down drains and toilets). It usually means that “extra” “clear” water is getting into the sanitary sewer system through the process of Inflow and Infiltration. Wastewater plants are sized to handle much more than “average” daily flow. In Duluth, average daily flow to the Western Lake Superior Sanitary District is about 48 million gallons per day. The treatment facility can handle up to about 120 million gallons per day. On rainy days, this flow may rise to well over 100 million gallons per day, and in extreme situations, considerably more. See what happened at WLSSD from a huge storm on July 3, 2003. When a lot of “extra” water that should be handled by the storm sewer system, that drains water from parking lots and roads, seeps into the sanitary sewer system, the capacity of the pipes in the collection system can be overloaded. Water cannot reach the treatment plant, as the pipes become pressurized and the system overflows before the water is delivered to the treatment plant. This is called a sanitary sewer overflow (SSO). This problem exists in many cities around Lake Superior and throughout the U.S.. This can also occur during rain events in cities that have a combined sanitary sewer and storm sewer system. Combined sewer overflows (CSOs) are perhaps a more difficult problem because the systems were never separate to begin with. These overflows mean that untreated or partially treated wastewater and sewage can back up into basements, run down streets or directly enter water bodies such as creeks and rivers or even Lake Superior. Untreated wastewater contains pathogens that can make humans sick, and contain high levels of nutrients, organic matter and solids that can cause algae blooms and other eutrophication impacts in the water bodies.

(j) **Air Quality Index:**

The air quality index (AQI) is a standardized indicator of the air quality in a given location. It measures mainly ground-level ozone and particulates (except pollen count) but may also include sulfur dioxide and nitrogen dioxide. Levels of 0-50 is considered good. The AQI can worsen (go up) due to lack of dilution with fresh air. Stagnant air, often caused by an anticyclone or temperature inversion, or other lack of winds lets air pollution remain in a local area. On these days, the news media may ask the public to carpool or use public transport, or take other air pollution prevention measures such as teleworking.