VILLAGE OF NORRIDGE

MS4 PROGRAM

(SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS)

PREPARED BY HANCOCK ENGINEERING CO., NOVEMBER 2017

STORMWATER MANAGEMENT PROGRAM PLAN

VILLAGE OF NORRIDGE

COOK COUNTY, ILLINOIS

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ILR40 Permit Background

The Village of Norridge is an operator of a Municipal Separate Storm Sewer System (MS4), per the Illinois Environmental Protection Agency's (IEPA) National Pollution Discharge Elimination System (NPDES) Phase II Program. The ILR40 NPDES Permit for MS4 communities requires that the Village of Norridge develop, implement, and enforce a *Stormwater Management Program Plan (SMPP)* designed to reduce the discharge of pollutants into neighboring waterways to the maximum extent practicable, to protect water quality, and to satisfy the water quality requirements as intended by the Clean Water Act (as amended in 1987).

6 Minimum Control Measures

The SMPP encompasses all aspects of the Village of Norridge's NPDES Phase II Program. There are 6 minimum control measures to be implemented within the SMPP, as described below:

1. Public Education and Outreach

- The Village provides and distributes various stormwater related educational information within its newsletter. Samples of the material are included in **Appendix A** of this plan. The newsletter may be accessed online via the Village website: www.villageofnorridge.com

- The Village provides EPA informational handouts at Village Hall, entitled "After the Storm", "Clean Waters", "Green Infrastructure for Climate Resiliency", and others included in **Appendix B** of this plan.

- The Village also maintains the following links to EPA MS4 webpages:

  https://www.epa.gov/npdes/npdes-stormwater-program
  https://www.epa.gov/npdes/national-menu-best-management-practices-bmps-stormwater#edu

The public education materials strive to cover the following key aspects related to the Public's involvement with stormwater:

1. The reduction of pollutants in storm water discharge.
2. The hazards associated with illegal discharges and improper waste disposal.
3. The benefits of green infrastructure strategies including rain gardens, rain barrels, bioswales, permeable pavements, green roofs, native plants, and other processes that promote infiltration, evaporation, and reuse of stormwater.
4. The effects of climate change as relates to storm water discharge.

2. Public Participation and Involvement

- The Village of Norridge provides a public meeting annually to share information regarding the SMPP and entire MS4 Program to the public, as required by the MS4 permit. The public meeting requirement is addressed at a Village Board Meeting.

- The Village of Norridge is an active member community of the Lower Des Plaines River Watershed Planning Council, which is a collaborative group of approximately 55 various municipalities and organizations. There are quarterly meetings for stakeholders to attend and be involved. The Village supports Norridge resident stakeholder involvement in this organization. The link to the website may be found at http://www.nwmc-cog.org/Products-and-Services/Stormwater-Management/Lower-Des-Plaines-River-Watershed-Planning-Council.aspx

- Current volunteer opportunities exist through local boy and girl scout organizations, as well as regional grass root environmental organizations. The Village continues to look to for volunteer opportunities and inform the residents as opportunities arise. The Village is also evaluating a storm drain stenciling program and associated volunteer pool.

- The Village has begun review and identification of any Environmental Justice Areas within its boundaries. Representative data and maps are included in **Appendix C** of this plan. The information is taken from the EPA's Environmental Justice Division. The intent is to provide all groups within the community the same degree of protection from environmental and health hazards; and to ensure prioritization of effort with regard to the fair distribution of environmental burdens and benefits. Further information on environmental justice may be found at www.epa.gov/environmentaljustice

3. Illicit Discharge Detection and Elimination

- The Metropolitan Water Reclamation District of Greater Chicago (MWRD) assumed authority over storm water management in Cook County pursuant to the passage of Public Act 93-1049 by the Illinois State Legislature on November 17, 2004. The act also required the preparation and adoption of a countywide storm water management plan and the development of a storm water management regulatory ordinance. The Village adheres to the requirements of the Cook County Watershed Management Ordinance (WMO) as administered by the MWRD. The WMO was adopted May 1, 2014 and amended July 10, 2014 by the MWRD Board of Commissioners. Certain requirements pertain to illegal connections and monitoring of such illicit discharges.

- The Village maintains its own Illicit Discharge and Illegal Dumping Ordinance with penalties within the Village Code, Chapters 98-215, 98-216, 98-217, and 98-218. A copy of the ordinances are included in **Appendix D** of this plan.

- The Village has developed an Illicit Discharge Detection and Elimination (IDDE) program to detect and reduce Illicit connections, discharges, and illegal dumping. The program includes the following:

  a. Annual dry weather visual inspection of all outfalls and documentation on associated forms. The form may be found within **Appendix E** of this plan.
  b. Annual inspection of retention and detention basins.
  c. Review of annual water quality testing reports at critical locations along Silver Creek, as performed by the MWRD.
  d. Encouragement of resident reporting of observed discharges.
  e. Discouragement of illicit connections, discharges, and illegal dumping by publishing associated penalties on Village website and within newsletter.
  f. Development of a complete Village wide outfall inventory. The list of outfalls is included in **Appendix F** of this plan.
  g. Development of an updated Village wide storm sewer system map. The system map is included in **Appendix G** of this plan.
  h. Village membership within the West Cook County Solid Waste Agency (WCCSWA). The WCCSWA offers/sponsors numerous programs throughout the year to allow for recycling and disposal of electronics and household hazardous waste. This offers an alternate to improper disposal or illegal dumping, at no cost to the resident.
  i. Identification of Significant Industrial Users (SIUs). The Village recognizes these "critical users" and gives high priority to the inspection of the SIU facilities. A list of all of the SIUs within Cook County as classified by the MWRD may be found in **Appendix H** of this plan. The Village of Norridge does not currently maintain an SIU.

4. Construction Site Runoff Control

- The Village adheres to the recently approved Cook County Watershed Management Ordinance (WMO) as administered by the MWRD. The Cook County WMO contains Best Management Practices (BMPs) to regulate runoff from construction sites. The regulation pertains to soil erosion and sediment control, consideration of water quality of discharge, and reduction of pollutants.

- The Village adheres to the ILR10 NPDES Permit for Storm Water Discharges from Construction Sites, for any construction project with a land disturbance of over 1 acre. The associated requirements for sites at or above the 1 acre threshold are as follows:

  a. Submittal of a Notice of Intent (NOI) Permit to the IEPA for such activities.
  b. Submittal of a Storm Water Pollution Prevention Plan (SWPPP) that includes provisions as described in the most recent edition of the Illinois Urban Manual.
  c. Sites requiring a SWPPP must have a signed certification on site as well as a copy of the permit.
  d. Village site plan review, including review of BMPs

- The Village requires soil erosion and sediment control measures to reduce pollutants in storm water runoff from construction activities. This is achieved through a plan review

process that considers water quality, site inspection and enforcement of control measures, and penalties to ensure compliance.

- The Village records inquiries and complaints from residents with regard to Erosion Control and Sediment Runoff. A specific form is used and filed for recordkeeping purposes. A sample of the form may be found in **Appendix I** of this plan.

5. Post Construction Site Runoff Control

- The Village adheres to the recently approved Cook County Watershed Management Ordinance (WMO) as administered by the MWRD. The Cook County WMO requires the reduction of the discharge of pollutants, reduction of volume, and reduction in velocity of storm water flow. Key detailed requirements within the WMO permitting process include the following items:

  a. Site Runoff Plan
  b. Stormwater Calculations
  c. Base Flood Elevation Determination
  d. Volume Control Plan
  e. Detention Facility Plan

  The Village also abides by the MWRD's WMO Article 4 requirements for Permanent Erosion Control measures, as well as Article 9 Maintenance and Monitoring Plan where appropriate.

- Village Flood Protection Code, Chapter 12-1
  a. The code includes final stabilization and restoration measures for floodplains, disturbed areas in flood fringe, and designated floodways. The pertinent sections of the code may be found in **Appendix J** of this plan.

- The Village ensures that all regulated construction sites maintain post-construction BMPs that meet or exceed the requirements of the ILR10 NPDES Permit.

- The Village will continue to review the current BMPs for Construction Site Runoff Control with respect to potential climate change impacts and modify as appropriate.

- The Village will continue to review the current BMPs for Construction Site Runoff Control with respect to recently developed Green Construction methods and implement as appropriate.

6. Pollution Prevention / Good Housekeeping

- The Village maintains and adheres to an Operations and Maintenance Program to mitigate the discharge of pollutants from municipal operations and activities. The program includes the following key activities:

  a. Street sweeping
  b. Catch Basin cleaning
  c. Sewer televising and cleaning
  d. Leaf removal
  e. Snow and ice control and disposal
  f. Reduction of pesticide and herbicide use
  g. Maintenance of Village vehicles
  h. Proper storage of oil, gasoline, salt, batteries, and other abrasive materials at maintenance yard

  Additionally, a site specific SWPPP for the Public Works yard has been created to further detail the proper storage and handling of materials within the yard, and may be found in ***Appendix K***.

- The Village provides employees with an Employee Training Program in an effort to implement BMPs into daily activities that can reduce and eliminate the discharge of pollutants into the storm sewer system. Examples of typical training activities include:

  a. Vactor Cleaning operations training
  b. Stormwater training seminar
  c. Plumbing procedures
  d. Green infrastructure and sustainability

Monitoring

The Village of Norridge provides an Annual Report as required by the NPDES Permit, which includes a detailed evaluation and monitoring results of all of the above Six Minimum Control Measures.

Recordkeeping

The Village keeps records required by the permit for 5 years after the expiration date. The pertinent records include Annual Reports, Notice of Intent (NOI) 5 Year Permit, SWMP, and all monitoring data and inspection forms. The Annual Reports, NOI, and SWMP are published on the Village website. Additionally, the records are available to the public at Village Hall during regular business hours.

Reporting

The Village submits an Annual Report to the IEPA by June 1st of each year. The Annual Report covers the period from March of the previous year to March of the current year. An assessment of the BMPs and progress towards achieving the reduction of pollutants to the maximum extent practicable (MEP) is included, as well as a summary of the activities to be performed within the next cycle, and any change in identified BMPs or measureable goals.

Reliance Upon Other Entities

The Village relies upon the MWRD with respect to Water Quality Monitoring including Total Maximum Daily Load (TMDL) and Pollutant Management. The MWRD provides monitoring data reports regarding the quality of local waterways throughout Cook County including nearby Salt Creek and Des Plaines River. The reports for each monitoring station are generated monthly and may be found at:

www.mwrd.org/irj/portal/anonymous?NavigationTarget=navurl://1677df36f20e54b6cfc29ff76f278aa5

Hard copies of the data are also submitted directly to the IEPA annually, to the attention of Alan Keller of the Permit Section.

Appendix A

Best Management Practices (BMPs)

Best Management Practices (BMPs) are techniques used to control stormwater runoff, sediment control, and soil stabilization, as well as management decisions to prevent or reduce non-point source pollution. The EPA defines a BMP as a "technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of storm-water runoff in the most cost-effective manner."

Examples of BMPs are:

1. Installing silt fences
2. Sediment basins and rock dams
3. Dust control
4. Storm drain inlet protection
5. Mulching
6. Pervious Pavers

Storm-Water Awareness

What is Storm-Water run-off?

Storm-water runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent storm-water runoff from naturally soaking into the ground.

Why is storm-water runoff a problem?

Storm-water can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing and providing drinking water.

What are the effects of Pollution?

Polluted storm-water runoff can have many adverse effects on plants, fish, animals and people.

Sediment can cloud the water and make it difficult or impossible for aquatic plants to grown. Sediment also can destroy aquatic habitats.

Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.

Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.

Debris - plastic bags, six-pack rings, bottles, and cigarette butts - washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.

Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick from eating diseased fish and shellfish or ingesting polluted water.

Polluted storm-water often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

What are steps you can take to help mitigate the problem?

1. Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.
2. Don't over-water your lawn. Consider using a soaker hose instead of a sprinkler.
3. Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
4. Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
5. Cover piles of dirt or mulch being used in landscaping projects.

Preventing Pollution in Our Waterways

Water covers over 70% of the Earth's surface and is a very important resource for people and the environment. Water pollution affects drinking water, rivers, lakes and oceans all over the world. This consequently harms human health and the natural environment.

Water pollution can come from a number of different sources. If the pollution comes from a single source, such as an oil spill, it is called point-source pollution. If the pollution comes from many sources, it is called nonpoint-source pollution.

If you want to help keep our waters clean, there are many things you can do to help. You can prevent water pollution of nearby rivers and lakes as well as groundwater and drinking water by following some simple guidelines in your everyday life.

1. Conserve water by turning off the tap when running water is not necessary. This helps prevent water shortages and reduces the amount of contaminated water that needs treatment.
2. Be careful about what you throw down your sink or toilet. Don't throw paints, oils or other forms of litter down the drain.
3. Use environmentally-friendly household products, such as washing powder, household cleaning agents and toiletries.
4. Take great care not to overuse pesticides and fertilizers. This will prevent runoffs of the material into nearby water sources.
5. Don't throw litter into rivers, lakes or oceans. Help clean up any litter you see on beaches or in rivers and lakes, make sure it is safe to collect the litter and put it in a nearby dustbin.

Illicit Discharge Reporting

It is illegal to release anything other than storm-water which is free of pollutants to the maximum extent practicable to a storm-water conveyance system! Storm-water conveyance systems include streets, curbs and gutter, storm drains, and ditches.

You may call the Village of Norridge at *708-453-0800* to report an illicit discharge or a potential illicit discharge. Please provide a detailed account of the incident (i.e. date, time, location, responsible party, nature of the incident) when you call to report an illicit discharge.

Going Native – Rethinking Plant Selection for the Home Landscape

WHAT ARE NATIVE PLANTS, NON-NATIVE PLANTS, AND WEEDS?

Native plants are plants that have evolved over hundreds or thousands of years in a particular region. They have adapted to the geography, hydrology and climate of the region and to the other species of plants and animals inhabiting the region. As a result, native plants are part of a community that provides habitat (food and shelter) for a variety of native wildlife species such as songbirds and butterflies. Native plants, when used in home landscaping, provide the ecological benefits of supporting local wildlife while requiring minimal maintenance due to their adaptation to local climate and soil conditions.

Non-native plants (also called invasive or exotic plants) are plants that have been introduced into an ecosystem in which they did not evolve. Some of these plants are introduced deliberately, as with our many exotic landscaping plants. Others are introduced accidentally, through the spread of seed by wildlife or by their inadvertent inclusion in seed mixes being sent from one area of the world to another. Some of these introduced, non-native plant species do not grow well in their new environment or do not reproduce easily so they are easily controlled and pose no threat to the native ecosystem. Other introduced species find their new home much to their liking and reproduce prolifically, even in natural, minimally managed landscapes. These aggressive, or invasive plants often have no natural enemies or controls to limit their spread. Invasive non-native plant species can be a serious threat to native plants and

communities, out-competing local species for available sunlight, water and nutrients, and do not provide the wildlife habitat benefits of the plants they replace.

Weeds are plants that are growing in places where they are not wanted. Both native and nonnative plants can become weeds in a managed landscape like a garden or agricultural field. Nonnative species tend to become invasive weeds in natural landscapes due to the lack of natural controls.

HOW CAN USING NATIVE PLANTS HELP THE ENVIRONMENT?

Landscaping with native plants has many positive factors that relate to conservation landscaping and to sustainable landscapes.

- Native plants save energy. Native plants have evolved and adapted to local conditions. They are vigorous and hardy, able to survive winter cold and summer heat. Once established, they require little or no irrigation or fertilization. They are resistant to local pests and diseases. Thus, native plants suit today's interest in "low-maintenance" gardening and landscaping.
- Native plants stay put. Native species are members of a community that includes other plants, animals and microorganisms. A natural balance keeps each species in check, allowing it to thrive in suitable conditions but preventing it from running amok. Native species rarely become invasive unless a major disturbance disrupts the natural balance of the community.
- Native plants support the local ecosystem. Native plants provide food and shelter for birds, butterflies and other desirable wildlife.
- Native plants are interesting. The diversity of native plants includes interesting flowers and foliage. Native trees and shrubs provide a variety of heights, shapes, and textures in the landscape. Many provide winter interest with their bark or seedpods. Native plants also have historical and cultural interest. Some of these plants played a significant role in Native American culture or in European exploration and settlement of the continent. Many species have value as food or medicine. Others have been used for rope and twine, fabrics and dyes, and other domestic purposes. Native plants provide the people of today with a tangible link to the past.

HOW CAN I BEGIN LANDSCAPING WITH NATIVE PLANTS?

If you are planning a landscape on an undeveloped lot, first examine the existing plants to determine which habitat type you will be working within. Identify native trees and shrubs and see how many could be incorporated into your new landscape. Protecting existing native plants in a new landscape reduces the number of plants to be purchased and provides an instant "mature landscape". Also identify invasive species for removal to prevent future problems. In an existing landscape, replace plants that are lost to disease or storm damage with native species. Lists of native and invasive plant species, and books and pamphlets describing how to use them in home landscaping, are available from a number of sources. As the natural landscape is developed, a general decline in both plant and wildlife habitat diversity occurs, leading to an overall decline in many species and a population explosion of "pest" species best suited to backyard living (including squirrels, house sparrows, and white-tailed deer). To help offset this loss, consider planting native trees, shrubs and perennials around your home and yard.

PET WASTE AND WATER QUALITY

Pet owners, take heed . . . When you clean up after your pet, do you dump the waste in the street or storm sewer? Do you leave it to decay on the sidewalk or the grass near the street? If so, you may be causing pollution and health problems.

Are you polluting our rivers?
Pollutants from improperly disposed pet waste may be washed into storm sewers by rain or melting snow. Storm sewers drain **directly** into our rivers, carrying many pollutants along with the water.

When pet waste is washed into the river the waste decays, using up oxygen and sometimes releasing ammonia. Low oxygen levels and ammonia combined with warm temperatures can kill fish. Pet waste also contains nutrients that encourage weed and algae growth. Overly fertile water becomes cloudy and green – unattractive for swimming, boating and fishing. Perhaps most importantly, pet waste carries diseases which make water unsafe for swimming or drinking.

Are you risking your health?
When pet waste is disposed of improperly, your health may be at risk too. Pets, children who play outside, and adults who garden are most at risk for infection from some of the bacteria and parasites found in pet waste. Flies may also spread diseases from animal waste. Diseases or parasites can be transmitted from pet waste to humans.

Pet waste may not be the largest or most toxic pollutant in urban waterways, but it is one of the many little sources of pollution that add up to a big problem.

What should you do with the waste you pick up?

1 Flush it down the toilet . . .
The water from your toilet goes to a septic system or sewage treatment plant that removes most pollutants before the water reaches the river. To prevent plumbing problems, do not try to flush debris such as rocks, sticks or cat litter. Cat feces may be scooped out and flushed down the toilet, but used litter should be put in a securely closed bag in the trash.

2 Put it in the trash
When taking your pets for a walk, carry a bag, shovel, or pooper scooper. Any waste left by the animal should be cleaned up immediately.

Always remove waste from areas where children play. They are the most frequent victims of diseases from pet waste.

Adapted from University of Wisconsin–Extension in cooperation with the Wisconsin Department of Natural Resources. (1999). *Pet Waste and Water Quality.* [Brochure]. Author: Johnson, C.

RETHINKING YARD CARE

About a century ago, wooden rain barrel was a familiar sight in many backyard gardens. Its purpose was simple – collecting rainfall running off a roof and storing it for future use. Often, that use would have been watering flowers and garden plants when the weather turned dry.

A rain barrel reminds us of a simpler, more sensible, approach to yard care. It suggests an awareness of personal actions and their effects on the environment, with the knowledge that simple and natural methods are sometimes the most effective ways to care for our yard.

Many sources of water pollution originate right in our yards. Fertilizer and pesticides applied to lawns in excessive amounts or before heavy rains can wash into ditches and storm sewers and eventually reach the river. Likewise, leaves and grass clippings contain nutrients such as phosphorus and nitrogen that can be washed away before collection and end up in our waters if we conveniently rake them to the curb. Leaves and grass can also clog storm sewers and contribute to localized flooding.

It is time to rethink.

In the forest environment, a layer of fallen leaves helps reduce erosion by protecting soil from the impact of falling raindrops. Leaves and grassy vegetation are decomposed by soil organisms, which return nutrients to the soil. Decaying vegetation also forms an insulating layer of mulch and adds organic matter which reduces daily temperature fluctuations and increases the soil's capacity to hold moisture.

What works for nature can work for homeowners.

By properly mowing, mulching, and composting leaves and grass clippings, the normal amount of fertilizing, watering, and weeding can often be reduced. If grass clippings are allowed to remain on lawns instead of being raked or bagged, they will produce benefits from natural recycling.

Ultimately, awareness of our personal actions could mean the difference between clean and polluted rivers.

Adapted from University of Wisconsin–Extension in cooperation with the Wisconsin Department of Natural Resources. (1999). *Rethinking Yard Care - A Series of Water Quality Fact Sheets for Residential Areas.* [Brochure]. Author: Korb, G.

LAWN WATERING

Keeping the lawn emerald-green, barefoot-soft and dandelion-free requires a significant amount of attention, and can have serious impacts on lakes, streams and groundwater. Like a summer storm, runoff from a sprinkler can wash soil, lawn chemicals, pet waste and other pollutants into storm sewers – a network of underground pipes that empty directly into the river. Water from a sprinkler flowing down one driveway might not seem like a big problem. But careless watering on hundreds of lawns can:

- Wash pollutants into the river
- Deplete water supplies.
- Actually damage the lawns it's supposed to help.

The Fine Art of Lawn Watering

Healthy lawn requires about one inch of water per week.
As a general rule, apply the water all at once rather than in several light waterings. Before you water, do some arithmetic. If it just rained 1/4 inch, you probably only need to apply 3/4 inch with the sprinkler. Avoid watering during the middle of the day when evaporation rates are highest and the water you use will do the least good. Early morning watering will minimize evaporation and help newly seeded areas through the day's heat.

Consider the weather forecast.
If there is a good chance of rain soon after that 1/4-inch rainfall, do not water at all. If the rain doesn't come, you can make up the difference.

Know your lawn.
For example, sandy soils with little organic matter will require more water, heavy clay soils less. Sloping lawns are normally drier than level, low-lying ones. Lawns under large trees, especially during cool weather, may need little or no watering. Too much water can keep the soil too moist, which damages roots. Excessive watering can also wash away seeds, cause seeds to rot before they germinate, increase the chances of disease, or slow the growth of new grass.

Reduce the Needs for Watering

1. When selecting seed, consider bluegrass and fescue mixes, which tend to be more drought-tolerant than ryegrasses.
2. To promote deep rooting and lawns that tolerate dry conditions, mow grass no shorter than two inches.
3. Do not fertilize a dry lawn – high concentrations of nutrients tend to draw moisture out of grass. Control weeds to reduce competition for soil moisture. This may be done by hand, or with careful use of broadleaf herbicides.
4. Direct downspouts away from foundations and driveways to planting beds and lawns where the water can soak in. Besides more efficient use of water, there will be less runoff from your property.
5. Learn to live with temporary brownouts. A few weeks of dormancy will not hurt the roots of a healthy lawn.

Adapted from University of Wisconsin–Extension in cooperation with the Wisconsin Department of Natural Resources. (1999). *Lawn Watering - A Series of Water Quality Fact Sheets for Residential Areas.* [Brochure]. Author: Korb, G.

Appendix B

U.S. Environmental Protection Agency/ Office of Water

Green Infrastructure for Climate Resiliency

this brochure

What is green infrastructure?

Green infrastructure uses vegetation, soils, and natural processes to manage water and create healthier urban environments. Green infrastructure can range in scale from site design approaches such as raingardens and green roofs to regional planning approaches such as conservation of large tracts of open land. In conjunction with gray infrastructure, interconnected networks of green infrastructure can enhance community resiliency by increasing water supplies, reducing flooding, combatting urban heat island effect, and improving water quality.

Climate Change Effects on Cities

City managers are feeling the effects of climate change now. Fortunately, green infrastructure can help improve community resiliency. Depending on where a community is located, climate change poses different threats to critical infrastructure, water quality, and human health:

Flooding: Heavy downpours have increased in frequency and intensity in the last 50 years, and are expected to become *more* frequent and intense as global temperatures continue to rise. Consequently, flood risk is likely to increase dramatically across the United States. The average 100-year floodplain is projected to increase by 45% by the year 2100, while annual damages from flooding are predicted to increase by $750 million. *

Did you know?

25%** of the **$1 billion** in annual flood damages in the U.S. can be linked to stormwater.

Drought: In some areas of the country, decreased precipitation associated with climate change will further stress already fragile local water supplies, especially in the southwest.

Urban Heat: Climate change will likely lead to more frequent, more severe, and longer heat waves during summer months. The City of Chicago, for example, expects to see the number of days over 100°F increase by roughly 30 days per year under "high" greenhouse gas emissions scenarios. Under lower emissions scenarios, Chicago's new average summer heat index is expected to increase to around 93°F by the end of the century – similar to current summer conditions in Atlanta, GA. **

Coastal damage and erosion: As global temperatures continue to climb, sea levels will likely continue to rise, storm surges will likely be amplified, and heavy storms will occur with greater frequency and intensity. All of these changes are expected to exacerbate shoreline erosion and damage to coastal infrastructure.

*FEMA. (2013). The Impact of Climate Change and Population Growth on the National Flood Insurance Program Through 2100. Prepared by AECOM.

***From: Reducing Damage from Localized Flooding: A Guide for Communities*, Federal Emergency Management Agency, (2005). Report #511.

**** Chicago Climate Change Action Plan – Climate Change and Chicago: Projections and Potential Impacts, Executive Summary (May 18, 2008).*

July 2014 — EPA Publication #832F14007

Community Resiliency Solutions

Manage Localized Flooding

How does it work? By reducing stormwater runoff and protecting floodplains, green infrastructure can help manage both localized and riverine floods.

Plan it. Communities may want to conduct hydrologic and hydraulic (H&H) modeling to identify a set of green and gray infrastructure practices that will meet desired flood reduction and water quality goals. When preserving open space throughout a watershed, communities may want to target areas with well drained, water-absorbing soils.

Build it. Several cities have launched programs to conserve land in or around the floodplain to manage riverine flooding. Geographic-information-based models can help estimate the flood damage benefits of green infrastructure, compare these benefits to the cost of land acquisition, and target investments in conservation towards the most cost-effective areas. Urban site-scale practices can also be sited to effectively mitigate localized flooding.

Milwaukee Metropolitan Sewerage District (MMSD) *partnered with The Conservation Fund to protect key properties around Milwaukee where major suburban growth is expected. As of 2013, the program, known as Greenseams, had protected over 2,700 acres of land capable of storing an estimated 1.3 billion gallons of water. By protecting this land, MMSD reduced future flows into receiving rivers and mitigated future flooding.*

Build Resilience to Drought

How does it work? By allowing rainwater to soak into the ground, rain gardens and green streets can help replenish local groundwater reserves. On individual properties, rainwater harvesting techniques such as rain barrels and cisterns can reduce demand for potable water.

Plan it. Becoming a drought resilient community means making the most of water when it is available, as well as storing it for later within deep groundwater reserves. Start by prioritizing areas in your community where it makes sense to locate infiltration-based features. Proper siting of green infrastructure should be considered to protect ground water supplies. For example, avoid infiltrating large quantities of water in contamination hot spots or on steep slopes.

Build it. Communities may want to consider incentives or local requirements to encourage on-site rainwater harvesting and use. By using rainwater stored in cisterns to irrigate landscaping in public parks, schools or municipal buildings, cities can reduce or eliminate the need to purchase potable water from out of town. Captured rainwater can also be used in the home for flushing.

Tucson, Arizona *passed a commercial rainwater harvesting ordinance requiring facilities to meet 50% of landscape irrigation demands using harvested rainwater. Covered facilities are required to prepare a rainwater harvesting plan and water budget, meter outdoor water use, and use irrigation controls that respond to current soil moisture conditions. Green streets also infiltrate rainwater to augment local water supplies and filter runoff to reduce water pollution. Photo credit: Watershed Management Group.*

The Delaware Living Shoreline Initiative *is stabilizing New Jersey's eroding shorelines and tidal estuaries by restoring marshland vegetation. Photo credit: Istock.com*

Protect the coast

How does it work? Coastal plants and reefs use natural processes to slow down sediment and encourage vegetative growth. Increased vegetation can protect eroding marsh edges and mitigate sea level rise. In contrast to hard structures such as bulkheads and sea walls, vegetative shorelines provide multiple ecosystem benefits such as improved water quality and aquatic habitat.

Plan it. Before moving forward with your coastal improvement project, conduct a site assessment. This process includes determining the type of shoreline you possess (slope of bank), the rate at which the shoreline is eroding, the forces that are eroding the shoreline, type of substrate, and salinity levels.

Build it. Living shorelines can be a mixture of structural and organic materials, such as native wetland plants, stone and rock structures, oyster reefs, submerged aquatic vegetation, coir fiber logs, and sand fill.

Use less energy managing water

How does it work? Treating and moving water and wastewater takes a lot of energy. By reducing rainwater flows into sewer systems, recharging aquifers and conserving water, green infrastructure can significantly reduce municipal energy use.

Plan it. Start by prioritizing where to place distributed green infrastructure practices in your community for maximum rainwater storage and infiltration. Communities with combined sanitary and stormwater sewers may want to use hydrologic and hydraulic (H&H) modeling to identify ideal combinations of green and gray infrastructure within a given treatment area.

Build it. After projects are in the ground, cities, may want to tie energy efficiency savings back to reduced demand at local power plants. EPA recently developed a tool called AVERT (Avoided Emissions and geneRation Tool) to do just this. Using county-wide datasets, AVERT can help estimate emissions reductions at electric power plants from energy efficiency or renewable energy upgrades.

Lancaster, Pennsylvania *is converting impervious areas such as parking lots (shown here in red) to permeable pavement within their combined sewer area. By using green infrastructure to infiltrate water on site, the city estimates they will reduce flows into their system by 700 million gallons – reaping over $600,000 annually in savings. Photo credit: City of Lancaster*

Need more tools and resources?

For more information on planning, funding and maintaining green infrastructure investments in your community, visit U.S. EPA's Green Infrastructure Program website here: www.epa.gov/green infrastructure

For a clearinghouse of resources to measure the multiple benefits of green infrastructure for climate resiliency, access our new Green Infrastructure and Resiliency landing page here: www.water.epa.gov/infrastructure/greeninfrastructure/climate_res.cfm

Reduce urban heat island effect

How does it work? Trees, green roofs, and vegetative cover can help reduce the urban heat island effect by shading building surfaces, deflecting radiation from the sun, and releasing moisture into the atmosphere.

Plan it. Although space in urban areas is limited, small green infrastructure practices can easily be integrated into grassy or barren areas, vacant lots or street rights of way. Green roofs are an ideal heat island reduction strategy since they provide both direct and ambient cooling effects.

Build it. Make trees business as usual in your community. Require green infrastructure improvements as part of regular street upgrades to ensure continued investment. Make water quality practices do double duty by adding trees in or around infiltration-based practices such as roadside planters to help boost roadside cooling and shading.

Lower building energy use

How does it work? Through shading, windbreak, and evapotranspiration, trees, green roofs and vegetative cover can lower ambient air temperatures in urban areas, lessening the need to turn up the AC in summer months.

Louisville, Kentucky *recently began a canopy assessment to determine how the city can use trees to address urban heat, stormwater management and other concerns. "Knowing where we lack canopy, down to the street and address level, will help our efforts exponentially." says Mayor Greg Fischer.* Photo credit: Love Louisville Trees

Plan it. Communities may find it useful to estimate cooling and energy efficiency benefits provided by trees and green roofs. Using USFS's publicly available i-Tree suite, the Mid-America Regional Council (MARC) recently produced a study that quantifies multiple benefits from urban trees in the Kansas City area. By mapping existing canopy concentrations, MARC was able to estimate the monetary value of building energy efficiency gains from tree canopy in the region.

For more information on green infrastructure visit:
www.epa.gov/green infrastructure

Photo credits: Front page, General Services Administration (GSA). Last page, Nancy Arazan/ U.S. EPA.

Clean Waters

Starting in Your Home and Yard

Going Native – Rethinking Plant Selection for the Home Landscape

Clean Waters is a collaboration of the Connecticut Sea Grant Extension Program and the University of Connecticut Cooperative Extension System's NEMO Project, educating individuals about the impacts of everyday activities on water quality and simple techniques that help protect water resources from the home well to Long Island Sound.

When the first European colonists arrived in what is now the United States, they brought from their homelands many plants and landscaping designs with which they were familiar and comfortable. Nearly three hundred and fifty years later, the American yard is still dominated by expansive lawns, symmetrically placed and shaped trees and shrubs, and flower beds of exotic plants typical of the English landscape tradition.

The native plants of North America have rarely been popular in American gardens. Early gardeners preferred the clipped yew hedges and tidy flower beds of Europe to the wild and untamed trees and flowers of nearby forests. However, native plants did have some supporters. Nearly a century and a half ago, while living on the shores of Walden Pond in eastern Massachusetts, Henry David Thoreau came to know the forest and meadows, trees and herbs in all their seasonal moods. His writings celebrated the beauty of native plants and the natural landscape. Jens Jensen, a landscape designer from the northern Midwest, strove in his work to recreate the "tapestry of living colors" beheld by early pioneers in the region. He loved the native dogwoods, crabapples and hawthorns of the Midwest. His designs for public parks and private estates included many natural woodland landscapes utilizing native plants.

Despite such support, when an era of worldwide plant exploration blossomed in the late 1800's, exotic trees and shrubs from the far corners of the earth became featured attractions in American gardens and parks. In recent years, changes in taste and environmental awareness have led to some sharing of garden space by native species and exotic favorites of years past, but many of the most popular American landscaping plants still have their roots in distant countries.

WHAT ARE NATIVE PLANTS, NON-NATIVE PLANTS, AND WEEDS?

Native plants (also called indigenous plants) are plants that have evolved over hundreds or thousands of years in a particular region. They have adapted to the geography, hydrology and climate of the region and to the other species of plants and animals inhabiting the region. As a result, native plants are part of a community that provides habitat (food and shelter) for a variety of native wildlife species such as songbirds and butterflies. Native plants, when used in home landscaping, provide the ecological benefits of supporting local wildlife while requiring minimal maintenance due to their adaptation to local climate and soil conditions.

Judy Ricketts-White

Non-native plants (also called non-indigenous, invasive or exotic plants) are plants that have been introduced into an ecosystem in which they did not evolve. Some of these plants are introduced deliberately, as with our many exotic landscaping plants. Others are introduced accidentally, through the spread of seed by wildlife or by their inadvertent inclusion in seed mixes being sent from one area

of the world to another. Some of these introduced, non-native plant species do not grow well in their new environment or do not reproduce easily so they are easily controlled and pose no threat to the native ecosystem. Other introduced species find their new home much to their liking and reproduce prolifically, even in natural, minimally managed landscapes. These aggressive, or invasive plants often have no natural enemies or controls to limit their spread. Invasive non-native plant species can be a serious threat to native plants and communities, out-competing local species for available sunlight, water and nutrients, and do not provide the wildlife habitat benefits of the plants they replace.

Weeds are plants that are growing in places where they are not wanted. Both native and non-native plants can become weeds in a managed landscape like a garden or agricultural field. Non-native species tend to become invasive weeds in natural landscapes due to the lack of natural controls.

HOW CAN USING NATIVE PLANTS HELP THE ENVIRONMENT?

Landscaping with native plants has many positive factors that relate to conservation landscaping and to sustainable landscapes.

• Native plants save energy. Native plants have evolved and adapted to local conditions. They are vigorous and hardy, able to survive winter cold and summer heat. Once established, they require little or no irrigation or fertilization. They are resistant to local pests and diseases. Thus, native plants suit today's interest in "low-maintenance" gardening and landscaping.

• Native plants stay put. Native species are members of a community that includes other plants, animals and microorganisms. A natural balance keeps each species in check, allowing it to thrive in suitable conditions but preventing it from running amok. Native species rarely become invasive unless a

Judy Ricketts-White

Landscaping with Native Shrubs

Tim Fleury, Coordinator Forestry Stewardship Program

SHRUBS FOR DRY, SUNNY AREAS

Bayberry (*Myrica pensylvanica*)
Lowbush Blueberry (*Vaccinium augustifolium*)
Ground Juniper (*Juniperus communis*)
Jersey Tea (*Ceanothus americanus*)
Sweet Fern (*Comptonia peregrina*)

SHRUBS FOR MOIST SITES

Dogwoods (*Cornus spp.*)
Elderberry (*Sambucus canadensis*)
Highbush Blueberry (*Vaccinium corymbosum*)
Inkberry (*Ilex glabra*)
Pussy Willow (*Salix discolor*)
Shadbush Serviceberry (*Amelanchier canadensis*)
Spirea (*Spirea latifolia*)
Swamp azalea (*Rhododendron viscosum*)
Sweet Pepperbush (*Clethra alnifolia*)
Viburnums (*Viburnum spp.*)
Winterberry (*Ilex verticillata*)
Witch Hazel (*Hamamelis virginiana*)

SHRUBS FOR SHADED SITES

Hazelnut (*Corylus americana, C. cornuta*)
Mountain Laurel (*Kalmia latifolia*)
Swamp Azalea (*Rhododendron viscosum*)
Viburnums (*V. acerfolium, V. cassinoides, V. alnifolium*)

WILDLIFE FOOD — SUMMER

Black Cherry (*Prunus serotina*)
Choke Cherry (*Prunus virginiana*)
Red Mulberry (*Morus rubra*)

WILDLIFE FOOD — FALL

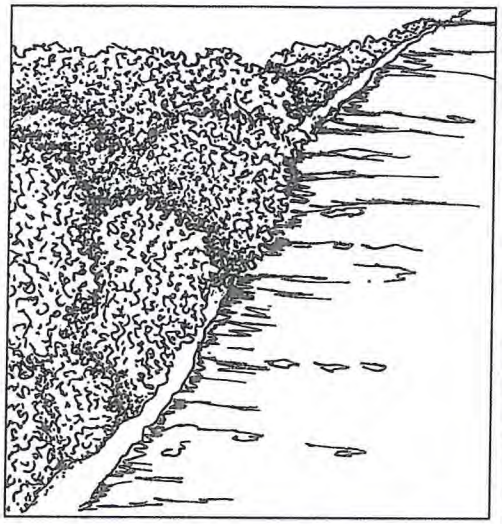
Eastern Red Cedar (*Juniperus virginiana*)
Flowering Dogwood (*Cornus florida*)
Hackberry (*Celtis occidentalis*)
Hawthorns (*Crataegus spp.*)
Hickories (*Carya spp.*)
Oaks (*Quercus spp.*)
Walnuts (*Juglans spp.*)

WILDLIFE COVER — WINTER

Atlantic White Cedar (*Chamaecyparis thyoides*)
Black Spruce (*Picea mariana*)
Eastern Hemlock (*Tsuga canadensis*)
Eastern Red Cedar (*Juniperus virginiana*)
Northern White Cedar (*Thuja occidentalis*)
White Pine (*Pinus strobus*)

major disturbance disrupts the natural balance of the community.

• Native plants support the local ecosystem. Native plants provide food and shelter for birds, butterflies and other desirable wildlife.



Judy Ricketts-White

• Native plants are interesting. The diversity of native plants includes interesting flowers and foliage. Native trees and shrubs provide a variety of heights, shapes, and textures in the landscape. Many provide winter interest with their bark or seedpods. Native plants also have historical and cultural interest. Some of these plants played a significant role in Native American culture or in European exploration and settlement of the continent. Many species have value as food or medicine. Others have been used for rope and twine, fabrics and dyes, and other domestic purposes. Native plants provide the people of today with a tangible link to the past.

Sea Grant Connecticut

The Connecticut Sea Grant College Program, based at the University of Connecticut, is part of a national network of university-based programs sponsoring coastal and marine-related research, outreach and education.

HOW CAN I BEGIN LANDSCAPING WITH NATIVE PLANTS?

If you are planning a landscape on an undeveloped lot, first examine the existing plants to determine which habitat type you will be working within. Identify native trees and shrubs and see how many could be incorporated into your new landscape. Protecting existing native plants in a new landscape reduces the number of plants to be purchased and provides an instant "mature landscape". Also identify invasive species for removal to prevent future problems. In an existing landscape, replace plants that are lost to disease or storm damage with native species. Lists of native and invasive plant species, and books and pamphlets describing how to use them in home landscaping, are available from a number of sources, including the Connecticut Department of Environmental Protection, the University of Connecticut, and Connecticut College Arboretum. The brief list included on page 3 is only to spark your imagination.

As the natural landscape is developed, a general decline in both plant and wildlife habitat diversity occurs, leading to an overall decline in many species and a population explosion of "pest" species best suited to backyard living (including squirrels, house sparrows, and white-tailed deer). To help offset this loss, consider planting native trees, shrubs and perennials around your home and yard.

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MEMO

Fact Sheet #7

Clean Waters

Starting in Your Home and Yard

The Four Seasons of Water Quality Protection

Clean Waters is a collaboration of the Connecticut Sea Grant Extension Program and the University of Connecticut Cooperative Extension System's NEMO Project, educating individuals about the impacts of everyday activities on water quality and simple techniques that help protect water resources from the home well to Long Island Sound.

A yard provides a very personal place to observe the four seasons. The first blooming bulbs of spring, tomatoes or corn of summer in the garden, fiery colors of autumn or the first winter snowfall are all important, annual events. Each season also has its own landscape maintenance needs.

Home landscape management activities have impacts far beyond the individual property lines, neighborhoods, and town boundaries because of the way landscapes are linked together by water moving through the environment. By recognizing how each home landscape is connected to the environment as a whole and managing the landscape with this connection in mind, everyone can make a contribution to protecting and restoring all natural resources, especially local water quality.

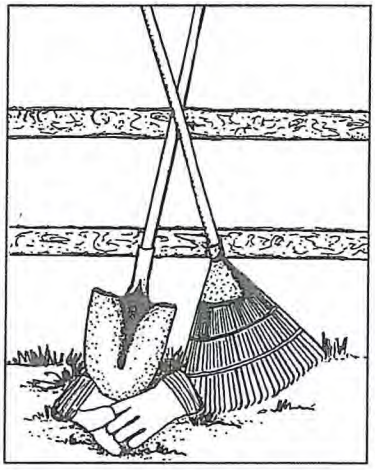
Where does one start in creating an environmentally friendly home landscape? It can seem like an overwhelming project, but it doesn't have to be. Very small changes in everyday landscape management activities in every season of the year can add up to very big changes in water quality protection.

SPRING

• Recycle winter debris. Lawns and gardens need to be raked out to remove the leaves, twigs and branches deposited during winter storms. Use this material as the base for a new compost pile OR chop it up (with a lawn mower or shredder) and use it to re-mulch around foundations, under shrubs and trees and in groundcover beds rather than going out and buying bags of bark mulch. Don't dump brush and leaves into streams or wetland areas. They add excess nutrients to the system and may cause flooding by blocking water flow.

• Sweep up leftover sand from the road or driveway to keep it out of storm drains and local water courses. This sand will contain salt and other pollutants, so don't use it in vegetable gardens or sand boxes, or dump it in a pile "out back". Sift it and store it in buckets for next winter.

• Rethink the early dose of lawn fertilizer. Avoid "weed and feed" type products that mix pesticides and fertilizers. Why pay for chemicals that you don't need or that force you to start mowing earlier and more often? Put off the first dose of fertilizer until mid-May or apply a thin layer of compost to add organic material to the soil while providing a more balanced dose of nutrients for healthy lawn growth.



Judy Ricketts-White

• Cover bare soil. If lawn areas are bare or plantings have died over the winter, don't leave exposed soil. Re-seed or mulch to prevent soil erosion. Consider dead plants an opportunity to add native species with multiple season interest to the landscape.

• Start a landscaping log. Spending a few minutes a week writing down what plants are growing well or having problems, what got eaten, and what yard chores take too much time will help when you are making plans for next year.

SUMMER

• Avoid wasting water. Invest in a rain gauge and keep track of weekly rainfall. Most plants and the lawn are happy with one inch of water a week, so

keep the hose coiled up when the rain has been coming down.

• A thick (at least two inches) layer of mulch in gardens, around shrubs and under trees prevents evaporation of water from the soil, keeping the ground cooler and plants happier. Thick mulch layers also inhibit weed seed germination. Just don't mulch heat-loving vegetables like tomatoes and squash until the soil temperature is high enough or they won't thrive. Organic mulches provide some nutrients as they decompose, reducing the need for fertilizers.

• Avoid lawn stress. Keep the lawn mower blade sharp, mow often enough that no more than one-third of the grass blade is cut off at a time, and try to mow when the grass is completely dry. A mulching mower blade recycles grass clippings while mowing, returning moisture and nutrients to the soil and reducing the need for fertilizer. (Fact Sheet #8)

• Cut down on chemicals. Cut down on or eliminate fertilizer use. Upgrade your soils by adding composted organic matter rather than chemicals that may damage the natural microbial communities in the soil and promote pest problems. Use "Integrated Pest Management" or IPM strategies to reduce the need for toxic pesticides. (Fact Sheet #4)

AUTUMN

• Gardens need bedcovers. When cleaning out vegetable and flower gardens, don't leave the soil bare for the winter. Use chopped leaves as mulch or plant a "green mulch" to add nutrients and organic matter to the soil.

• Plant things! Early autumn is the best time to transplant shrubs and other perennials and to re-seed lawns. Choose grass seed mixes that match your site. Consider adding a little clover seed for a free source of nitrogen fixation. Early autumn is the best time for a single dose of fertilizer for good grass root growth and a healthy lawn next spring. Slow-release or organic fertilizers stay where plants can use them and out of the local waters and wells. Keep watering all new plantings until the ground is frozen to give the roots plenty of opportunity to grow.

• Save the leaves. Leaves have lots of landscaping uses. Make a compost pile, chop them and mulch all the landscaping and garden beds, or create new beds under the trees from which they fell. If your property is just too small and the town has community leaf composting, use it, but go back for your leaf mulch next spring.

WINTER

• Rethink snow control. Sand and salt from snow removal are two major sources of water pollution and they aren't exactly good for the lawn or other plants either. Use them sparingly, if you must. Consider sweeping up sand between storms to re-use, cutting down on the total amount used over the winter.

• Dream and plan. Winter is the time to plan for next spring. If one doesn't exist, create a master yard plan and map out what areas are doing well and what needs improvement or replacement (a new play area? better foundation plantings?). Read magazines and booklets, visit garden centers or call extension centers to research interesting native plants that meet your needs and are suited to your specific site characteristics. Identify any invasive landscaping plant species that are taking over the natural ecosystem around your property and learn how to control them. A little planning in the quiet of winter can prevent wasted money and stressed out plants and people in the heat and hurry of summer. (Fact Sheets #5 & 7)

Each idea here is a tiny twist on "gardening as usual". Protecting water quality and the environment just requires a little thought and a little care from individuals and provides big benefits for everyone.

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Sea Grant
Connecticut

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MEMO

Fact Sheet #9

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.

- Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.
- Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

After the Storm

A Citizen's Guide to Understanding Stormwater

For more information contact:

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps

Stormwater Pollution Solutions

Residential

Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- Cover piles of dirt or mulch being used in landscaping projects.

Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- Inspect your system every 3 years and pump your tank as necessary (every 1 to 3 years).
- Don't dispose of household hazardous waste in sinks or toilets.

Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

Rain Gardens—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from roofs or paved areas can be diverted into these areas rather than into storm drains.

Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

Commercial

Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- Cover grease storage and dumpsters and keep them clean to avoid leaks.
- Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Construction

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- Divert stormwater away from disturbed or exposed areas of the construction site.
- Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.

Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- Keep livestock away from streambanks and provide them a water source away from waterbodies.
- Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- Vegetate riparian areas along waterways.
- Rotate animal grazing to prevent soil erosion in fields.
- Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.

Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- Clean up spills immediately and properly dispose of cleanup materials.
- Provide cover over fueling stations and design or retrofit facilities for spill containment.
- Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- Install and maintain oil/water separators.

Forestry

Improperly managed logging operations can result in erosion and sedimentation.

- Conduct preharvest planning to prevent erosion and lower costs.
- Use logging methods and equipment that minimize soil disturbance.
- Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- Construct stream crossings so that they minimize erosion and physical changes to streams.
- Expedite revegetation of cleared areas.

EPA
United States Environmental Protection Agency

EPA 841-F-03-003

Protecting Water Quality *from* URBAN RUNOFF

Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?

How Urbanized Areas Affect Water Quality

Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (nonporous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall and snowmelt remains above the surface, where it runs off rapidly in unnaturally large amounts.

Storm sewer systems concentrate runoff into smooth, straight conduits. This runoff gathers speed and erosional power as it travels underground. When this runoff leaves the storm drains and empties into a stream, its excessive volume and power blast out streambanks, damaging streamside vegetation and wiping out aquatic habitat. These increased storm flows carry sediment loads from construction sites and other denuded surfaces and eroded streambanks. They often carry higher water temperatures from streets, roof tops, and parking lots, which are harmful to the health and reproduction of aquatic life.

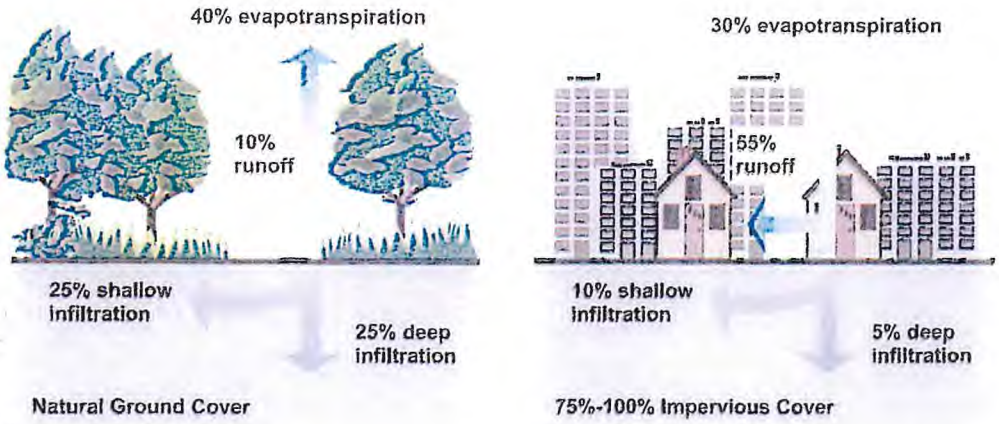
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.



Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface ruunoff. As little as 10 percent impervious cover in a watershed can result in stream degradation.

Managing Urban Runoff

What Homeowners Can Do

To decrease polluted runoff from paved surfaces, households can develop alternatives to areas traditionally covered by impervious surfaces. Porous pavement materials are available for driveways and sidewalks, and native vegetation and mulch can replace high maintenance grass lawns. Homeowners can use fertilizers sparingly and sweep driveways, sidewalks, and roads instead of using a hose. Instead of disposing of yard waste, they can use the materials to start a compost pile. And homeowners can learn to use Integrated Pest Management (IPM) to reduce dependence on harmful pesticides.

In addition, households can prevent polluted runoff by picking up after pets and using, storing, and disposing of chemicals properly. Drivers should check their cars for leaks and recycle their motor oil and antifreeze when these fluids are changed. Drivers can also avoid impacts from car wash runoff (e.g., detergents, grime, etc.) by using car wash facilities that do not generate runoff. Households served by septic systems should have them professionally inspected and pumped every 3 to 5 years. They should also practice water conservation measures to extend the life of their septic systems.

Controlling Impacts from New Development

Developers and city planners should attempt to control the volume of runoff from new development by using low impact development, structural controls, and pollution prevention strategies. Low impact development includes measures that conserve natural areas (particularly sensitive hydrologic areas like riparian buffers and infiltrable soils); reduce development impacts; and reduce site runoff rates by maximizing surface roughness, infiltration opportunities, and flow paths.

Controlling Impacts from Existing Development

Controlling runoff from existing urban areas is often more costly than controlling runoff from new developments. Economic efficiencies are often realized through approaches that target "hot spots" of runoff pollution or have multiple benefits, such as high-efficiency street sweeping (which addresses aesthetics, road safety, and water quality). Urban planners and others responsible for managing urban and suburban areas can first identify and implement pollution prevention strategies and examine source control opportunities. They should seek out priority pollutant reduction opportunities, then protect natural areas that help control runoff, and finally begin ecological restoration and retrofit activities to clean up degraded water bodies. Local governments are encouraged to take lead roles in public education efforts through public signage, storm drain marking, pollution prevention outreach campaigns, and partnerships with citizen groups and businesses. Citizens can help prioritize the clean-up strategies, volunteer to become involved in restoration efforts, and mark storm drains with approved "don't dump" messages.

Related Publications

Turn Your Home into a Stormwater Pollution Solution!
www.epa.gov/nps

This web site links to an EPA homeowner's guide to healthy habits for clean water that provides tips for better vehicle and garage care, lawn and garden techniques, home improvement, pet care, and more.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas
www.epa.gov/owow/nps/urbanmm

This technical guidance and reference document is useful to local, state, and tribal managers in implementing management programs for polluted runoff. Contains information on the best available, economically achievable means of reducing pollution of surface waters and groundwater from urban areas.

Onsite Wastewater Treatment System Resources
www.epa.gov/owm/onsite

This web site contains the latest brochures and other resources from EPA for managing onsite wastewater treatment systems (OWTS) such as conventional septic systems and alternative decentralized systems. These resources provide basic information to help individual homeowners, as well as detailed, up-to-date technical guidance of interest to local and state health departments.

Low Impact Development Center
www.lowimpactdevelopment.org

This center provides information on protecting the environment and water resources through integrated site design techniques that are intended to replicate preexisting hydrologic site conditions.

Stormwater Manager's Resource Center (SMRC)
www.stormwatercenter.net

Created and maintained by the Center for Watershed Protection, this resource center is designed specifically for stormwater practitioners, local government officials, and others that need technical assistance on stormwater management issues.

Strategies: Community Responses to Runoff Pollution
www.nrdc.org/water/pollution/storm/stoinx.asp

The Natural Resources Defense Council developed this interactive web document to explore some of the most effective strategies that communities are using around the nation to control urban runoff pollution. The document is also available in print form and as an interactive CD-ROM.

For More Information

U.S. Environmental Protection Agency
Nonpoint Source Control Branch (4503T)
1200 Pennsylvania Avenue, NW
Washington, DC 20460
www.epa.gov/nps

February 2003

H.R.2616, S.1481

Support the Urban Flooding Awareness Act

CNT

BACKGROUND

Evermore destructive storms are pummeling urban areas at an alarming rate, causing massive amounts of property damage to homes and businesses, eroding our land and streams and threatening the quality of our drinking water. What we know:

- The 2014 National Climate Assessment Report confirms major increases in precipitation across most of the country over the last 54 years, and projects even more frequent and intense rain events in the near future.
- It is believed that these storms currently cost property owners, businesses and taxpayers several billion dollars annually across the United States, but there is no good data on which to base future estimates.
- Research by the Illinois Dept. of Natural Resources shows that more than 92% of all damage claims from urban flooding in Illinois from 2007 to 2014 were outside designated floodplains, while current flood control programs focus primarily on flooding from overflowing rivers.

Thus, the vast majority of flood victims, whose homes and businesses are damaged by flooding after rainwater overwhelms local drainage systems, are left with few resources because government agencies are working with an incomplete picture of the nature and extent of urban flooding.

The steady increase in urban flooding and damage over the last few decades has three main causes: (1) increasingly frequent and intense rainfall, (2) continued development of impervious surfaces such as buildings, roads, parking lots, alleys and sidewalks and (3) aging, undersized and poorly maintained stormwater drainage infrastructure.

The Urban Flooding Awareness Act requires FEMA to direct a study to quantify these facts and develop recommendations to assist federal, state and local governments in their efforts to prevent and provide relief from urban flooding to homeowners and businesses across the country.

Chief Sponsors:
Senator Dick Durbin (IL)
Congressman Mike Quigley (IL-5)

Co-sponsors:
Congressman Steve Cohen (TN-9), Congressman Luis Gutierrez (IL-4), Congressman Jared Huffman (CA-2), Congressman Donald Payne, Jr. (NJ-10), Congressman Jared Polis (CO-2), Congresswoman Eleanor Holmes Norton (DC), Senator Sheldon Whitehouse (RI)

Current Endorsements:
Alliance for the Great Lakes
American Rivers
Association of State Floodplain Managers
Congress for New Urbanism
National Association of Realtors
Water Environment Federation

Photo credit: Kleemond Flickr, Creative Commons license

"The available records of historical flood damage are inadequate for policy evaluation, scientific analysis, and disaster mitigation planning. There are no uniform guidelines for estimating flood losses, and there is no central clearinghouse to collect, evaluate, and report flood damage. The data that exist are rough approximations, compiled by the NWS from damage estimates that are reported in many different ways. Moreover, most published summaries of the damage estimates focus primarily on aggregate national damage totals."

http://www.flooddamagedata.org/introduction.html

H.R. 2616, S. 1481

Urban Flooding Awareness Act of 2015

cnt.org/UFAA

YOUR QUESTIONS ANSWERED

Q: What is "urban flooding"?

A: Urban flooding occurs when homes, yards or streets are inundated with water from heavy rains or snow melt, damaging property, and making travel difficult and dangerous. It also results from sewer water backing up through pipes into basements, and from water seeping through foundation walls.

Q: How is "urban flooding" different from other kinds of flooding?

A: Government agencies and the media typically associate flooding with infrequent, catastrophic events such as Hurricane Sandy, and when heavy rains cause tidal surges and riverbanks to overflow. However, a recent study in Illinois[1] ("Illinois Study") suggests that the vast majority of properties affected by flooding are in urban and suburban areas, where flooding affects them every time it rains hard. For these residents and businesses, flooding happens when the run-off from roads, parking lots, yards and roofs overwhelms the sewer system and makes its way into their homes.

Q: Why is this happening? Is it new?

A: It is a national trend, and there are three primary reasons for urban flooding. First, over the last 50 years there has been an increase in the number of intense storms. Second, over the same period, development has increased the amount of impervious surfaces (in the form of buildings, streets, sidewalks and parking lots), which means that there's even less soil that can soak up this increased rainfall. Finally, in many communities the pipes intended to carry rainwater away were installed more than 50 years ago, when there was less runoff, so they were not designed for the increased runoff of today. Now many property owners are seeing water in their homes or flooding in their yards when there is just a moderate amount of rain – sometimes just an inch and a half or more.

Q: How big of a problem is urban flooding?

A: Nobody knows how many homes and businesses are affected, which is why we need this study. The Illinois Study found that properties across 99% of Illinois counties were affected at a total cost of over $2.3 billion in an 8-year period. The average claim to property owners by insurance was $6,500.

Q: Why does it matter?

A: The impacts of urban flooding can be severe – individual homeowners have spent hundreds of thousands of dollars repairing damage and in some cases have had to abandon their property altogether. Repeat flooding can also lead to foundation cracking and subsidence, and to mold, along with the associated health impacts.

Q: Doesn't insurance cover this type of flooding?

A: Yes, but the insurance policies for urban flooding are complex and not designed to deal with the problems that some property owners face every time it rains. One element of the study will be to review the role of insurance in these situations.

Q: How will a study fix the problem?

A: Understanding the scale and severity of the problem will help federal and state agencies and the insurance sector better understand how to support affected homeowners and businesses, including where to prioritize investment and action. It will also ensure that the impact of urban flooding on victims is given proper attention and recognition.

Q: How can individuals help?

A: Owners of residential and business property that experience flooding can be very helpful by completing the CNT Urban Flooding Survey. The stories and data from this survey will be provided to members of Congress to give them important information about urban flooding and the need for the national study.

1 Report for the Urban Flooding Awareness Act, June 2015. State of Illinois Department of Natural Resources: https://www.dnr.illinois.gov/WaterResources/Documents/Final_UFAA_Report.pdf

For more information, please contact Hal Spracale at (773) 269-4046, hal@cnt.org

About CNT

CNT is a nonprofit innovations hub for urban sustainability. CNT's research, strategies, and solutions are implemented across America and around the world to create more equitable and resilient communities. Our 35-plus years of work in transportation and community development, water, energy, and climate have inspired a generation of new approaches and earned the highest honors.

Stormwater Pollution Prevention

Stormwater Management Practices for Commercial Landscape Maintenance

Yard waste, sediments, and toxic lawn/garden chemicals used in commercial landscape maintenance often make their way into the San Bernardino County storm drain system and do not get treated before reaching the Santa Ana River. This pollutes our drinking water and contaminates local waterways, making them unsafe for people and wildlife. Following these best management practices will prevent pollution, comply with regulations and protect public health.

Recycle Yard Waste

Recycle leaves, grass clippings and other yard waste. Do not blow, sweep, rake or hose yard waste into the street. Try grasscycling - the natural recycling of grass by leaving clippings on the lawn when mowing. Grass clippings will quickly decompose, returning valuable nutrients to the soil. Further information can be obtained at www.ciwmb.ca.gov/Organics.

Use Fertilizers, Herbicides and Pesticides Safely

Fertilizers, herbicides and pesticides are often carried into the storm drain system by sprinkler runoff. Use of natural, non-toxic alternatives to the traditional fertilizers, herbicides and pesticides is highly recommended. If you must use chemical fertilizers, herbicides, or pesticides:

- Spot apply pesticides and herbicides, rather than blanketing entire areas.
- Avoid applying near curbs and driveways, and never apply before a rain.
- Apply fertilizers as needed, when plants can best use it, and when the potential for it being carried away by runoff is low.

Recycle Hazardous Waste

Pesticides, fertilizers, herbicides and motor oil contaminate landfills and should be disposed of through a Hazardous Waste Facility, which accepts these types of materials. For information on proper disposal call, (909) 386-8401.

Use Water Wisely

Conserve water and prevent runoff by controlling the amount of water and direction of sprinklers. Sprinklers should be on long enough to allow water to soak into the ground but not so long as to cause runoff. Periodically inspect, fix leaks and realign sprinkler heads. Plant native vegetation to reduce the need of water, fertilizers, herbicides, and pesticides.

Prevent Erosion

Erosion washes sediments, debris and toxic runoff into the storm drain system, polluting waterways.

- Prevent erosion and sediment runoff by using ground cover, berms and vegetation down-slope to capture runoff.
- Avoid excavation or grading during wet weather.

Store Materials Safely

Keep landscaping materials and debris away from the street, gutter and storm drains. On-site stockpiles of materials must be covered with plastic sheeting to protect from rain, wind and runoff.

To report illegal dumping or for more information on stormwater pollution prevention, call:

1 (800) CLEANUP

or visit our websites:

www.co.san-bernardino.ca.us/flood/npdes

www.1800cleanup.org

San Bernardino County STORMWATER PROGRAM

Pet Care

- When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.

Swimming Pool and Spa

- Drain your swimming pool only when a test kit does not detect chlorine levels.
- Whenever possible, drain your pool or spa into the sanitary sewer system.
- Properly store pool and spa chemicals to prevent leaks and spills, preferably in a covered area to avoid exposure to stormwater.

Septic System Use and Maintenance

- Have your septic system inspected by a professional at least every 3 years, and have the septic tank pumped as necessary (usually every 3 to 5 years).
- Care for the septic system drainfield by not driving or parking vehicles over it. Plant only grass over and near the drainfield to avoid damage from roots.
- Flush responsibly. Flushing household chemicals like paint, pesticides, and antifreeze can destroy the biological treatment taking place in the system. Cat litter, paper towels, and cat litter can clog the septic system and potentially damage components.

Storm drains connect to waterbodies!

Internet Address (URL) • http://www.epa.gov
Recycled/Recyclable • Printed With Vegetable Oil Based Inks on 100% Post-consumer, Process Chlorine Free Recycled Paper

Remember Only rain down the drain!

For more information, visit
www.epa.gov/npdes/stormwater
or
www.epa.gov/nps

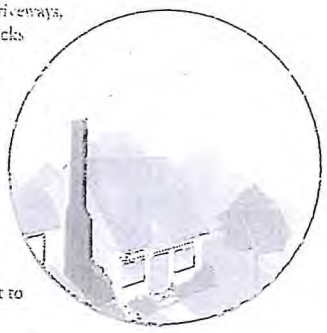
Make your home

The

SOLUTION TO STORMWATER POLLUTION!

A homeowner's guide to healthy habits for clean water

As stormwater flows over driveways, lawns, and sidewalks, it picks up debris, chemicals, dirt, and other pollutants. Stormwater can flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water. Polluted runoff is the nation's greatest threat to clean water.



By practicing healthy household habits, homeowners can keep common pollutants like pesticides, pet waste, grass clippings, and automotive fluids off the ground and out of stormwater. Adopt these healthy household habits and help protect lakes, streams, rivers, wetlands, and coastal waters. Remember to share the habits with your neighbors!

Healthy Household Habits for Clean Water

Vehicle and Garage

- Use a commercial car wash or wash your car on a lawn or other unpaved surface, to minimize the amount of dirty, soapy water flowing into the storm drain and, eventually, into your local waterbody.

- Check your car, boat, motorcycle, and other machinery and equipment for leaks and spills. Make repairs as soon as possible. Clean up spilled fluids with an absorbent material like kitty litter or sawdust and don't rinse the spills into a nearby storm drain. Remember to properly dispose of the absorbent material.
- Recycle used oil and other automotive fluids at participating service stations. Don't dump these chemicals down the storm drain or dispose of them in your trash.

Lawn and Garden

- Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Avoid application when forecast calls for rain; otherwise, chemicals will be washed into your local stream.
- Select native plants and grasses that are drought- and pest-resistant. Native plants require less water, fertilizer, and pesticides.
- Sweep up yard debris, rather than hosing down areas. Compost or recycle yard waste when possible.
- Don't overwater your lawn. Water during the cool times of the day, and don't let water run off into the storm drain.
- Cover piles of dirt and mulch being used in landscaping projects to prevent these pollutants from blowing or washing off your yard and into local waterbodies. Vegetate bare spots in your yard to prevent soil erosion.

Home Repair and Improvement

- Before beginning an outdoor project, locate the nearest storm drains and protect them from debris and other materials.
- Sweep up and properly dispose of construction debris such as concrete and mortar.
- Use hazardous substances like paints, thinners, and cleaners in the smallest amounts possible, and follow the directions on the label. Clean up spills immediately, and dispose of the waste safely. Store substances properly to avoid leaks and spills.
- Purchase and use nontoxic, biodegradable, recycled, and recyclable products whenever possible.
- Clean paint brushes in a sink, not outdoors. Filter and reuse paint thinner when using oil-based paints. Properly dispose of excess paints through a household hazardous waste collection program, or donate unused paint to local organizations.
- Reduce the amount of paved area and increase the amount of vegetated area in your yard. Use native plants in your landscaping to reduce the need for watering during dry periods. Consider directing downspouts away from paved surfaces onto lawns and other measures to increase infiltration and reduce polluted runoff.

Stormwater Pollution Found in Your Area!

This is not a citation.

This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

_____ .

- ☐ Motor oil
- ☐ Oil filters
- ☐ Antifreeze/ transmission fluid
- ☐ Paint
- ☐ Solvent/degreaser
- ☐ Cooking grease
- ☐ Detergent
- ☐ Home improvement waste (concrete, mortar)
- ☐ Pet waste
- ☐ Yard waste (leaves, grass, mulch)
- ☐ Excessive dirt and gravel
- ☐ Trash
- ☐ Construction debris
- ☐ Pesticides and fertilizers
- ☐ Other

_____

For more information or to report an illegal discharge of pollutants, please call:

IT DRAINS

EPA
United States
Environmental Protection
Agency

www.epa.gov/npdes/stormwater

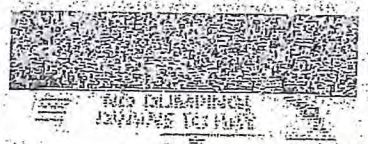
EPA 833-F-03-002
April 2003

Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:

1. Use pesticides and fertilizers sparingly.



2. Repair auto leaks.

3. Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
4. Clean up after your pet.
5. Use a commercial car wash or wash your car on a lawn or other unpaved surface.
6. Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
7. Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
8. Sweep up and properly dispose of construction debris like concrete and mortar.

Appendix C

Find out more about what our regional offices are doing for environmental justice in your community!

Tools and Products for Environmental Justice Action

OEJ programs have established the following tools and resources to facilitate and support the incorporation of environmental justice considerations into agency actions. These cross-cutting efforts aim to create consistency and clarity around how EPA identifies and addresses environmental justice concerns.

EJSCREEN

To better meet the Agency's responsibilities related to the protection of public health and the environment, EPA has developed an environmental justice mapping and screening tool. EJSCREEN provides users with a nationally consistent dataset and approach for combining environmental and demographic indicators. EPA made this tool publicly available online to be more transparent about how we consider environmental justice in our work, assist our stakeholders in making informed decisions, and create a common starting point for dialogue with partners and the public. It can be found at: https://www.epa.gov/ejscreen.

Policy

EPA released two documents related to the consideration of environmental justice during rulemaking processes. The first of these, Guidance on Considering Environmental Justice During the Development of an Action, fosters an understanding and ensures consistency by EPA staff as they consider environmental justice during rulemaking actions. The second document, Technical Guidance for Assessing Environmental Justice in Regulatory Analysis, provides the technical underpinnings to fully consider environmental justice during rulemakings. Both documents can be found on https://www.epa.gov/environmentaljustice.

Training and Workshops

OEJ provides training and coordinates workshops for internal and external stakeholders on a broad range of issues relating to environmental justice and equitable development. OEJ ensures that Agency staff are trained on the most current data and resources available for the successful integration of environmental justice principles in their work. OEJ continually engages the public and other governmental partners to enhance the tools, methods, and practices for full integration and consideration of environmental justice concerns.

Science

Science plays an important role in providing a strong basis for action to protect the health and environment of populations that may be especially vulnerable to environmental hazards. EPA's new technical guidance for assessing environmental justice in regulatory actions was developed with participation from the public. OEJ is working with the Office of Research and Development to implement a new Environmental Justice Research Roadmap, which integrates environmental justice-related research across six National Research Programs. To read about these scientific developments, visit: https://www.epa.gov/environmentaljustice/ej-2020-resources#documents

Environmental Justice Legal Tools

The Legal Tools Development document, developed by EPA's Office of General Counsel, provides an overview of several discretionary legal authorities that EPA may consider using to more fully ensure that its programs, policies, and activities fully protect human health and the environment in minority and low-income communities. Some of the tools identified are already in use today; others have not yet been applied in an environmental justice setting. EJ Legal Tools is not a document prescribing when and how the Agency should undertake specific actions.

EPA

For More Information

EPA

Office of Environmental Justice in Action

About the Office of Environmental Justice

For over 25 years, OEJ has worked to address the disproportionately adverse human health and environmental impacts in overburdened communities by integrating environmental justice considerations throughout the Agency.

Created in 1992, the Office of Environmental Justice (OEJ) coordinates Agency efforts to address the needs of vulnerable populations by decreasing environmental burdens, increasing environmental benefits, and working collaboratively to build healthy, sustainable communities. OEJ provides financial and technical assistance to communities working constructively and collaboratively to address environmental justice issues. The Office also works with local, state, and federal governments; tribal governments; community organizations; business and industry; and academia, to establish partnerships seeking to achieve protection from environmental and health hazards for all people regardless of race, color, national origin, or income.

To accomplish this mission, OEJ has created the following programs, policies, and activities to assist communities in building their capacity; to better engage federal agencies to help them understand environmental justice issues; to incorporate the voices of communities into agency decisions; and to provide tools and resources for promoting the principles of environmental justice.

Strategic Opportunities for Advancing Environmental Justice

An integral part of the Agency's mission is to focus our attention on the environmental and public health challenges that face our nation's minority, low-income, tribal, and indigenous populations. Our approach is both collaborative and strategic – working with partners to create holistic solutions that make a difference in communities through better policies, tools, and application of resources. These approaches have been captured through successive EJ strategic plans for the Agency.

The first of these plans largely focused on the creation of better tools, policies, and guidance to fill important gaps. Currently we are focused on three main strategic areas.

- We strive to strengthen and expand our governmental partnerships, particularly focused on the proactive efforts of state, tribal, and local governments to advance environmental justice.
- We are also focused on the implementation and use of the tools and guidance created previously in a way that is measurable and significant.
- We endeavor to demonstrate measurable progress on significant issues, including reducing disparities in childhood blood lead levels and working to ensure that all people served by small community and tribal water systems have drinking water that meets applicable health-based standards.

OEJ Milestones

1990 — Environmental Equity Work Group was formed.

1991 — Office of Environmental Equity was formed, which became the Office of Environmental Justice.

1992 — National Environmental Justice Advisory Council was established.

1993 — President Clinton issued EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, establishing the Inter-agency Working Group on Environmental Justice.

Environmental Justice Small Grants Program was established.

1994 — First National Interagency Environmental Justice Public Meeting was held. EJ IWG Formed!

1995 — EPA and the President's Council on Environmental Quality convened their 1st listening session.

1996

1997

1998

1999

2000 — The National Environmental Justice Training Collaborative was formed.

2001 — EPA issued the memorandum "Statutory and Regulatory Authorities Under Which Environmental Justice Issues May Be Addressed in Permitting."

2002 — EPA offices developed and began implementing environmental justice action plans.

2003 — The EJ Collaborative Problem-Solving Cooperative Agreement Program was launched.

2004 — EPA issued the "EJ Toolkit for Assessing Potential Allegations of Environmental Injustice" to assist staff in conducting environmental justice assessments.

2005

Environmental Justice Integration

The EPA actively seeks to incorporate the principles of environmental justice at all levels of the Agency. In addition to developing a strategic plan that directly support the integration of environmental justice considerations internally and with other federal officials, the Agency partners with federal, state, local, and tribal departments, as well as with other stakeholders in communities, business and industry, academia, etc., to assist in the consideration and incorporation of environmental justice into their practices and processes.

The Federal Interagency Working Group on Environmental Justice (EJ IWG)

The EJ IWG works to integrate the principles of environmental justice through the collaboration of 17 federal agencies and White House offices. Through the EJ IWG, the federal government assists overburdened and under-served communities in the implementation of comprehensive solutions to local environmental and human health challenges. The EJ IWG strives to ensure the federal government is: accessible to communities and other stakeholders working to address environmental justice concerns; aware of the environmental justice issues confronting communities to facilitate coordinated and collaborative federal assistance; and accountable to explain federal efforts to achieve environmental justice.

International Human Rights & Rights of Indigenous Peoples

EPA collaborates with the U.S. State Department and other federal agencies to engage other countries in sharing best practices and approaches to provide environmental and public health protection to vulnerable populations. EPA conducts this work to help fulfill the U.S. international human rights treaty obligations.

National Environmental Policy Act (NEPA)

NEPA provides a framework to foster effective, efficient, and consistent consideration of environmental justice for decision-making on federal actions that affect the environment and human health. The Promising Practices for Environmental Justice Methodologies in NEPA Reviews, a compilation of approaches gleaned from a 4-year review of agency practices by more than 200 federal NEPA practitioners, consists of nine sections that provide guiding principles and specific steps to consider during the NEPA process. Federal agencies are implementing the Promising Practices through a variety of mechanisms, including cross-department briefings and trainings, publications (e.g. articles, FAQs), and stakeholder engagement.

Title VI of the Civil Rights Act of 1964

In accordance with Title VI of the Civil Rights Act of 1964, each federal agency is required to ensure that all programs or activities receiving federal financial assistance do not discriminate against recipients in any way based on race, color, or national origin. OEJ works closely with the EPA's External Civil Rights Compliance Office to share best practices, lessons learned, approaches, and tools to help prevent or resolve potential civil rights complaints.

Direct Support

The EPA provides direct support through financial and technical assistance to vulnerable, low-income, minority, and tribal communities seeking to understand and develop holistic solutions to their environmental and public health challenges. These resources are allocated to improve the quality of the air, land, and water so that communities may live, work, play, pray, and go to school in healthier, more sustainable environments.

Financial Resources for Creating Healthy, Sustainable & Equitable Communities

OEJ works directly with communities to implement solutions that address local environmental and health concerns. The Office provides financial assistance through two opportunities:

- the Environmental Justice Small Grants Program, which supports small projects that assist communities as they develop their visions for revitalization.
- the Collaborative Problem-Solving Cooperative Agreement Program, which supports implementation level projects as communities seek to apply holistic solutions to their most pressing challenges.

These competitive grant opportunities support overburdened and underserved populations and create self-sustaining, community-based partnerships to improve local environments and public health. As of 2016, since its inception, the Office has awarded more than $36 million in financial assistance to nearly 1500 community-based organizations.

To find out more about either of the financial assistance programs or the impact made by funded projects please visit: https://www.epa.gov/environmentaljustice/environmental-justice-grants-funding-and-technical-assistance

Technical Assistance Services for Communities (TASC) Program

Through the EPA's national Technical Assistance Services for Communities (TASC) program, communities enhance their ability to be meaningfully involved in the decision making process by learning how to better understand the science, regulations, and policies of environmental issues and EPA actions. The TASC program benefits communities by explaining technical findings and answering community questions, helping them understand complex environmental issues, and supporting their active roles in protecting healthy communities and advancing environmental protection. The TASC program can also provide opportunities for environmental education, bring diverse groups together, and strengthen community engagement.

TASC services can include: information assistance and expertise, community education, information assistance needs evaluation, and plan development other assistance to help community members work together to participate effectively in environmental decision-making.

Partnerships and Engagement

The EPA recognizes the necessity of meaningfully engaging stakeholders, such as through public participation, in an effort to sustain partnerships and involve those who are affected in the decision-making process so that future decisions may best serve the interests of our most vulnerable communities. The Agency continues to encourage public stakeholder engagement as a critical component of community revitalization.

National Environmental Justice Advisory Council (NEJAC)

The mission of NEJAC is to provide independent advice and recommendations to the EPA Administrator about broad, crosscutting issues related to environmental justice. NEJAC also holds public meetings to receive comments, questions, and recommendations regarding environmental justice issues. Since 1993, NEJAC has developed dozens of recommendation reports and advice letters to help the agency better address the needs of disadvantaged and underserved communities.

To read NEJAC's reports or the twenty-year retrospective of its activities and impact, visit: https://www.epa.gov/environmentaljustice/nejac

Tribal Consultation & Indigenous People's Engagement

To engage more effectively with federally-recognized tribes and all other indigenous peoples on their priority environmental and public health concerns, the Agency is working to implement the EPA Policy on Environmental Justice for Working with Federally Recognized Tribes and Indigenous Peoples. Under the leadership of OEJ, EPA is implementing this Policy in coordination and collaboration with tribes, other federal agencies, states, indigenous organizations, and all other interested stakeholders, as well as addressing issues raised within the context of international human rights treaty obligations.

To learn more about OEJ's efforts on addressing tribal and indigenous environmental and public health issues, visit: https://www.epa.gov/environmentaljustice/environmental-justice-tribes-and-indigenous-peoples.

2006 — EPA funded the Environmental Justice Showcase Communities Program.

2007

2008 — EPA held a science symposium to examine disparities in environmental health.

2009 — EPA introduced Plan EJ 2014.

2010 — EPA created youth workshops to accompany the NEJAC public engagement meetings.

2011 — The White House hosted an environmental justice forum with 5 cabinet members.

The White House convened the first IWG meeting in 11 years.

2012 — The NEJAC Indigenous Peoples Work Group was formed.

The CEJSTAG was signed by 17 IWG federal agencies.

2013 — The EJ in Action blog was launched.

2014 — EPA issued the Policy on Environmental Justice for Working with Federally Recognized Tribes and Indigenous Peoples.

2015 — EJ Legal Tools was released.

2016 — The EJSCREEN mapping tool was released.

The NEPA Promising Practices report was released.

2017 — The EJ 2020 Action Agenda was issued.

The EJ Technical Guidance report was released.

The EJ IWG Framework for Collaboration 2016-2018 was released.

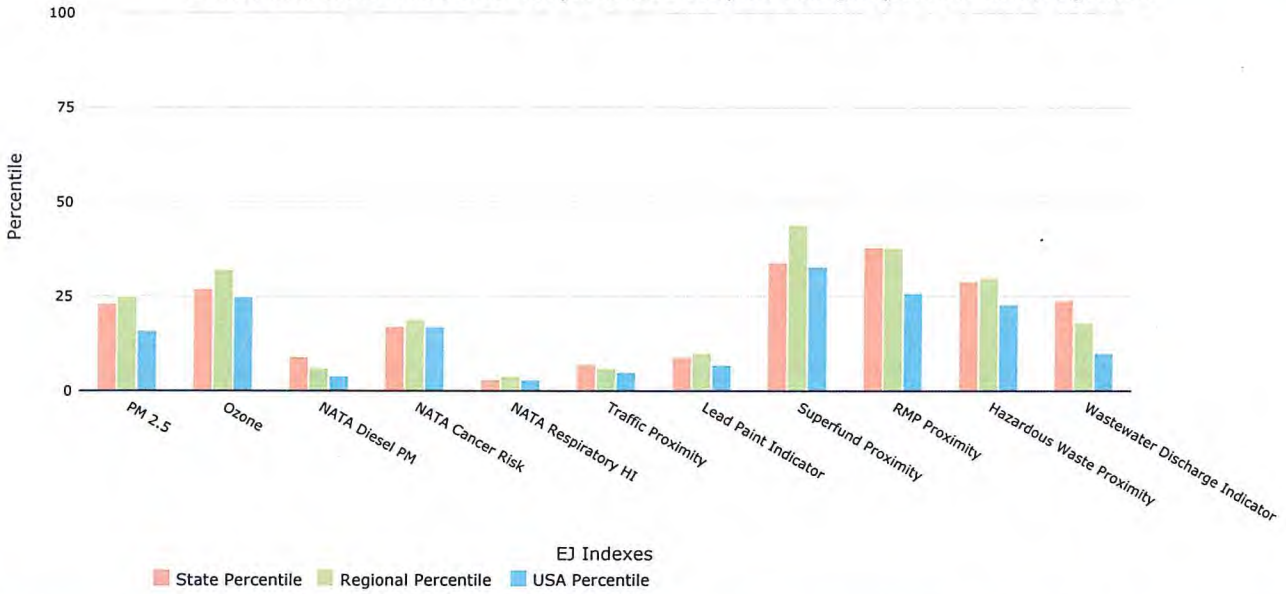
Save as PDF

EJSCREEN Report (Version 2017)

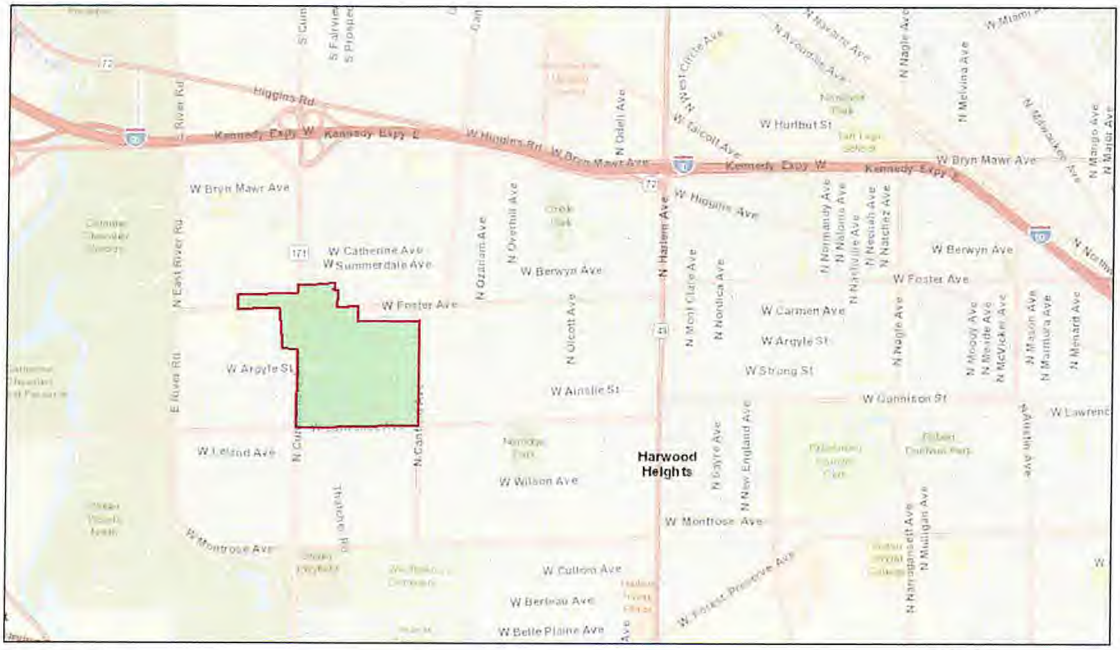
Blockgroup: 170317709021
ILLINOIS, EPA Region 5
Approximate Population: 1,642
Input Area (sq. miles): 0.28

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	23	25	16
EJ Index for Ozone	27	32	25
EJ Index for NATA* Diesel PM	9	6	4
EJ Index for NATA* Air Toxics Cancer Risk	17	19	17
EJ Index for NATA* Respiratory Hazard Index	3	4	3
EJ Index for Traffic Proximity and Volume	7	6	5
EJ Index for Lead Paint Indicator	9	10	7
EJ Index for Superfund Proximity	34	44	33
EJ Index for RMP Proximity	38	38	26
EJ Index for Hazardous Waste Proximity	29	30	23
EJ Index for Wastewater Discharge Indicator	24	18	10

EJ Index for the Selected Area Compared to All People's Blockgroups in the State/Region/US



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.



October 24, 2017

Digitized Polygon

1:36,112

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), Mapmyindia, © OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

Selected Variables	Value	State Average	Percentile in State	EPA Region Average	Percentile in EPA Region	USA Average	Percentile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m^3)	11.2	10.8	69	10.1	86	9.14	92
Ozone (ppb)	35.1	37.3	12	37.6	10	38.4	15
NATA* Diesel PM (µg/m^3)	1.84	1.28	82	0.932	90-95th	0.938	90-95th
NATA* Air Toxics Cancer Risk (risk per MM)	43	36	89	34	80-90th	40	60-70th
NATA* Respiratory Hazard Index	4.3	1.8	98	1.7	95-100th	1.8	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	550	510	80	370	83	590	79
Lead Paint Indicator (% pre-1960s housing)	0.46	0.42	54	0.39	63	0.29	73
Superfund Proximity (site count/km distance)	0.033	0.096	25	0.13	25	0.13	29
RMP Proximity (facility count/km distance)	0.22	1.1	25	0.81	38	0.73	42
Hazardous Waste Proximity (facility count/km distance)	0.047	0.1	34	0.091	48	0.093	46
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0075	0.44	55	4.2	71	30	79
Demographic Indicators							
Demographic Index	17%	35%	29	29%	37	36%	24
Minority Population	9%	38%	22	25%	39	38%	21
Low Income Population	26%	32%	46	33%	44	34%	40
Linguistically Isolated Population	14%	5%	87	2%	94	5%	88
Population with Less Than High School Education	15%	12%	70	11%	75	13%	65
Population under Age 5	3%	6%	19	6%	19	6%	20
Population over Age 64	26%	14%	93	14%	92	14%	92

*The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

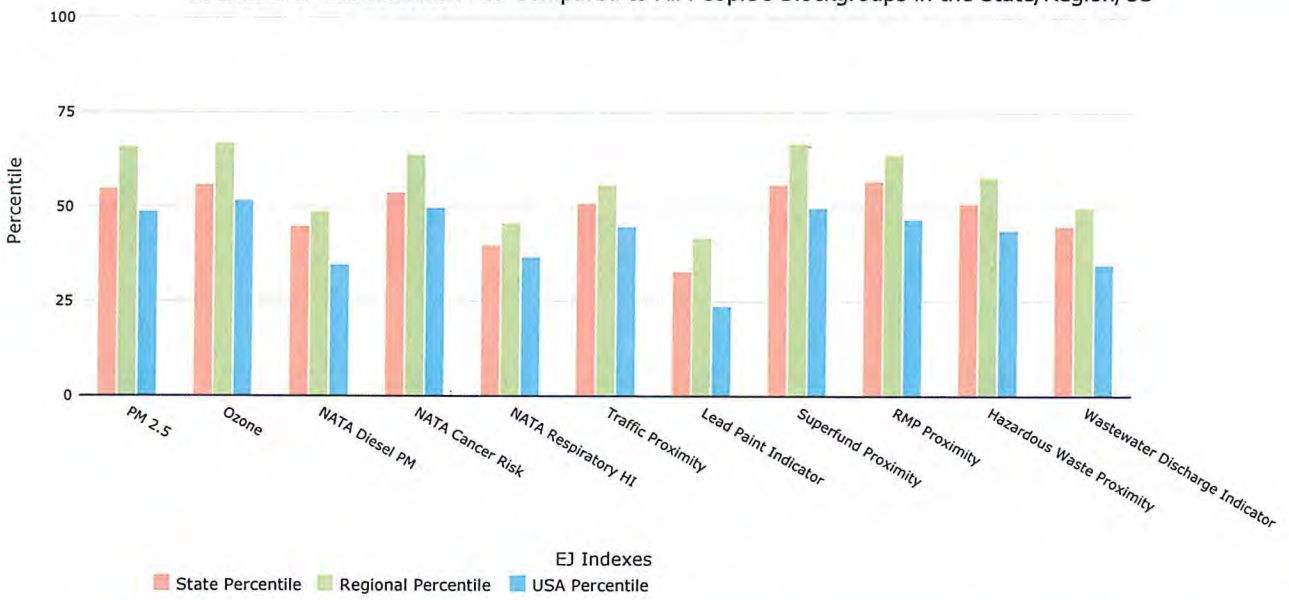
Save as PDF

EJSCREEN Report (Version 2017)

Blockgroup: 170318105014
ILLINOIS, EPA Region 5
Approximate Population: 965
Input Area (sq. miles): 0.11

Selected Variables	Percentile in State	Percentile in EPA Region	Percentile in USA
EJ Indexes			
EJ Index for Particulate Matter (PM 2.5)	55	66	49
EJ Index for Ozone	56	67	52
EJ Index for NATA* Diesel PM	45	49	35
EJ Index for NATA* Air Toxics Cancer Risk	54	64	50
EJ Index for NATA* Respiratory Hazard Index	40	46	37
EJ Index for Traffic Proximity and Volume	51	56	45
EJ Index for Lead Paint Indicator	33	42	24
EJ Index for Superfund Proximity	56	67	50
EJ Index for RMP Proximity	57	64	47
EJ Index for Hazardous Waste Proximity	51	58	44
EJ Index for Wastewater Discharge Indicator	45	50	35

EJ Index for the Selected Area Compared to All People's Blockgroups in the State/Region/US



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October 24, 2017

Digitized Polygon

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Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

Selected Variables	Value	State Average	Percentile in State	EPA Region Average	Percentile in EPA Region	USA Average	Percentile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	11.3	10.8	71	10.1	87	9.14	92
Ozone (ppb)	35.1	37.3	12	37.6	10	38.4	15
NATA* Diesel PM (µg/m³)	1.49	1.28	67	0.932	80-90th	0.938	80-90th
NATA* Air Toxics Cancer Risk (risk per MM)	40	36	81	34	80-90th	40	50-60th
NATA* Respiratory Hazard Index	3.7	1.8	96	1.7	95-100th	1.8	95-100th
Traffic Proximity and Volume (daily traffic count/distance to road)	31	510	31	370	36	590	33
Lead Paint Indicator (% pre-1960s housing)	0.73	0.42	78	0.39	82	0.29	88
Superfund Proximity (site count/km distance)	0.033	0.096	26	0.13	26	0.13	30
RMP Proximity (facility count/km distance)	0.24	1.1	26	0.81	40	0.73	44
Hazardous Waste Proximity (facility count/km distance)	0.049	0.1	35	0.091	50	0.093	48
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	6.1E-08	0.44	28	4.2	29	30	40
Demographic Indicators							
Demographic Index	29%	35%	54	29%	65	36%	48
Minority Population	42%	38%	64	25%	80	38%	62
Low Income Population	16%	32%	28	33%	24	34%	22
Linguistically Isolated Population	20%	5%	92	2%	97	5%	93
Population with Less Than High School Education	7%	12%	39	11%	40	13%	35
Population under Age 5	5%	6%	46	6%	47	6%	46
Population over Age 64	18%	14%	74	14%	70	14%	72

*The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

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Appendix D

Sec. 98-215. - Stormwater and other unpolluted waters.

A. No person shall discharge, or cause to be discharged, any stormwater, surface water, groundwater, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer.

B. Stormwater and all other unpolluted drainage shall be discharged to such sewers as are specifically designated as combined sewers or storm sewers, or to a natural outlet approved by the Metropolitan Water Reclamation District of Greater Chicago. Industrial cooling water or unpolluted process waters may be discharged, on approval of the Metropolitan Water Reclamation District of Greater Chicago, to a storm sewer, combined sewer or natural outlet.

(Ord. No. 1328-01, § 1(5-5-4(A), (B)), 1-24-2001)

Sec. 98-216. - Prohibited waters and wastes.

No person shall discharge or cause to be discharged any of the following described waters and wastes to any public sewers:

1. Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid or gas.
2. Any waters or wastes containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singly or by interaction with other wastes, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the sewage treatment plant.
3. Any waters or wastes having a pH lower than 5.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works.
4. Solid or viscous substances in quantities or of such size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the sewage works such as, but not limited to, ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails and paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders.

(Ord. No. 1328-01, § 1(5-5-4(C)), 1-24-2001)

Sec. 98-217. - Prohibited substances.

No person shall discharge or cause to be discharged the following described substances, materials, waters or wastes if it appears likely in the opinion of the Metropolitan Water Reclamation District of Greater Chicago that such wastes can harm either the sewers, sewage treatment process or equipment, have an adverse effect on the receiving stream, or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming its opinion as to the acceptability of these wastes, the Metropolitan Water Reclamation District of Greater Chicago will give consideration to such factors as the quantities of subject materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant, and maximum limits established by regulatory agencies. The substances prohibited are:

1. Any liquid or vapor having a temperature higher than 150 degrees Fahrenheit (65 degrees Celsius).
2. Any waters or wastes containing toxic or poisonous material or oils, whether emulsified or not, in excess of 100 mg/l or containing substances which may solidify or become viscous at temperatures between 32 degrees and 150 degrees Fahrenheit (zero degrees and 65 degrees Celsius).
3. Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of three-fourths horsepower (0.76 hp metric) or greater shall be subject to the review and approval of the Metropolitan Water Reclamation District of Greater Chicago and the village.
4. Any waters or wastes containing strong acid, iron picking wastes, or concentrated plating solution, whether neutralized or not.
5. Any waters or wastes containing iron, chromium, copper, zinc, or similar objectionable or toxic substances, or wastes exerting an excessive chlorine requirement, to such degree that any such material received in the composite sewage at the sewage treatment works exceeds the limits established by the Metropolitan Water Reclamation District of Greater Chicago for such materials.
6. Any waters or wastes containing phenols or other taste-producing or odor-producing substances, in such concentrations exceeding limits which may be established by the Metropolitan Water Reclamation District of Greater Chicago as necessary after treatment of the composite sewage, to meet the requirements of the state, federal or other public agencies of jurisdiction for such discharge to the receiving waters.
7.

Any radioactive wastes or isotopes of such half-life or concentration as may exceed limits established by the Metropolitan Water Reclamation District of Greater Chicago in compliance with applicable state or federal regulations.

8. Any wastes or waters having a pH in excess of 9.5.
9. Any mercury or any of its compounds in excess of 0.0005 mg/l as Hg at any time except as permitted by the Metropolitan Water Reclamation District of Greater Chicago in compliance with state and federal regulations.
10. No waste to any public sewer system shall contain more than ten mg/l total cyanide provided any sample tested shall not release more than two mg/l of cyanide when tested at a pH of 4.5 and at a temperature of 66 degrees Celsius (150 degrees Fahrenheit) for a period of 30 minutes. Nothing in this section shall limit the authority of the Metropolitan Water Reclamation District of Greater Chicago from imposing more stringent limits on cyanide discharges.
11. Materials which exert or cause:
    a. Unusual concentrations of inert suspended solids (such as, but not limited to, fuller's earth, lime slurries, and lime residues), or of dissolved solids (such as, but not limited to, sodium chloride and sodium sulfate);
    b. Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions);
    c. Unusual BOD (biochemical oxygen demand), or chlorine requirements in such quantities as to constitute a significant load on the sewage treatment works;
    d. Unusual volume of flow or concentrations of waste constituting slugs; and
    e. Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage treatment processes employed, or are amenable to treatment only to such degree that the sewage treatment plant effluent cannot meet the requirements of agencies having jurisdiction over discharge to the receiving waters.

(Ord. No. 1328-01, § 1(5-5-4(D)), 1-24-2001)

Sec. 98-218. - Administrative action by Metropolitan Water Reclamation District.

If any waters or wastes are discharged or are proposed to be discharged to the public sewers, which waters contain the substances or possess the characteristics enumerated in section 98-217, and/or which are in violation of the standards for pretreatment provided in 40 CFR 403, June 26, 1978,

and any amendments thereto, and which in the judgment of the Metropolitan Water Reclamation District of Greater Chicago may have a deleterious effect upon the sewage works, processes, equipment, or receiving waters or which otherwise create a hazard to life or constitute a public nuisance, the Metropolitan Water Reclamation District of Greater Chicago may:

1. Reject the wastes;
2. Require pretreatment to an acceptable condition for discharge to the public sewers;
3. Require control over the quantities and rates of discharge; and/or
4. Require payment to cover the added costs of handling and treating the wastes not covered by existing taxes or sewer charges, under the provisions of section 98-224. If the Metropolitan Water Reclamation District of Greater Chicago permits the pretreatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the requirements of all applicable codes, ordinances and laws.

(Ord. No. 1328-01, § 1(5-5-4(E)), 1-24-2001)

Appendix E

VILLAGE OF NORRIDGE
NPDES PERMIT PHASE II - MS4 OUTFALLS
OUTFALL INSPECTION

OUTFALL # _____

GENERAL LOCATION _____

DETAILED LOCATION DESCRIPTION _____

OUTFALL SIZE _____

OBSERVED DISCARGE YES _____ NO _____

IF YES, UNUSUAL APPEARANCE YES _____ NO _____

TIME AND DATE OF INSPECTION _____

INSPECTOR _____

Appendix F

VILLAGE OF NORRIDGE
INVENTORY OF STORM SEWER OUTFALLS
10/24/2017

The following is a list of Storm Sewer Outfalls owned by the Village of Norridge:

OUTFALL NO.	LOCATION	RECEIVING WATERWAY	DIAMETER
1	Montrose Avenue*	Des Plaines River	36"

*Outfall 1 is the Village's only outfall which discharges to a waterway. The stormwater from Outfall 1 exits the Village of Norridge to the west into the Cook County Forest Preserve District Sewer System. The stormwater enters an open drainage channel and ultimately discharges into the Des Plaines River. There are other stormwater exit points within the Village that enter the City of Chicago's combined sewer system, however are considered as combined sewage.

Appendix G

SCALE : 1" = 300'

THE VILLAGE OF NORRIDGE, ILLINOIS

LEGEND

SYMBOL	DESCRIPTION
	M.W.R.D.G.C. DESIGNATED COMBINED SEWER AREA
12" 30.24	EXISTING COMBINED SEWER WITH MANHOLE INDICATES INVERT OF COMBINED SEWER @ MANHOLE
12" 30.24	EXISTING STORM SEWER WITH MANHOLE INDICATES INVERT OF STORM SEWER @ MANHOLE
12"	EXISTING M.W.R.D.G.C. INTERCEPTOR SEWER
	INLET
	CATCH BASIN
	HEADWALL

GENERAL NOTES

1. ALL ELEVATIONS SHOWN ARE BASED ON CHICAGO CITY DATUM. TO CONVERT TO U.S.G.S. DATUM ADD 579.92'.

VILLAGE LIMITS

COOK COUNTY FOREST PRESERVE DISTRICT

WESTLAWN CEMETERY

RESURRECTION CEMETERY

IRVING PARK CEMETERY

STATE OF ILLINOIS

HANCOCK ENGINEERING
◆ Civil Engineers
◆ Municipal Consultants
◆ Established 1911
9933 Roosevelt Road
Westchester, Illinois 60154-2784
Phone: 708/865-0300
Fax: 708/865-1313

REVISED	DATE
NEW	12-29-06
LEV	6-27-06

Appendix H

List of Significant Industrial Users

The Metropolitan Water Reclamation District of Greater Chicago's (District) Sewage and Waste Control Ordinance (Ordinance) defines a significant industrial user (SIU) as:

> *"...any person who: (i) is subject to categorical pretreatment standards, or (ii) discharges greater than 25,000 gallons per day of process wastewater to the sewerage system, excluding water-carried human wastes from sanitary conveniences such as toilets, wash bowls, bathtubs, showers and residential laundries, noncontact cooling water, boiler blowdown water, and uncontaminated storm water, or (iii) discharges process wastewater in excess of five percent or more of the average dry weather hydraulic or organic capacity of the receiving water reclamation facilities, or (iv) is designated by the District as having a reasonable potential for adversely affecting the operations of the water reclamation facilities or for violating any standard or requirement of this Ordinance."*

The District has identified 347 SIUs under its jurisdiction. The following SIU list is current as of June 21, 2017.

» Significant Industrial Users List

Facility ID	Facility Name	Address	City	CFR
11375	A T A Finishing Corp	8225 Kimball Avenue	Skokie	Electroplating
10002	Aallied Die Casting Co. of Illinois	3021 Cullerton Drv	Franklin Park	Metal Molding and Casting
26197	Abbott Molecular, Inc.	1300 E Touhy Avenue	Des Plaines	Non-Categorical
24781	Able Electropolishing Company	2001 S Kilbourn Avenue	Chicago	Metal Finishing
25290	Above & Beyond Black Oxide Inc	1027-29 N 27th Avenue	Melrose Park	Metal Finishing
13583	Accent Metal Finishing Co.	9331 W Byron Street	Schiller Park	Electroplating
11340	Accurate Anodizing	3130 S Austin Blvd	Cicero	Electroplating
11166	Ace Anodizing & Impregnating Inc	4161 Butterfield Road	Hillside	Electroplating/Metal Finishing
27678	Acme Finishing Company, LLC	1595 E Oakton Street	Elk Grove Village	Electroplating/Metal Finishing
11047	Advance Enameling Co.	5849 S Bishop Street	Chicago	Electroplating
13505	Al Bar-Wilmette Platers	127 Green Bay Road	Wilmette	Electroplating
12749	Alanson Mfg Co.	4408 W Cermak Road	Chicago	Metal Finishing
26150	All-Brite Anodizing Company	100 W Lake Street	Northlake	Metal Finishing
25378	Allied Tube & Conduit	16001 S Center Avenue	Harvey	Iron and Steel Manufacturing
11535	Allied Tube & Conduit Corp	16100 S Lathrop Avenue	Harvey	Iron and Steel Manufacturing
25867	Alsco-American Linen Division	2641 S Leavitt Street	Chicago	Non-Categorical
27653	Alsip MiniMill, LLC	13101 S Pulaski Road	Alsip	Pulp, Paper, and Paperboard Mills
24571	Alton Services, Inc.	2700 S 21st Avenue	Broadview	Metal Finishing
11625	Aluminum Coil Anodizing Corporation	501 E Lake Street	Streamwood	Electroplating/Metal Finishing
25497	American Bottling	400 N Wolf Road	Northlake	Non-Categorical
13351	American Nameplate Co.	4501 S Kildare Avenue	Chicago	Metal Finishing
13207	American Nickel Works, Inc	1223 W Lake Street	Chicago	Electroplating
25577	American Plating & Manufacturing	3941 S Keeler Avenue	Chicago	Metal Finishing
26390	American Sugar Refining, Inc.	2400 E 130th Street	Chicago	Non-Categorical
26736	American Wheel Corporation	5939 W 66th Street	Bedford Park	Metal Finishing
15689	Amitron Corporation	2001 Landmeier Road	Elk Grove Village	Metal Finishing
25379	Ampel Inc	925 Estes Avenue	Elk Grove Village	Metal Finishing
14454	Angelica Textile Services	920 S Campbell Avenue	Chicago	Non-Categorical
13103	Anodizing Specialists Ltd	210 Crossen Avenue	Elk Grove Village	Electroplating
25805	Anthony Marano Company	3000 S Ashland Avenue	Chicago	Non-Categorical
25954	Aramark Uniform and Career Apparel, LLC	4200 S Halsted Street	Chicago	Non-Categorical
25896	ArcelorMittal Riverdale LLC	13500 S Perry Avenue	Riverdale	Iron and Steel Manufacturing
25055	Ardagh Glass Inc.	13850 S Cottage Grove Avenue	Dolton	Non-Categorical
27734	Ardagh Metal Beverage USA Inc.	1101 W 43rd Street	Chicago	Coil Coating
26753	Arkema Coating Resins	12840 S Pulaski Road	Alsip	Organic Chemicals, Plastics, and Synthetic Fibers

Facility ID	Facility Name	Address	City	CFR
12920	Arlington Plating Co.	600 S Vermont Street	Palatine	Electroplating
26054	Art Metal Finishers	6741 N Clark Street	Chicago	Electroplating
27616	ARYZTA LLC	1540 S 54th Avenue	Cicero	Non-Categorical
27657	ARYZTA LLC	2035 N Narragansett Avenue	Chicago	Non-Categorical
27136	ARYZTA LLC	111 N Northwest Avenue	Northlake	Non-Categorical
13513	Ashland, LLC	14303 Paxton Avenue	Calumet City	Organic Chemicals, Plastics, and Synthetic Fibers
14734	Aspen Foods A Division of Koch Foods Company, Inc	1115 W Fulton Market Street	Chicago	Non-Categorical
12238	Automatic Anodizing Corporation	3340 W Newport Avenue	Chicago	Electroplating
26440	A-Wire Corporation	4825 W Grand Avenue	Chicago	Metal Finishing
12302	Azteca Foods, Inc.	5005 S Nagle Avenue	Chicago	Non-Categorical
25758	B & B Pullman Properties, LP	700 E 107th Street	Chicago	Non-Categorical
26545	B.L. Downey Company, LLC.	2125 Gardner Road	Broadview	Metal Finishing
27733	BBJ Rentals, Inc.	6125 Howard Street	Niles	Non-Categorical
15872	Beaver Oil Co., Inc.	6037 Lenzi Avenue	Hodgkins	Centralized Waste Treatment
13254	Bellwood Industrial Inc.	4351 W Roosevelt Road	Chicago	Electroplating
11138	Belmont Plating Works, Inc.	3410 N River Road	Franklin Park	Metal Finishing/Electroplating
25873	Belmont Sausage Company	2201 Estes Avenue	Elk Grove Village	Non-Categorical
26039	Berkshire Investments, LLC d/b/a Chicago Extruded Metals	1601 S 54th Avenue	Cicero	Metal Molding and Casting/Copper Forming
10958	Berteau-Lowell Plating Works, Inc.	2312 W Fullerton Avenue	Chicago	Electroplating
25323	Best Cutting Die Co., Etch-A-Die Division	8220 Christiana Avenue	Skokie	Metal Finishing
11203	Block & Company Inc	1111 S Wheeling Road	Wheeling	Metal Finishing
26369	Bluewater Thermal Services, LLC	75 E Lake Street	Northlake	Metal Finishing
13454	BNSF Railway Company	5750 W 31st Street	Cicero	Non-Categorical
10311	Borg Warner Automotive	700 S 25th Avenue	Bellwood	Metal Finishing
26984	Brad Foote Gear Works	3250 S Central Avenue	Cicero	Metal Finishing
11898	Bretford Manufacturing, Inc.	11000 Seymour Avenue	Franklin Park	Metal Finishing
13586	Bridgford Foods	170 N Green Street	Chicago	Non-Categorical
26933	Bright Metals Finishing Corporation	3905 W Armitage Avenue	Chicago	Electroplating
27051	Brite Clean Chicago, LLC	2316 W 167th Street	Markham	Transportation Equipment Cleaning
11341	Bruss Company, The	3548 N Kostner Avenue	Chicago	Non-Categorical
13774	Calumet Tank & Equipment Co.	12440 S Stony Island Avenue	Chicago	Transportation Equipment Cleaning
26570	Capitol Wholesale Meats, Inc. d/b/a Fontanini Italian Meats and Sausages	8751 W 50th Street	McCook	Non-Categorical
15827	Caravan Ingredients	14622 S Lakeside Avenue	Dolton	Non-Categorical
11058	Carl Buddig and Company	50 Taft Drv	South Holland	Non-Categorical
11576	Castle Metal Finishing Corp	4631 N 25th Avenue	Schiller Park	Electroplating

Facility ID	Facility Name	Address	City	CFR
10001	CBSL Transportation Services, Inc.	4750 S Merrimac Avenue	Chicago	Transportation Equipment Cleaning
11422	Cedar Concepts Corporation	4342 S Wolcott Avenue	Chicago	Organic Chemicals, Plastics, and Synthetic Fibers
11548	Century Plating Company, Inc.	2939 N Oakley Avenue	Chicago	Electroplating/Metal Finishing
26040	Chem-Plate Industries	1250 Morse Avenue	Elk Grove Village	Metal Finishing
12925	Chem-Plate Industries, Inc.	1990 E Devon Avenue	Elk Grove Village	Electroplating/Metal Finishing
26254	Chicago American Manufacturing, LLC	4500 W 47th Street	Chicago	Metal Finishing
11084	Chicago Anodizing Co.	4112 W Lake Street	Chicago	Electroplating/Metal Finishing
12988	Chicago Magnesium Casting Co.	14101 S Seeley Avenue	Dixmoor	Metal Finishing
25861	Chicago Powdered Metal Products Company	9700 Waveland Avenue	Schiller Park	Nonferrous Metals Forming and Metal Powders
12114	CID Recycling and Disposal Facility	138th Street & Interstate 94 N/A	Calumet City	Centralized Waste Treatment
26070	Cintas Corporation	1201 W St. Charles Road	Maywood	Non-Categorical
10180	Cintas Corporation	1025 National Parkway	Schaumburg	Non-Categorical
15985	Cintas Corporation	6001 W 73rd Street	Bedford Park	Non-Categorical
26425	Circuit Engineering, LLC	1390 Lunt Avenue	Elk Grove Village	Metal Finishing
13787	City of Chicago-Jardine Water Purification Plant	1000 E Ohio Street	Chicago	Non-Categorical
13958	City of Chicago-South Water Purification Plant	3300 E Cheltenham Place	Chicago	Non-Categorical
26549	Clean Harbors Recycling Services of Chicago, LLC	1445 W 42nd Street	Chicago	Non-Categorical
25289	CMP Anodizing, Inc.	1340 Howard Street	Elk Grove Village	Metal Finishing
27629	CMP Anodizing, Inc.	1530 Louis Avenue	Elk Grove Village	Metal Finishing
11606	Coca-Cola Refreshments USA, Inc. (Niles)	7400 N Oak Park Avenue	Niles	Non-Categorical
14315	Coca-Cola Refreshments, Inc.	12200 S Laramie Avenue	Alsip	Non-Categorical
12340	Cody Metal Finishing Inc.	1620 N Throop Street	Chicago	Electroplating/Metal Finishing
15230	Commercial Finishes Company, Ltd.	540 Lively Blvd	Elk Grove Village	Metal Finishing
23995	Congress Development Company	4100 W Frontage Road	Hillside	Non-Categorical
10814	Craftsman Plating & Tinning	1239 W School Street	Chicago	Electroplating
12996	Cro-Mat Company	3771 W Morse Avenue	Lincolnwood	Electroplating
24517	Crossbow Water	320 W 194th Street	Glenwood	Non-Categorical
27722	Crothall Laundry Services, Inc.	45 W Hintz Road	Wheeling	Non-Categorical
25471	Cygnus Corporation dba Marietta Chicago	340 E 138th Street	Chicago	Non-Categorical
17261	Dana Container Inc.	7703 W 59th Street	Summit	Transportation Equipment Cleaning
25387	Darling Ingredients Inc.	3000 W Wireton Road	Blue Island	Non-Categorical
26410	Dedicated Trailer Cleaning Services, Inc.	17550 Fritz Drv	Lansing	Transportation Equipment Cleaning
13477	DeLaval Manufacturing	1855 S Mt. Prospect Road	Des Plaines	Non-Categorical
13770	Des Plaines Landfill	9800 W Central Road	Des Plaines	Non-Categorical
27590	DME Manufacturing Company	8034 Central Park Avenue	Skokie	Metal Finishing

Facility ID	Facility Name	Address	City	CFR
13688	Domestic Uniform Rental Company	4131 N Ravenswood Avenue	Chicago	Non-Categorical
12058	Dyna-Burr Chicago, Inc.	65 E Lake Street	Northlake	Electroplating
27824	Dynomax Inc.	230 W Palatine Road	Wheeling	Non-Categorical
13627	Eagle Electronics Incorporated	1735 Mitchell Blvd	Schaumburg	Metal Finishing
26233	Ebro Foods, Inc.	1330 W 43rd Street	Chicago	Non-Categorical
26601	ECMC Incorporated	1651 Mitchell Blvd	Schaumburg	Metal Finishing
24896	Ed Miniat LLC	16250 S Vincennes Road	South Holland	Non-Categorical
11406	Edsal Manufacturing Company, Inc.	4400 S Packers Avenue	Chicago	Metal Finishing
24378	Edsal Manufacturing Company, Inc.	4345 S Packers Avenue	Chicago	Metal Finishing
26740	Eklind Tool Company	11040 King Street	Franklin Park	Metal Finishing
24599	El Milagro Tortilla	3120 W 36th Street	Chicago	Non-Categorical
14249	El Milagro, Inc.	2919 S Western Avenue	Chicago	Non-Categorical
26088	El Milagro, Inc. - Plant No. 4	2400 W 21st Place	Chicago	Non-Categorical
10888	Elé Corporation	7847 W 47th Street	McCook	Organic Chemicals, Plastics, and Synthetic Fibers
24756	Electronic Interconnect Corp	2700 W Touhy Avenue	Elk Grove Village	Metal Finishing
12222	Electronic Plating Company	1821 S 54th Avenue	Cicero	Metal Finishing
11369	Elgin Sweeper Company	1300 W Bartlett Road	Elgin	Metal Finishing
10425	Elkay Manufacturing Company	2700 S 17th Avenue	Broadview	Non-Categorical
11977	Empire Hard Chrome	1615 S Kostner Avenue	Chicago	Electroplating
25146	Empire Hard Chrome Plant 2	1537 S Wood Street	Chicago	Metal Finishing
10427	Enameled Steel & Sign Co.	4568 W Addison Street	Chicago	Electroplating
15546	En-Chro Plating, Ltd.	2755 W Lake Street	Melrose Park	Metal Finishing
14287	Engis Corporation, Inc.	105 W Hintz Road	Wheeling	Metal Finishing
25246	Envirite of Illinois, Inc.	16435 S Center Avenue	Harvey	Centralized Waste Treatment
10204	Ester Solutions	5851 W 73rd Street	Bedford Park	Organic Chemicals, Plastics, and Synthetic Fibers
26499	Ex-Cell Kaiser, LLC	11240 Melrose Avenue	Franklin Park	Metal Finishing
26759	Expert Metal Finishing, Inc.	2120 N West Street	River Grove	Metal Finishing
25521	Faspro Technologies, Inc.	165 King Street	Elk Grove Village	Metal Finishing
12240	Ferrara Candy Company	7301 W Harrison Street	Forest Park	Non-Categorical
25645	Ferrara Candy Company	3000 W Washington Blvd	Bellwood	Non-Categorical
25938	Five Star Laundry - Chicago, LLC	1060 W Division Street	Chicago	Non-Categorical
25367	Fluid Management, Inc.	1023 Wheeling Road	Wheeling	Metal Finishing
13495	Flying Food Catering, Inc.	4330 Transworld Road	Schiller Park	Non-Categorical
25554	Focal Point LLC	4201 S Pulaski Road	Chicago	Metal Finishing
26788	Focal Point LLC	4141 S Pulaski Road	Chicago	Metal Finishing

Facility ID	Facility Name	Address	City	CFR
14279	Foodliner, Inc.	9200 King Street	Franklin Park	Non-Categorical
13389	Ford Motor Company - Chicago Assembly Plant	12600 S Torrence Avenue	Chicago	Metal Finishing
11905	Forest Plating Co.	930 Des Plaines Avenue	Forest Park	Electroplating
26914	Fotofab, LLC	3758 W Belmont Avenue	Chicago	Metal Finishing
26791	Fresenius Kabi USA, LLC	2020 Ruby Street	Melrose Park	Pharmaceutical Manufacturing
27133	Fresh Express Incorporated	1109 E Lake Street	Streamwood	Non-Categorical
10101	FUJIFILM Hunt Chemicals, USA, Inc.	900 Carnegie Street	Rolling Meadows	Non-Categorical
21831	G & K Services	8201 S Cork Avenue	Justice	Non-Categorical
25695	Gate Gourmet Unit 239	4347 United Parkway	Schiller Park	Non-Categorical
12719	Gatto Industrial Platers, Inc.	4620 W Roosevelt Road	Chicago	Metal Finishing
13228	Gelita USA, Inc.	10 Wentworth Avenue	Calumet City	Non-Categorical
25242	General Circuits d/b/a Delta Precision Circuits, Inc	1370 Lively Blvd	Elk Grove Village	Metal Finishing
25927	Georgia Nut Company	7500 Linder Avenue	Skokie	Non-Categorical
24817	Goose Island Beer Company	1800 W Fulton Street	Chicago	Non-Categorical
25657	Grace Davison	4099 W 71st Street	Chicago	Non-Categorical
24403	Grecian Delight Foods, Inc.	1201 Tonne Road	Elk Grove Village	Non-Categorical
26280	Greenlee Diamond Tool Company	2375 W Touhy Avenue	Elk Grove Village	Metal Finishing
11724	Griffin Plating Co., Inc.	1636 W Armitage Avenue	Chicago	Electroplating
13032	Griffith Foods, Inc.	12200 S Central Avenue	Alsip	Non-Categorical
14265	Harbor View	2000 E 122nd Street	Chicago	Non-Categorical
27062	Heligear Acquisition Co., d/b/a Northstar Aerospace (Chicago) Inc.	6006 W 73rd Street	Bedford Park	Metal Finishing
20191	Heniff Transportation Systems, Inc.	5240 W 123rd Place	Alsip	Transportation Equipment Cleaning
25136	Hinckley Springs	6055 S Harlem Avenue	Chicago	Non-Categorical
25137	Hinckley Springs	6155 S Harlem Avenue	Chicago	Non-Categorical
10487	Horween Leather Co.	2015 N Elston Avenue	Chicago	Leather Tanning and Finishing
11474	Hu-Friedy Mfg. Co. LLC	3232 N Rockwell Street	Chicago	Metal Finishing
15962	HV Manufacturing Company	1197 Willis Avenue	Wheeling	Non-Categorical
13717	Imperial Plating Company, Inc.	7030 W 60th Street	Chicago	Metal Finishing
26338	IMS Engineered Products, LLC	1 Innovation Drv	Des Plaines	Metal Finishing
25417	Ingredion Incorporated - Argo Plant	6400 S Archer Avenue	Bedford Park	Non-Categorical
10012	Inland Die Casting Company	161 Carpenter Avenue	Wheeling	Metal Molding and Casting
10851	Innophos, Inc.	612 E 138th Street	Chicago	Non-Categorical
13021	Innova Division of Griffith Foods, Inc.	1437 W 37th Street	Chicago	Non-Categorical
25768	Interlake Mecalux, Inc.	1600 N 25th Avenue	Melrose Park	Metal Finishing
12402	International Processing Company of America	1485 Lively Blvd	Elk Grove Village	Electroplating

Facility ID	Facility Name	Address	City	CFR
12718	International Silver Plating, Inc.	364 Park Avenue	Glencoe	Electroplating
11062	James Precious Metals Plating	5700 N Northwest Hwy	Chicago	Metal Finishing
11396	Jensen Plating Works, Inc.	1842 N Western Avenue	Chicago	Metal Finishing
26286	Jernberg Industries, LLC	328 W 40th Place	Chicago	Non-Categorical
27528	Jet Finishers Acquisition, LLC	79 Bond Street	Elk Grove Village	Metal Finishing
10518	Jewel Food Stores	1955 W North Avenue	Melrose Park	Non-Categorical
12424	JLO Metal Products, Inc.	5841 W Dickens Avenue	Chicago	Aluminum Forming
13724	Jonas Enterprises, Inc.	21 N Kilpatrick Avenue	Chicago	Electroplating
25810	Kellogg Company	2945 W 31st Street	Chicago	Non-Categorical
26968	Keystone Automotive Division of LKQ Corporation	5328 W 123rd Place	Alsip	Metal Finishing
25839	Kinder Morgan Liquids Terminals, LLC	12200 S Stony Island Avenue	Chicago	Non-Categorical
25773	Kinder Morgan Liquids Terminals, LLC-Argo	8500 W 68th Street	Argo	Non-Categorical
27719	Kinder Morgan Liquids Terminals, LLC-Argo-Harlem	4811 S Harlem Avenue	Forest View	Non-Categorical
24048	Koch Foods, Inc.	4404 W Berteau Avenue	Chicago	Non-Categorical
15505	Komet of America Inc.	2050 Mitchell Blvd	Schaumburg	Metal Finishing
10157	Koppers Incorporated	3900 S Laramie Avenue	Stickney	Organic Chemicals, Plastics, and Synthetic Fibers
27727	Kraft Heinz Company	801 Waukegan Road	Glenview	Non-Categorical
10536	Kramer, H & Co.	1343 W 21st Street	Chicago	Nonferrous Metals Manufacturing
11883	Krel Laboratories Inc	383 N Avers Avenue	Chicago	Electroplating
11882	Krel Laboratories Inc	388 N Avers Avenue	Chicago	Electroplating
27157	Lagunitas Brewery	1843 S Washtenaw Avenue	Chicago	Non-Categorical
12115	Lake Landfill Gas Recovery	1300 Willow Road	Northbrook	Non-Categorical
15025	Lake Region Medical	140 E Hintz Road	Wheeling	Metal Finishing
11206	Land O'Frost	16850 Chicago Avenue	Lansing	Non-Categorical
10926	Lawrence Foods	2200 Lunt Avenue	Elk Grove Village	Non-Categorical
26019	Lechner and Sons Uniform Rental	420 Kingston Ct	Mount Prospect	Non-Categorical
26253	Lifeway Foods, Inc.	6431 W Oakton Street	Morton Grove	Non-Categorical
26726	Liquid Environmental Solutions	12123 S Stony Island Avenue	Chicago	Centralized Waste Treatment
27715	LSG Sky Chefs	200 E Touhy Avenue	Des Plaines	Non-Categorical
13923	Magnetic Inspection Laboratory Inc	1401 Greenleaf Avenue	Elk Grove Village	Metal Finishing
25757	Manan Medical Products	241 W Palatine Road	Wheeling	Metal Finishing
24047	Mandel Metals Inc. d/b/a U.S. Standard Sign	11400 Addison Avenue	Franklin Park	Metal Finishing
26618	Marathon Cutting Die, Inc.	2340 S Foster Avenue	Wheeling	Metal Finishing
26484	Mars Chocolate North America, LLC	2019 N Oak Park Avenue	Chicago	Non-Categorical
11177	Material Sciences Corporation-Plant 2	2300 E Pratt Blvd	Elk Grove Village	Coil Coating

Facility ID	Facility Name	Address	City	CFR
11064	Mech-Tronics	1635 N 25th Avenue	Melrose Park	Electroplating
25836	Mech-Tronics Corporation	1707 N 25th Avenue	Melrose Park	Metal Finishing
13568	Medi-Physics Inc. d/b/a GE Healthcare	3350 N Ridge Avenue	Arlington Heights	Pharmaceutical Manufacturing
24882	Metal Box International, Inc.	11600 King Street	Franklin Park	Metal Finishing
26952	Metal Impact LLC	1501 Oakton Street	Elk Grove Village	Metal Finishing
24771	Metal-Matic Inc.	7200 S Narragansett Avenue	Bedford Park	Iron and Steel Manufacturing
10975	Methode Electronics Inc	1700 Hicks Road	Rolling Meadows	Metal Finishing
13772	Mickey's Linen & Towel Supply Inc.	4501 W Addison Street	Chicago	Non-Categorical
26554	MicroLink Devices, Inc.	6457 W Howard Street	Niles	Electrical and Electronic Components
26676	Micron Metal Finishing, LLC	8585 S 77th Avenue	Bridgeview	Metal Finishing
10760	Midwestern Rust Proof, Inc.	3636 N Kilbourn Avenue	Chicago	Electroplating/Metal Finishing
13289	Mike's Anodizing	859 N Spaulding Avenue	Chicago	Electroplating
27079	Mondelez Global, LLC	7300 S Kedzie Avenue	Chicago	Non-Categorical
27617	Montana Metal Products LLC	25 E Howard Street	Des Plaines	Metal Finishing
25991	Morgan Services, Inc.	4301 S Morgan Street	Chicago	Non-Categorical
14298	Morton Grove Pharmaceuticals	6451 W Main Street	Morton Grove	Pharmaceutical Manufacturing
26874	MRC Polymers, Inc.	3307 S Lawndale Avenue	Chicago	Plastics Molding and Forming
14095	Mullins Food Products, Inc.	2200 S 25th Avenue	Broadview	Non-Categorical
25052	NACME Steel Processing, LLC	429 W 127th Street	Chicago	Iron and Steel Manufacturing
10593	Nalco Company	6216 W 66th Place	Bedford Park	Pesticide Chemicals
24711	Nation Pizza and Foods	601 E Algonquin Road	Schaumburg	Non-Categorical
15958	National Container Group, LLC	3620 W 38th Street	Chicago	Non-Categorical
24395	National Technology Inc	1101 Carnegie Street	Rolling Meadows	Metal Finishing
10509	Navistar, Inc.	10400 W North Avenue	Melrose Park	Non-Categorical
10698	Nestle Chocolate & Confections	3401 Mt. Prospect Road	Franklin Park	Non-Categorical
25677	Nestle Professional Beverages	1821 S Kilbourn Avenue	Chicago	Non-Categorical
27713	New Avon, LLC	6901 Golf Road	Morton Grove	Pesticide Chemicals
25910	Nickel Composite Coatings, Inc.	6454 W 74th Street	Bedford Park	Metal Finishing
19614	Nobert Plating Co-Plant 1	340 N Ashland Avenue	Chicago	Electroplating/Metal Finishing
12622	Nobert Plating Co-Plant 2	1445 N Pulaski Road	Chicago	Electroplating
26295	North American Electroless Nickel	776 W Lunt Avenue	Elk Grove Village	Metal Finishing
13547	Northrop Grumman Systems Corporation	600 Hicks Road	Rolling Meadows	Metal Finishing
24696	Nu-Way Industries, Inc.	555 Howard Avenue	Des Plaines	Metal Finishing
10766	O & K American Corporation	4630 W 55th Street	Chicago	Iron and Steel Manufacturing/Metal Finishing
13124	Omega Plating Inc.	4704 W 137th Street	Crestwood	Metal Finishing

Facility ID	Facility Name	Address	City	CFR
25248	Ortek Inc.	7601 W 47th Street	McCook	Centralized Waste Treatment
24078	OSI Industries, LLC	4545 S Racine Avenue	Chicago	Non-Categorical
27728	OSI Industries, LLC	4201 S Ashland Avenue	Chicago	Non-Categorical
10219	Owens Corning Roofing and Asphalt, LLC	5824 S Archer Road	Summit	Non-Categorical
27022	Pacific Coast Feather	414 E Golf Road	Des Plaines	Non-Categorical
15106	Paxton Landfill-IEPA Remediation Section	11900 S Oglesby Avenue	Chicago	Non-Categorical
26796	Pepsi Beverages Company	650 W 51st Street	Chicago	Non-Categorical
12126	Perfection Plating, Inc.	775 Morse Avenue	Elk Grove Village	Electroplating
26921	Perfection Plating, Inc.	1521 Morse Avenue	Elk Grove Village	Metal Finishing
11920	Petersen Finishing Corp	3827 N Willow Street	Schiller Park	Electroplating
13721	Precise Finishing Company, Inc.	2842 Birch Street	Franklin Park	Electroplating
10635	Precision Instruments Inc.	1846 Miner Street	Des Plaines	Metal Finishing
12127	Precision Plating Company, Inc.	4123 W Peterson Avenue	Chicago	Electroplating/Metal Finishing
13468	Premcor Alsip Distribution Center	3600 W 131st Street	Alsip	Petroleum Refining
10636	Primrose Candy Company	4111 W Parker Avenue	Chicago	Non-Categorical
13393	Progress Rail Locomotive Inc.	9301 W 55th Street	McCook	Non-Categorical
26627	Progressive Coating	900 S Cicero Avenue	Chicago	Metal Finishing
21463	Pro-Tec Metal Finishing Corp	1428 N Kilpatrick Avenue	Chicago	Metal Finishing
27723	Pullman Innovations	2701 E 100th Street	Chicago	Non-Categorical
10182	PVS Chemical Solutions, Inc.	12260 S Carondolet Avenue	Chicago	Inorganic Chemicals Manufacturing
13277	Q.C. Finishers, Inc.	10244 Franklin Avenue	Franklin Park	Metal Finishing
14999	Quala Services, LLC	803 E 120th Street	Chicago	Transportation Equipment Cleaning
10639	Quam Nichols Co.	234 E Marquette Road	Chicago	Metal Finishing
25523	R & B Powder Coatings	4000 S Bell Avenue	Chicago	Metal Finishing
15043	R & R Research d/b/a E J Somerville Co.	1305 N 31st Avenue	Melrose Park	Metal Finishing
13115	R. C. Industries, Inc.	1420 N Lamon Avenue	Chicago	Electroplating
15879	Rainbow Art, Incorporated	2224 W Grand Avenue	Chicago	Metal Finishing
11429	Regis Technologies, Inc.	8210 N Austin Avenue	Morton Grove	Organic Chemicals, Plastics, and Synthetic Fibers
11241	Reliable Plating Corp	1538-46 W Lake Street	Chicago	Electroplating
24778	Rich Products Manufacturing Corporation	6200 Mulford Street	Niles	Non-Categorical
24610	River Bend Prairie	801 E 138th Street	Dolton	Non-Categorical
26811	Riverdale Plating and Heat Treating, LLC	680 W 134th Street	Riverdale	Electroplating
27599	RKC Cleaners	675 Greenleaf Avenue	Elk Grove Village	Non-Categorical
27704	RMHI, Inc. d/b/a Streamwood Plating Co.	1545 Brandy Parkway	Streamwood	Electroplating
25857	RNA Corporation	13750 Chatham Street	Blue Island	Non-Categorical

Facility ID	Facility Name	Address	City	CFR
26368	RoHS Compliance Services, Inc.	1260 Howard Street	Elk Grove Village	Metal Finishing
14138	Roman Decorating Products LLC	824 State Street	Calumet City	Non-Categorical
26680	Roscoe Company	3535 W Harrison Street	Chicago	Non-Categorical
10651	Rose Packing Co., Inc.	4900 S Major Avenue	Chicago	Non-Categorical
26246	Rupari Food Service, Inc.	15600 S Wentworth Avenue	South Holland	Non-Categorical
15773	S & B Finishing Co, Inc	3005 W Franklin Blvd	Chicago	Metal Finishing
10670	S & C Electric Co.	6601 N Ridge Blvd	Chicago	Metal Finishing
25960	S B Boron Corp	20 Davis Drv	Bellwood	Non-Categorical
13429	Safety-Kleen Systems, Inc.	633 E 138th Street	Dolton	Non-Categorical
11339	Saporito Finishing Company	3119 S Austin Avenue	Cicero	Electroplating/Metal Finishing
13574	Senior Flexonics	300 E Devon Avenue	Bartlett	Metal Finishing
10680	Sipi Metals Corporation	1720 N Elston Avenue	Chicago	Nonferrous Metals Manufacturing
11951	Skild Plating Corp	1516-18 N Kilpatrick Avenue	Chicago	Electroplating
10683	Sloan Valve Co.	10500 Seymour Avenue	Franklin Park	Metal Finishing
10689	Sokol & Co.	5315 Dansher Road	Countryside	Non-Categorical
25700	Solvay USA Inc.	14000 S Seeley Avenue	Blue Island	Soap and Detergent Manufacturing
24585	Sorini Ring Manufacturing Co. Inc	2524 S Blue Island Avenue	Chicago	Metal Finishing
27620	South Chicago Packing LLC	945 W 38th Street	Chicago	Non-Categorical
11487	Specified Plating Co.	320 N Harding Avenue	Chicago	Electroplating
27120	St Regis Manufacturing LLC Trading as RS Owens & Company	5535-45 N Lynch Avenue	Chicago	Metal Finishing
26008	Stampede Meat, Inc.	7351 S 78th Avenue	Bridgeview	Non-Categorical
24847	Sterling Plating	4629 N Ronald Street	Harwood Heights	Metal Finishing
25279	Sunrise Electronics	130 Martin Ln	Elk Grove Village	Metal Finishing
15905	Superior Carriers Inc	2125 W 162nd Street	Markham	Transportation Equipment Cleaning
10847	Switchcraft Inc	5555 N Elston Avenue	Chicago	Metal Finishing
23963	T.A.C. Inc.	7739 W 59th Street	Summit	Non-Categorical
24828	T.A.C. Inc.	7745 W 59th Street	Summit	Transportation Equipment Cleaning
26982	Taylor Prepared Foods, Inc.	200 N Artesian Avenue	Chicago	Non-Categorical
14260	Three J's Industries, Inc.	701 Landmeier Road	Elk Grove Village	Metal Finishing
21525	Tone Products, Inc.	2129 N 15th Avenue	Melrose Park	Non-Categorical
10098	Tootsie Roll Industries, LLC	7401 S Cicero Avenue	Chicago	Non-Categorical
27660	Trend Technologies, LLC	737 Fargo Avenue	Elk Grove Village	Metal Finishing
25479	Tru-Vue, Inc.	9400 W 55th Street	McCook	Non-Categorical
13233	U S Plating Co.	2136 S Sawyer Avenue	Chicago	Electroplating
20636	Underwriters Laboratories, Inc.	333 Pfingsten Road	Northbrook	Non-Categorical

Facility ID	Facility Name	Address	City	CFR
26387	Unifirst Corporation	2045 N 17th Avenue	Melrose Park	Non-Categorical
11443	Unilever Illinois Mfg., LLC	2816 S Kilbourn Avenue	Chicago	Non-Categorical
25321	Unitech Industries	1461 Elmhurst Road	Elk Grove Village	Metal Finishing
25231	United Displaycraft	333 E Touhy Avenue	Des Plaines	Metal Finishing
26725	United Electronics Corporation	3615 Wolf Road	Franklin Park	Metal Finishing
13676	United Re-Manufacturing Company Inc.	9550 Soreng Avenue	Schiller Park	Metal Finishing
10735	Unity Manufacturing Co.	1260 N Clybourn Avenue	Chicago	Metal Finishing
11464	UOP LLC	8400 Joliet Road	McCook	Organic Chemicals, Plastics, and Synthetic Fibers
25083	V & V Supremo Foods, Inc.	1934 W 21st Street	Chicago	Non-Categorical
13714	V P Anodizing Inc	1819 N Lorel Avenue	Chicago	Metal Finishing
13053	V P Plating & Pariso Inc	1836 N Lockwood Avenue	Chicago	Electroplating
25855	Vanee Foods Company	2759 S 25th Avenue	Broadview	Non-Categorical
12167	Vanee Foods Company, Inc.	5418 McDermott Drv	Berkeley	Non-Categorical
26573	Vantage Oleochemicals	4650 S Racine Avenue	Chicago	Non-Categorical
26095	Vee Pak, Inc.	5331 Dansher Road	Countryside	Non-Categorical
25859	Vegetable Juices, Inc.	7400 S Narragansett Avenue	Bedford Park	Non-Categorical
26385	Ventura Foods, LLC d/b/a Marie's Salad Dressings	201 W Armory Drv	Thornton	Non-Categorical
27652	Vienna Beef, Ltd.	1000 W Pershing Road	Chicago	Non-Categorical
10394	Vita Food Products Inc	2222 W Lake Street	Chicago	Non-Categorical
11395	Waltz Brothers Inc	10 W Waltz Drv	Wheeling	Metal Finishing
27648	Water Integrated Treatment Systems LLC	14753 Greenwood Road	Dolton	Centralized Waste Treatment
11664	Water Saver Faucet Co.	701 W Erie Street	Chicago	Metal Finishing
26892	Weber-Stephen Products LLC	200 E Daniels Road	Palatine	Metal Finishing/Porcelain Enameling
26893	Weber-Stephen Products LLC	560 S Hicks Road	Palatine	Metal Finishing
13340	West Town Plating Inc.	5243 W 25th Place	Cicero	Electroplating
13985	Western Springs Water Plant	614 Hillgrove Avenue	Western Springs	Non-Categorical
10132	Wheatland Tube - Division of Zekelman Industries, Inc.	4435 S Western Blvd	Chicago	Iron and Steel Manufacturing
13810	Wieland Metals, Inc	567 Northgate Parkway	Wheeling	Copper Forming
14105	Winnetka Landfill	1390 Willow Road	Winnetka	Non-Categorical
25999	Wynright Corporation	11000 S Lavergne Avenue	Oak Lawn	Metal Finishing
10770	Zegers Inc.	16727 Chicago Avenue	Lansing	Coil Coating
11938	Zenith Fabricating Company	1928 N Leamington Avenue	Chicago	Metal Finishing

Appendix I

Village of Norridge

Soil and Erosion Customer Complaint Form

Public Works Department

PLEASE PRINT ALL INFORMATION LEGIBLY

Date: _____ Time: _____ Weather: _____

Callers Name _____

Address _____ Phone # _____ Cell # _____

Utilize this space to record the citizens concerns. Please give in-depth description of problems including subdivisions, house numbers, addresses or other identifiable descriptors.

City Department(s) Referred To

( ) Code Enforcement ( ) E-911 ( ) Engineering ( ) Inspections

( ) Parks/Recreation ( ) Public Works ( ) Sign Department ( ) Street Department

( ) Stormwater Division ( ) Water & Sewer

( ) Other _____

Referred Department's Response

Please outline actions taken and completion date of the problem reported.

Permit # Date Issued Prior Citations

Reviewing Department Manager

Supervisor Name: _____ Supervisor Signature: _____ Date: _____

Please Print

City Managers Review

Signature: _____ Date: _____

Co Mail: _____ Date: _____

Emailed: _____ Date: _____ Time: _____

Notes: _____

Appendix J

Sec. 46-31. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Flood base elevation means the elevation of the highest flood of record, as indicated on the Hydrologic Investigation Atlas, as prepared by the United States Geological Survey in cooperation with the Northeastern Illinois Planning Commission. Flood base elevations at intermediate locations shall be interpolated along the watercourse between the two nearest flood base elevations, one each upstream and downstream. The controlling flood base elevation for any building site shall be the same as the flood base elevation at the nearest point of the watercourse as measured on a line perpendicular to the direction of the watercourse.

Floodplain areas means those areas delineated on the maps prepared by the United States Geological Survey in cooperation with the Northeastern Illinois Planning Commission.

(Code 1972, ch. 14, § 1)

Cross reference— Definitions generally, § 1-2.

Sec. 46-32. - Flood hazard reduction generally.

The flood hazard areas shall be subject to floodplain regulations as established by the village and set forth in this article. Such regulations will guide development in order to promote the public health, safety and welfare through flood regulations; provided, however, the provisions of this article shall not apply to existing subdivisions within the floodplain as to which covenants, approved by the village board, pertaining to the minimum elevations of streets, lots and structures recorded prior to the date of the passage of the ordinance from which this section is derived.

(Code 1972, ch. 14, § 2(a))

Sec. 46-33. - Flood base elevation.

Exceptions to the elevation restrictions stated in this article may be granted upon the recommendation of the village engineer by the village board only in certain situations where it can be determined that recent engineering improvements have been undertaken to lower the actual flood base elevation, and if the alternate plan of flood control and storm drainage plan is in

harmony with the purpose and intent expressed in this article and is equally effective as provided in this article. In no case, however, shall a building or structure be allowed to be erected with the lowest foundation opening elevation lower than the flood base elevation.

(Code 1972, ch. 14, § 2(i))

Sec. 46-34. - Erecting or moving buildings or structures.

No new or existing building or structure shall be erected or moved within a floodplain unless the lowest floor, including the basement floor, is at an elevation which is not less than 2½ feet above the flood base elevation for the site; provided, however, that basement floors may be erected below such elevations when the top of any basement wall or the bottom of any opening therein is not less than 2½ feet above such elevation, and the construction of such basement floors and walls complies with the requirements of the building code of the village.

(Code 1972, ch. 14, § 2(b))

Cross reference— Buildings and building regulations, ch. 18.

Sec. 46-35. - Elevation of ground.

The elevation of the ground for a minimum distance of five feet immediately surrounding any building or structure erected or moved within a floodplain shall be at an elevation which is not less than one foot above the flood base elevation for the site and shall be sloped to drain away from the walls for a distance of at least five feet.

(Code 1972, ch. 14, § 2(c))

Sec. 46-36. - Crown of street pavements.

The crown of street pavements hereafter built in the flood hazard area shall not be lower than the flood base elevation plus two feet, in case of major streets, and plus one foot, in the case of other streets.

(Code 1972, ch. 14, § 2(d))

Sec. 46-37. - Drainage and sewer requirements.

When the building wall encloses open space that is below the floodplain elevation, low level

gravity building drain connections are prohibited and overhead sewers are required.

(Code 1972, ch. 14, § 2(e))

Sec. 46-38. - Floodproofing of structures.

All structures within floodplain areas must be floodproofed. The structure must be watertight, and the design must include measures to cope with sewer backup and groundwater seepage.

(Code 1972, ch. 14, § 2(f))

Sec. 46-39. - Rim elevation of sanitary sewer manholes.

All sanitary sewer manholes constructed in the flood hazard areas must have a rim elevation a minimum of one foot above the record flood base elevation for the area as indicated on the flood map prepared by the United States Geological Survey. When the manhole rim is less than 2½ feet above the flood of record, a watertight manhole cover must be provided.

(Code 1972, ch. 14, § 2(g))

Sec. 46-40. - Retention of streams and floodwater runoff channels.

Existing streams and floodwater runoff channels are to be retained either in their present location or in locations approved by the village engineer. Floodway easements of at least 20 feet wide shall be provided and shown on the plat. The easement shall permit necessary public channel maintenance and improvement work and access of equipment therefor, but shall prohibit buildings, fences and other obstructing structures thereon by the owner.

(Code 1972, ch. 14, § 2(h))

Appendix K

Stormwater Pollution Prevention Plan

for:

Village of Norridge
4000 N. Olcott Avenue
Norridge, IL 60706
708-453-0800

SWPPP Contact(s):

Mr. Joe Spain
8415 West Foster Avenue
Norridge, IL 60706
708-453-0800
jspain@villageofnorridge.com

SWPPP Preparation Date:

November 7, 2017

Contents

SECTION 1: FACILITY DESCRIPTION AND CONTACT INFORMATION

1.1 Facility Information

Facility Information

Name of Facility: Village of Norridge Public Works Facility

Street: 8415 West Foster Avenue

City: Norridge State: IL ZIP Code: 60706

County or Similar Subdivision: Cook County

Permit Tracking Number: As part of NPDES General Permit

Latitude/Longitude (degrees, minutes, seconds)

Latitude: Longitude:

1. 41° 58' 25" N 1. 87° 50' 16" W

Method for determining latitude/longitude (check one):

☐ USGS topographic map (specify scale:_____) ☐ EPA Web site ☒ GPS

☐ Other (please specify): _____

Is the facility located in Indian Country? ☐ Yes ☒ No

If yes, name of Reservation, or if not part of a Reservation, indicate "not applicable."_____

_____

Is this facility considered a Federal Facility? ☐ Yes ☒ No

Estimated area of industrial activity at site exposed to stormwater: 2.29 (acres)

Discharge Information

Does this facility discharge stormwater into an MS4? ☐ Yes ☒ No

If yes, name of MS4 operator:

Name(s) of water(s) that receive stormwater from your facility: Cook County Storm Sewer, Des Plaines River

Are any of your discharges directly into any segment of an "impaired" water? ☐ Yes ☒ No

If Yes, identify name of the impaired water (and segment, if applicable):_____

Identify the pollutant(s) causing the impairment:_____

For pollutants identified, which do you have reason to believe will be present in your discharge? N/A

For pollutants identified, which have a completed TMDL? N/A

Do you discharge into a receiving water designated as a Tier 2 (or Tier 2.5) water? ☐ Yes ☒ No

Are any of your stormwater discharges subject to effluent guidelines? ☐ Yes ☒ No

1.2 Contact Information/Responsible Parties

Facility Operator (s):

Name: Village of Norridge Public Works Department
Address: 8415 West Foster Avenue
City, State, Zip Code: Norridge, IL 60706
Telephone Number: 708-453-0800
Email address: jspain@villageofnorridge.com
Fax number: 708-453-9335

Facility Owner (s):

Name: Village of Norridge
Address: 4000 N. Olcott Avenue
City, State, Zip Code: Norridge, IL 60706
Telephone Number: 708-453-0800
Email address: jspain@villageofnorridge.com
Fax number: 708-453-9335

SWPPP Contact:

Name: Joe Spain
Telephone number: 708-453-0800
Email address: jspain@villageofnorridge.com
Fax number: 708-453-9335

1.3 Stormwater Pollution Prevention Team

Staff Names	Individual Responsibilities
Joe Spain	Public Works Superintendent – SWPPP Manager / Project Oversight
Joe Spain	BMP Inspector – (General Operations) The BMP Inspector will be a participant in the inspection and monitoring processes and assessing whether corrective actions are needed. Training of key personnel will be included in his duties.
Joe Spain	BMP Inspector - (Daily Operations) The BMP Inspector will perform the inspection and monitoring processes on a day-to-day basis as well as the record keeping.

1.4 Activities at the Facility

The Village of Norridge Public Works Facility is owned and operated by the Village of Norridge. The Site is comprised of 2 buildings, approximately 20 vehicles including 12 industrial maintenance vehicles (street sweeper, vactor truck, salt trucks, etc.). The Site is used for municipal maintenance activities as well as storage of equipment and materials.

1.5 General Location Map

A copy of the General Location Map is included in the appendix to this report as Attachment "A".

1.6 Site Map

A copy of the Site Map for this facility is included in the appendix to this report as Attachment "B".

SECTION 2: POTENTIAL POLLUTANT SOURCES

2.1 Industrial Activity and Associated Pollutants

Industrial Activity	Associated Pollutants
Material Storage	Antifreeze, motor oil, hydraulic oil, gear oil, diesel fuel
Maintenance	Antifreeze, motor oil, hydraulic oil, gear oil, diesel fuel
Equipment/vehicle fueling	Antifreeze, motor oil, hydraulic oil, gear oil, diesel fuel
Stockpiling	Stone, Salt

2.2 Spills and Leaks

Areas of Site Where Potential Spills/Leaks Could Occur

Location	Outfalls
Maintenance area	Sanitary Sewer
Storage Area	Des Plaines River (Ultimate receiving water)

Description of Past Spills/Leaks

Date	Description	Outfalls
N/A	N/A	N/A

2.3 Non-Stormwater Discharges Documentation

- Date of evaluation: April 21, 2017
- Description of the evaluation criteria used: Visual Inspection
- List of the outfalls or onsite drainage points that were directly observed during the evaluation: Catch Basins, Triple Basin
- Different types of non-stormwater discharge(s) and source locations: N/A
- Action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge:

  Spill kits have been obtained for the public works facility. No unauthorized discharges have been identified to date. The primary objective of this SWPPP is to prevent and reduce residual contamination of the yard area storm sewers.

2.4 Salt Storage

The salt piles are located beneath a covered roof and on a concrete pad. Approximately 300 Ton are kept on site at a given time. Note that the salt storage area can reasonably contain up to 450 Ton of salt if necessary.

2.5 Sampling Data Summary

The storm sewers from the site discharge into a Cook County storm sewer which travels south to Lawrence Avenue and then west to the Des Plaines River. It is unknown what sampling Cook County performs on the discharge of its storm sewer.

SECTION 3: STORMWATER CONTROL MEASURES

3.1 Minimize Exposure

All materials in section 2.1 shall be located to minimize exposure to storm water and precipitation to the maximum extent practical. As appropriate, materials shall be protected with storm-resistant coverings to prevent exposure to rain, snow, snowmelt, runoff and where appropriate shall be stored in a self-contained, lined, and bermed area.

The salt material is stored beneath a roof. Outdoor maintenance activities are not performed during inclement weather.

3.2 Good Housekeeping

The intent of good housekeeping is to maintain a clean and orderly work environment, which in turn reduces the possibility of accidental spills cause by mishandling of equipment and materials. Good housekeeping, therefore is considered an effective first step in preventing the pollution of storm water. General good housekeeping practices shall be employed throughout the project site and shall minimally include the following:

Maintain a neat and orderly work place;
Do not let scrap accumulate around work areas;
Sweep up after each shift;
Clean up drips and spills promptly;
Keep lids and covers closed tightly on all containers unless you are actively using them;
Ensure all containers are properly labeled;
Position "duck ponds" under parked equipment when not in use for an extended period of time;
Place drip pans under small leaks until they can be permanently repaired

Waste materials are removed and disposed of on an as-needed basis by a professional licensed waste hauler (Dukes Oil) under Contract by the Village. The site is swept and cleaned on a weekly basis every Friday, at which time a detailed visual inspection is performed for waste materials, and container leaks.

3.3 Maintenance

Preventative maintenance involves the inspection and maintenance of equipment and systems to uncover conditions that could cause breakdown, and correction of these conditions by adjustment, repair, or replacement of worn parts before the equipment or systems fail. Since regularly scheduled inspections can result in early detection of potential problems, personnel shall document inspections in logs as a good preventative maintenance technique. Copies of completed records and forms shall be kept on file at the facility.

3.4 Spill Prevention and Response

Spill prevention and response procedures will be discussed periodically during employee safety meetings to ensure that all personnel understand the procedures. The following specific guidance for spill prevention and response will be provided to all personnel:

NEVER hose down a spill;
Do not wash a spill into a ditch;
Clean up all leaks, spills, and drips immediately;
Use absorbents to pick up liquid materials;
Ensure that all spilled material is picked up;
Do not leave any residues that storm water runoff might wash away;
Protect ditches by utilizing absorbent boom or geotextiles; and
Dispose of all cleanup waste properly by placing it in an appropriate container, covering, labeling, and taking it to the designated storage area.

All potential of leaks will be placed in plastic totes or reinforced containment liners and surrounded by a protective dike. This containment area will contain minimally 110% of a single largest container.

Oil spill kits with booms, emergency guidebook, shovels, and absorbent pads will be readily accessible to reduce response time. As mentioned in other areas of this plan, routine inspections shall be performed frequently and shall emphasize liner/dike integrity, tank integrity, fuel pumps, valves, hoses, and spill supplies. All personnel involved with related operations shall be trained on inspection and fueling procedures. Included in this training will be the use of spill kit supplies, communications, vehicle operation, fueling equipment use, response procedures, and where to locate emergency contact numbers for spill report.

Emergency contact numbers shall be posted at the facility.

Procedures for reporting and initial containment of discharges:
1. Personnel Safety: Warn persons in immediate area and use appropriate PPE
2. Safety Zone: Restrict area and eliminate ignition sources.
3. Stop Flow: Ensure pump, valves, and source is secure.
4. Assess & Contain: Act to contain or divert as necessary.

Notification: Notify appropriate agencies and management of the extent of injuries, damage, spill quantities and required assistance.

3.5 Erosion and Sediment Controls

On an as-needed basis, rip-rap is installed to reduce the amount of sediment leaving the Public Works Facility and reduce the chance of contamination. Piles of materials are placed in bins to eliminate erosion. Materials which undergo frequent distribution are piled in a neat and tidy manner and kept small as to minimize erosion.

3.6 Management of Runoff

All stormwater from the site is captured within the site. Permanent seeding is used wherever a disturbance occurs to a grassed area. The typical structural controls such as check dams, settling ponds, etc. are not applicable due to the size of the site and the dense urban environment.

3.7 Salt Storage Piles or Piles Containing Salt

Salt is stored beneath a covered roof on a concrete pad, and surrounded by 3 walls. At the time of salt delivery, placement of the salt is given attention and a clean-up crew is available to minimize exposure to drainage areas.

3.8 MSGP Sector-Specific Non-Numeric Effluent Limits

Controls will be implemented to ensure that no solid materials are discharged into the surrounding waters of the United States. All dust will be controlled with watering as needed. There will be no offsite vehicle tracking. There will be no raw waste exposed at this facility.

3.9 Employee Training

An informational meeting shall be held on an annual basis for all officers of the SWPPP Plan, as well as other employees that work within the affected work areas. The meeting covers all aspects of the SWPPP and further work place safety provisions. The following topics will be covered:

Spill response;
Good housekeeping;
Material management practices;
BMP operations and maintenance; and
Inspection, Monitoring, Reporting, and Documentation requirements.

3.10 Non-Stormwater Discharges

There have been zero non-stormwater discharges at the site, to date, as the site is wholly owned and maintained by the Village of Norridge. In the event a non-storm water discharge is discovered, it shall be eliminated immediately.

3.11 Waste, Garbage and Floatable Debris

A weekly visual inspection is performed by staff to ensure the facility is kept in a clean condition. If waste is found to be present, it is removed at the time of inspection.

3.12 Dust Generation and Vehicle Tracking of Industrial Materials

During periods of extreme drought and wind, dust control watering shall be performed to minimize the amount of dust and other airborne materials from leaving the facility.

SECTION 4: SCHEDULES AND PROCEDURES FOR MONITORING

N/A - No samples shall be required as part of the current SWPPP.

SECTION 5: INSPECTIONS

For the routine facility inspections and the comprehensive site inspections to be performed at your site, include a description of the following:

- The names of the person(s), or the positions of the person(s), responsible for inspection: Joe Spain, Public Works Superintendent
- Specific areas of the facility to be inspected, including schedules for specific outfalls: All areas of facility

For the quarterly visual assessments to be performed at your site, include a description of the following:

- The names of the person(s), or the positions of the person(s), responsible for inspection: Joe Spain
- Specific areas of the facility to be inspected, including schedules for specific outfalls: All areas of facility

SECTION 6: DOCUMENTATION TO SUPPORT ELIGIBILITY CONSIDERATIONS UNDER OTHER FEDERAL LAWS

N/A

SECTION 7: SWPPP CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: Joe Spain Title: Public Works Superintendent

Signature: _____ Date: _____

SECTION 8: SWPPP MODIFICATIONS

Instructions:

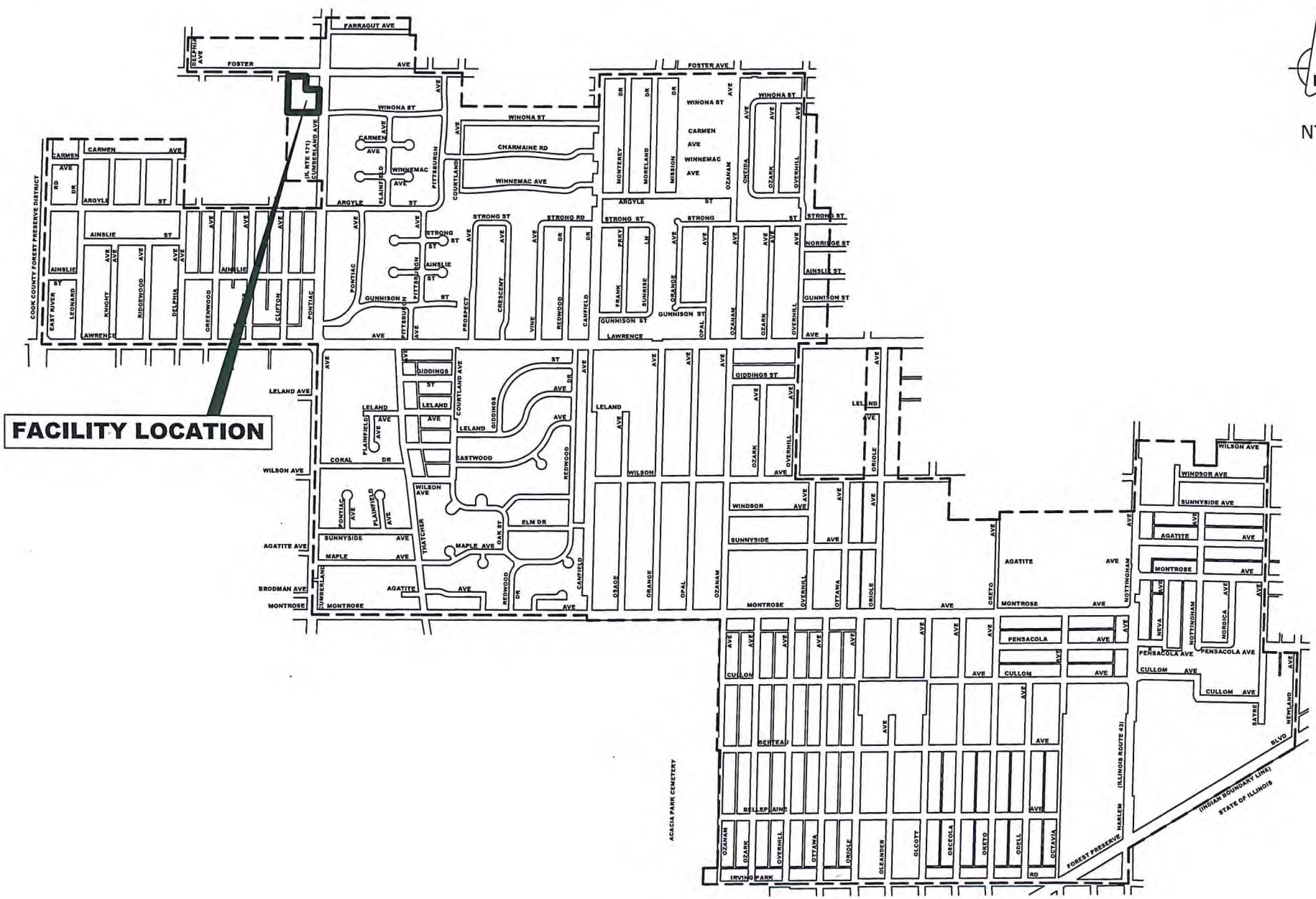
- Your SWPPP is a "living" document and is required to be modified and updated, as necessary, in response to corrective actions.
    - If you need to modify the SWPPP in response to a required corrective action, then the certification statement in section 7 of this SWPPP template must be re-signed.
    - For any other SWPPP modification, you should keep a log with a description of the modification, the name of the person making it, and the date and signature of that person.

SWPPP ATTACHMENTS

Attachment A – General Location Map

Attachment B – Site Map

Attachment C – MS4 General Permit



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VILLAGE OF NORRIDGE
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
GENERAL LOCATION MAP

SCALE:
1"=100'

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VILLAGE OF NORRIDGE
STORM WATER POLLUTION PREVENTION PLAN (SWPPP)
SITE PLAN