Omaha Metropolitan Area Solid Waste Management Study

Commissioned by: The Nebraska Sierra Club

Presented by: The Cavanaugh Law Firm, P.C., L.L.O.

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Chapter 1 - Introduction

The United States is the Saudi Arabia of solid waste. Creating both problems & opportunities for solid waste collections & procedure.

Overview of solid waste collection and disposal policy and practices in the Omaha Metropolitan Area (i.e., City of Omaha, Douglas County, and Sarpy County); with comparisons to Lincoln / Lancaster County.

Examine elements of the SCS Engineers’ Yard Waste Study, Benchmark Study and Survey.

**Importantly**, this Study identifies a series of findings, offers analysis, and recommendations for improving current solid waste policy and practices.
Do not comingle yard waste (YW).

1. **Reduce, reuse, recycle:**
   - best option is leave grass clippings on lawn;
   - but if collect, then compost.

2. Compost to reduce methane and reduce city taxes.

3. **Sustain, not kill, OmaGro.**
   Run OmaGro like a business & balance budget:
   - charge tipping fee for services delivered and
   - price compost at market instead of at 1/3rd of market.

4. **Bi-weekly pick-up of yard waste** and
   adopt 96-Gallon bins for recycling.
Correctly price plastic bags.

5. Zero price to consumer creates incentive for over use.

6. Correctly price, **not ban**, plastic bags at retail point-of-sale (a.k.a., single use).

7. Dedicate fee revenue to waste stream education (e.g., matching funds for grants) and to restoring Oma Gro.
8. City adopt “Scenario 4” in the SCS Engineers Waste Study Report (i.e., 0% comingled & 100% contracted transfer station).
9. Cardboard be recycled, instead of buried in the Pheasant Point Landfill.
10. Use Compressed Natural Gas ("CNG") powered collection trucks.
11. Use plastic bag revenues for consumer eduction that reduces the waste stream.
Honest analysis by SCS.

12. Request SCS Engineers re-calculate their GHG Emissions Analysis Table, using updated methane carbon dioxide equivalent (i.e., 34 instead of 25).

13. Request that SCS Engineers and/or WM show their full analysis for the Pheasant Point Landfill site life evaluation.
Nebraska Solid Waste Management Facilities

- Municipal Solid Waste Disposal Area
- Transfer Station
- Materials Recovery Facility
- Construction and Demolition Disposal Area
23 municipal solid waste landfills in Nebraska

Landfills pay to NDEQ a $1.25 per ton disposal fee. Pay quarterly.

Landfill “decommission period”: financial assurance required 30 years post-closure.

By statute, landfills may not accept: waste oil, lead-acid batteries, waste tires, household appliances, & unregulated household waste.
Douglas County, Sarpy County plus Butler County
39% of NE population

But, those three counties’ landfills received
47% of all NE solid waste in 2015.
21% received in Douglas County
9% received in Sarpy County
17% received in Butler County

Using a different data source:
Lancaster County is 14% of waste and 16% of population; thus,
adding Lancaster yields four counties = 61% of waste and 65% of pop.
Chapter 3 - Pheasant Point Landfill (Douglas County)

Recent History of Douglas County Landfills

Hefflinger Park (1967 - 1973)

State Street (1973 - 1989)


Pheasant Point (2003 - Now)
Pheasant Point Landfill currently used to dispose of Douglas County’s waste began operations in 2003.

Pheasant Point comprises 152-acres; is located 24 miles northwest of Omaha.

Waste Management (WM) owns and operates Pheasant Point.
The City of Omaha has a contract with WM to collect solid waste within city-limits and to dispose of the solid waste in the Pheasant Point.

**Expected Lifespan:**
Pheasant Point will reach capacity in 2137; or 120 years (says SCS’ Yard Waste Study; or is it 117?).

In 2015, it received 482,237 tons of solid waste for disposal ≈ 21% of all NE waste
Chapter 3 - Sarpy County Landfill (Recently Closed)
160-acre landfill located at 156th St & Fairview Rd in Springfield, NE.
Waste Connections owns and operates landfill.
Sarpy County Landfill received about 9% of all solid waste disposed of in Nebraska (2015).
Landfill site now serves as a transfer station.
Papillion Sanitation trucks carry to Butler County Landfill: 120 mile round-trip.
Plans are to cap the Sarpy County Landfill fall of 2017, thus beginning the 30-year decommission period.
The Butler County Landfill, located near David City, is a 145-acre landfill.

Landfill collects waste from both Butler and Sarpy counties. Negotiations underway to purchase additional land in order to expand the landfill’s operation by approximately 160-acres.

Estimates are the current acreage will reach capacity in 2052: far beyond existing Sarpy County-Waste Connections contract.
In 2015, Butler County Landfill received about 17% of all disposed solid waste in Nebraska.

But, in 2017, Butler County Landfill will become Nebraska’s largest per ton landfill - receiving about 26% of all NE solid waste.
Chapter 3 - Bluff Road Landfill (Lincoln)

A graphic of Bluff Road Landfill’s linear phases of landfill cell use. Located at 6001 Bluff Rd; Lincoln NE 68517.

NOTE: Dark brown time line starts in year 11.
Bluff Road Landfill serves City of Lincoln and Lancaster County.

**Bluff Road has plans to expand** on City owned property just east of the existing site.

Lincoln also has North 48th Street Landfill which serves as Construction and Demolition Debris (C&D) landfill; and as a transfer station.
City of Omaha which contracts 1 residential collector: Waste Management.

City of Lincoln contracts with more than 30 private residential waste collectors.

In 2015, Bluff Road received about 14% of all solid waste disposed of in Nebraska.
Research associates visit OmaGro.

Bagged and paleted compost ready for sale; compost also sold in bulk.
1994 statute and regulations restricts, but does not ban, all yard waste (YW) from NE landfills.

As a result, OmaGro created. OmaGro uses 10 acre composting site adjacent to Papillion Creek Wastewater Treatment Facility.

OmaGro has successfully accepted, composted, and sold Omaha’s yard waste delivered by WM.
But, starting in 2015 and continuing into 2016, WM claimed it had a driver shortage; WM erratically made recycling pickups.

Residential complaints started to grow.

Omaha’s Mayor deviated from the contract with WM and allowed co-mingling of YW with garbage.

In spring 2016
Omaha ended OmaGro’s critical YW supply.
Chapter 4 - Yard Waste

Yard waste is collected from all households year-round when properly prepared. Yard waste mixed with garbage will not be collected. Properly prepared yard waste will not count against the five container limit of garbage. Seasonally, yard waste will either be collected in conjunction with garbage or collected separately and composted to make Orna-Gro. There is no limit to the amount of properly prepared yard waste that will be collected.

To visit the Orna-Gro website, click here.

Yes!
- Grass clippings and leaves.
- Garden waste such as fallen apples, pruned or excess vegetables and fruit.
- Trash cans up to 32 gallons and weighing up to 45 pounds, marked with a YW on both sides.
- Special yard waste paper bags weighing up to 40 pounds.
- Bundles of branches and brush, tied with string or twine. Bundles may weigh up to 25 pounds.
- Branches may be up to 3 inches in diameter and a foot in length.
- Uncollected amount of properly prepared, marked cans, paper bags or brush bundles.
- Christmas trees when properly prepared, otherwise tree Christmas trees to a Christmas tree drop-off site. For more information about Christmas tree drop-off sites, click here.

No!
- Plastic bags used in yard waste collection.
- Mixtures of yard waste and garbage.
- No saw dust, lumber or treated lumber.
- Litter, trash or garbage.
- Whole cans of dirt or soil.
- Snow or garbage sand, litter, or rocks.
- Cardboard boxes of yard waste.
- Pet manure or kitty litter.
- Branches over 2 inches in diameter.
- Branches over 4 feet long.
- Plastic, wire, nylon or wire on brush.
- Rope of any kind.
- Unbundled brush.
- Christmas trees that have not been prepared for collection.

Remember:
- Place all materials at your collection point by 6am.
- Leave a couple feet of space between recycling bin, garbage containers and yard waste containers.

Collection Missed?
Call 402-444-5238 after 7am on your collection day.

Some of Omaha’s public outreach; web page on proper disposal practices for yard waste.
Nebraska Revised Statute § 13-2039 prohibits yard waste (YW) from entering landfills from December 1st through March 31st; but YW may be accepted in a landfill year-round if
(a) the YW is to be used for methane production and recovery,
and
(b) the landfill is equipped with a NDEQ permitted landfill gas capture collection system (“GCCS”)
Pheasant Point, Butler County and Bluff Road landfills all operate a NDEQ approved GCCS, thus allowing YW year-round.

City of Omaha’s public outreach website, Wasteline.org, does not promote best option of leaving YW on one’s lawn. But, OmaGro does encourage it.

Wasteline also does not inform YW is going to the landfill.
OmaGro - Most of its organic material inventory comes from residential YW within City of Omaha; Compost typically sold in bulk for $9.00/cubic yard; processing between 25,000 - 35,000 tons of organic materials annually. *(NOTE: quoted prices change.)*

Gretna Sanitation - Gretna Sanitation collects YW from its customers (most of which are in Sarpy County and parts of Douglas County and Cass County); partners with Soil Dynamics to compost area yard waste; Compost sold for $32.50/cubic yard; processing approximately 25,000 tons of organic materials annually.

Papillion Sanitation - The City of Bellevue and many individual customers in Papillion contract with Papillion Sanitation for YW collection. YW and trash are collected separately. But, only some of the YW is composted at Sarpy County Landfill site and used as a cover for landfill cells; the rest of YW is taken to Butler County Landfill which does not compost.

LinGro - LinGro uses Bluff Road and the 48th Street transfer station as its composting sites; collectors/haulers of YW are all charged a tipping fee of $15.75/ton to drop of YW at these sites; Compost typically sold for $10.00/cubic yard.
Chapter 5 - Yardwaste - Composting or Landfilling?

Left- Pheasant Point Landfill tipping fee sign.
Right- OPPD Elk Power Station right across 216th Street from Pheasant Point Landfill, where gas is collected from decomposing waste in landfill to generate energy.
1994 partial-ban on yard waste fueled OmaGro start up.

But, since 2016 Omaha has starved OmaGro of yard waste.

Instead leaving on the lawn, instead of composting, the City of Omaha has been landfilling yard waste.

Omaha’s goal is methane capture and energy generation. Pheasant Point Landfill sells methane to Omaha Public Power District (OPPD) to generate electricity. Powering up to 4,000 homes per year. *At what cost?*
Findings of SCS Engineers Study on Landfilling Yard Waste
The City of Omaha commissioned a $167,000 study from SCS Engineers to determine a modern approach for the City’s solid waste management systems.

- SCS asserts it would be both economically and environmentally preferable \((\text{really}?!?)\) to comingle yard waste with trash and landfill both to increase landfill methane gas production (energy).
- SCS asserts addition of year-round YW into landfill estimated to decrease landfill life 5 years (from 122 year life to 117 year life).
- SCS estimates co-mingling YW year round and dumping at Pheasant Point Landfill will save $8.35 million per year compared to separate collection of YW and transferring to OmaGro.
- Currently, Omaha budgets $20 million annually for solid waste management.
- SCS asserts Omaha landfilling YW will result in an increase in GHG emissions and a decrease in CO2 (due to carbon sequestered in landfill that would otherwise return to atmosphere when composted). (Flaws?)
Well drilling unit at Bluff Road Landfill in Lincoln, NE. The landfill has 54 wells that capture landfill gas (i.e., methane) to be sold to Lincoln Electric System.
SCS asserts most significant cost for composting is the cost of collection and transportation. *(True, if ignore externalities.)*

City of Lincoln operates LinGro, composting approximately 21,000 tons of organic materials annually.

Gene Hanlon with City of Lincoln Recycling office states that **LinGro breaks even financially.**

Lincoln has no plans to discontinue LinGro, even though Bluff Road Landfill operates a methane capture system.

Lincoln Parks and Recreation is one of LinGro’s biggest customers. LinGro is used for gardens and public areas around the City.

Steve Nosal with Lincoln Parks and Recreation says the **number one benefit of LinGro is the cost savings of space in a landfill.** Cities spend millions of dollars on new landfills.
Diagram mapping the process of a typical methane capture system. Hydrolysis occurs with waste wet down to increase rate of decomposition in landfills. Normal “dry tomb” approaches rely on simple anaerobic digestion.
Conversion technologies transform organic waste (post-recyclable solid waste) into energy.

Nationwide, Waste Management (WM) creates enough landfill gas to power 400,000 homes annually.

To capture methane, an underground network of pipes and wells are drilled into landfill waste masses where anaerobic decomposition is taking place. Landfill gases are collected, transported to facility for filtering, pressurizing, and cooling. Then used in an engine or turbine to generate electricity.
The next two slides are critical.

Each has a graph.

On the first slide, focus on the areas below each line. Upper line is the problem, lower line is one solution. What’s missing?

On the second slide, focus on the shaded areas. Especially note the two areas of **methane not captured**.
Chapter 5 - Yardwaste - Composting or Landfilling?

LANDFILL GAS GENERATION AND RECOVERY PROJECTION
Bluff Road Landfill

![Graph showing landfill gas generation and recovery projection over time.](image)
Chapter 5 - Yardwaste - Composting or Landfilling?

Figure 2. Methane production and recovery over a landfill lifetime (Humer-Huber et al, 2008)
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On the prior two slides there were two graphs. The text below explains those two graphs.

Figure 1 above shows landfill gas produced and amount collected since the introduction of a methane gas capture system at the Bluff Road Landfill in Lincoln, NE. The landfill is expected to expire around 2035. Lincoln operates LinGro (similar to OmaGro) to compost municipal yard waste.

Figure 2, from U.S. Composting Council shows amounts of methane captured and not captured in a landfill with a methane gas recovery system.
Chapter 5 - Methane Capture vs. Composting

make compost not waste
Done right, composting produces zero methane.

Methane is produced in anaerobic environments, such as those created by landfills.
- Methane from landfill, legally, is classified a renewable energy.
- Methane always is produced by landfills.
  Yard waste increases the methane produced in a landfill.

Omaha Public Power District (OPPD) plans to substantially increase its renewables portfolio.
- Closing Fort Calhoun Nuclear Station increased OPPD’s need.
- OPPD will increase electricity production via natural gas, and decrease electricity production via coal by 2018.
Chapter 6 - Curbside Collection of Recyclables

LOTS OF ROOM FOR IMPROVEMENT

In a 2010 state study of residential garbage dumped in the landfill serving Douglas County, almost 41 percent was readily recyclable. Statewide, the average was 42 percent.

59.2%
Other solid waste

40.8%
Readily recyclable*

Source:
Nebraska Department of Environmental Quality
Nebraska’s last effort to encourage recycling was in 1992. Nebraska is recycling at a rate of approximately 17.04% (2015). Firstar Fiber CEO Dale Gubbels says it is much lower: around 10-11%.

$34 million a year is spent on landfill fees to dispose of readily recyclable materials that would be worth $84 million on the market.

Just over half of Omaha residents use the green recycling bins: even though recycling is free (or, because disposal appears costless?).

RecycleBank program in Bellevue and Papillion allows for residents to receive points and prizes as an incentive to recycle.
Chapter 7 - Recycling Drop Off Facilities

A map of Recycling drop of facilities around Omaha

River City Recycling Recycling drop off facility and transfer station. Glass and commingled recyclables can be dropped off here.
Firstar Fiber is Omaha’s main recycling sorting and processing facility.

All residential commingled recyclables (no glass) collected in Omaha are sent to Firstar Fiber.

Sorted materials are sold for reuse; deliveries around USA and internationally.

Firstar Fiber pays Omaha for the recyclables if recyclables sellable for $110 per ton, on average.
Data for Omaha's FirstStar Fiber Recyclable Processing Facility - December of 2016. Since materials are commingled, all materials cost $60 - $70 per ton to process. Amount they are sold for can be seen on the right.

- Newspaper: Sent to Norfolk NE/Washington State for $100/ton
- Mixed Paper: Sent to Illinois/Iowa/China for $80/ton
- Cardboard: Sent to Iowa/China/Mexico for $100/ton
- Clear HDPE: Sent to Domestic Firms in the US/Kearney NE for $550/ton
- Pigmented HDPE: Sent to Iowa/Illinois/Ohio for $350/ton
- 3-7 Plastics: No current outlet; $35/ton
- PET Plastics: Sent to Ohio for $180/ton
Few public awareness organizations, in NE, operate using government funding.

- **Wasteline.org** is run by the Omaha Public Works Department. It updates residents on garbage/recycling pick-up issues: website and sends out newsletters.

- **Keep Nebraska Beautiful (KNB) and Keep Omaha Beautiful (KOB) are nonprofit organizations; but, both receive funding from the public and private donors. KOB and KNB are committed community beautification and public outreach programs.**

- **WasteCap**
  a non-profit that is dedicated to eliminating waste throughout Nebraska through innovation, education, and policy change.
Chapter 10 - Household Hazardous Waste

- Under The Sink (UTS) is a program run by the City of Omaha to collect household hazardous waste (HHW).
- UTS is funded \( \frac{2}{3} \) by NDEQ grants and \( \frac{1}{3} \) by City of Omaha.
- UTS is a drop off center for paint, motor oil, aerosols, fertilizers, pesticides, cleaning products, fluorescent bulbs.
- The UTS facility has processed 11 million pounds of HHW since opening in 2005.

Nothing dropped off is landfilled. Motor oil is recycled, corrosive materials are neutralized, pesticides incinerated.
Bulky items are not permitted in City of Omaha’s trash pick up.

- Omaha residents, at a subsidized rate, are allowed to dispose of bulky items at River City Recycling.
- Keep Omaha Beautiful offers a Spring Cleanup. Omaha residents are able to get rid of bulky items.
- Habitat for Humanity Restore also accepts donations of bulky items.
- Premier Waste Solutions accepts bulky waste for a fee in the study area.
Electronic Waste (or “E-Waste”) has not yet been strongly taken into consideration in Douglas County and Sarpy County.

- MAPA’s Solid Waste Management Plan Update (2012) shows that Douglas and Sarpy County typically rely on independent recycling sources that accept E-Waste drop-off and participate in a commercial recovery program (Best Buy, Staples, Office Depot, Target).
Keep Omaha Beautiful (in conjunction with the City of Omaha) accepts E-Waste at their annual Spring Cleanup Event.

Goodwill accepts computers, printers, and monitors without charge regardless of age or condition. Goodwill’s trained staff will disassemble the items and sort the materials able to be recycled. Anything that is in working condition will be resold.

Goodwill has partnered with Dell Reconnect Computer Recycling Program, a program that has diverted 427 million pounds of E-Waste from landfills nationally.
Plastic bag bans are becoming more popular in cities and entire states (California).

We recommend correct pricing.

Some cities, (Washington DC, Portland Oregon, Portland Maine) have implemented a $0.05 charge per bag fee which has been extremely effective.

In D.C., businesses have reported plastic bag use has gone down 50-80%.

Revenues raised ought to be dedicated to education, outreach programs, or parks & recreation.
96-Gallon Recycling Carts: pilot program

- 2,500 Omaha households received two 96-gallon carts.
- One cart for normal recyclables one cart garbage.

- More recyclables collected with these 96-gallon carts in other cities like Raleigh NC.
Hefty has chosen Omaha to run a **pilot program** on **Hefty Energy Bags**.

Residents can put candy, snack, and frozen food wrappers in these bags that would **otherwise be thrown away**.

These bags are **converted to energy** to create cement. These bags burn more efficiently than coal.
As the Sarpy County landfill has reached capacity, Bellevue has proposed a Pay As You Throw program.

Under the proposed programs, Residents receive 96-gallon carts for trash, recycling, and yard waste. If a household produces more than these containers can hold, then household is charged extra.
Omaha Biofuels Co-op

- Founded in 2008, Omaha BioFuels works to produce, use and promote biofuels to reduce consumption of fossil fuels.
- Collects and processes waste used cooking oil from local restaurants into biofuel.
- Also provide research, education and community outreach for sustainable developing biofuels.
Green Omaha Coalition

- Dedicated to educating the public on purposeful environmental issues
- Collaborates with dozens of local environmental entities to promote local “green events”, news, and opportunities.
- Led by President and Omaha-native Tom Baker (also CEO of a large marketing company - Lighthouse 5).
Josyln Institute for Sustainable Communities

- Developed in 1996, focuses on the “built” environment to promote sustainable development (from environmentally friendly construction of buildings to comprehensive plans for cities and regions).

- Current initiative: The Flatwater Metroplex
  - Refers to a region roughly defined by 60-mile zones encircling Omaha/Council Bluffs and Lincoln.
  - About 1.2 million people live in the Metroplex: projected to double in 40 years
  - Funded through Nebraska Environmental Trust, the Institute and partners launched two three-year initiatives to engage public, private, rural and urban stakeholders in a regional dialogue to help shape the environmental future of the Flatwater Metroplex.
Omaha Permaculture

- Founded in 2015 by Gus Von Roenn. Aims to foster unused or blighted property & educates the public to leave yard waste on their lawn.
- Creates healthy ecosystems through urban agriculture related economic development.
- Reduces mowing maintenance/dumping, absorbs more storm water, provides edible landscapes for people and wildlife, replants forests and builds park benches.
- NOTE: Von Roenn’s biz partner made the Emerald Ash Borer discovery.
weCompost

- weCompost is an urban compost pickup service that allows residences and small businesses in Omaha to recycle organic and compostable materials at their home or work.
- For $12/month, they collect one five gallon bucket of food waste, and collect all glass materials.
- Additional five-gallon buckets cost $5/month.
- They use the food waste to make vermicompost - and they offer a compost rebate to their customers where they deliver compost to your door.
P2RIC

- Reduce, reuse, recycle business advice is provided by the Pollution Prevention Regional Information Center.
- P2RIC connects organizations that provide waste reduction services and expertise to business and industry. The main goal of P2RIC is to promote the sharing of resources and knowledge among businesses and agencies that use pollution prevention or P2 strategies within Iowa, Kansas, Missouri and Nebraska (EPA Region 7).
- [www.p2ric.org](http://www.p2ric.org)
Green Bellevue

- Green Bellevue is a community effort that depends on volunteers.
- Helps individuals and groups undertake programs to enhance Sarpy County neighborhoods, preserve natural resources and foster stewardship of the local environment.
- Provide very useful environmental news feed.
- Puts on the annual Sarpy County Earth Day.
- President Don Preister: since 2010.
Sources for Pictures

- [http://www.wasteline.org/](http://www.wasteline.org/)
- [http://www.knb.org/](http://www.knb.org/)
- [http://www.habitat-nola.org/restore/](http://www.habitat-nola.org/restore/)
- Other Photos taken by Gabbie Sefranek and Tabitha Panas.