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...helping communities protect themselves from polluting energy and waste technologies

Trash Incineration



www.EnergyJustice.net/incineration/

National Map



Energy Justice Network

Map BETA

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State Map

Address:

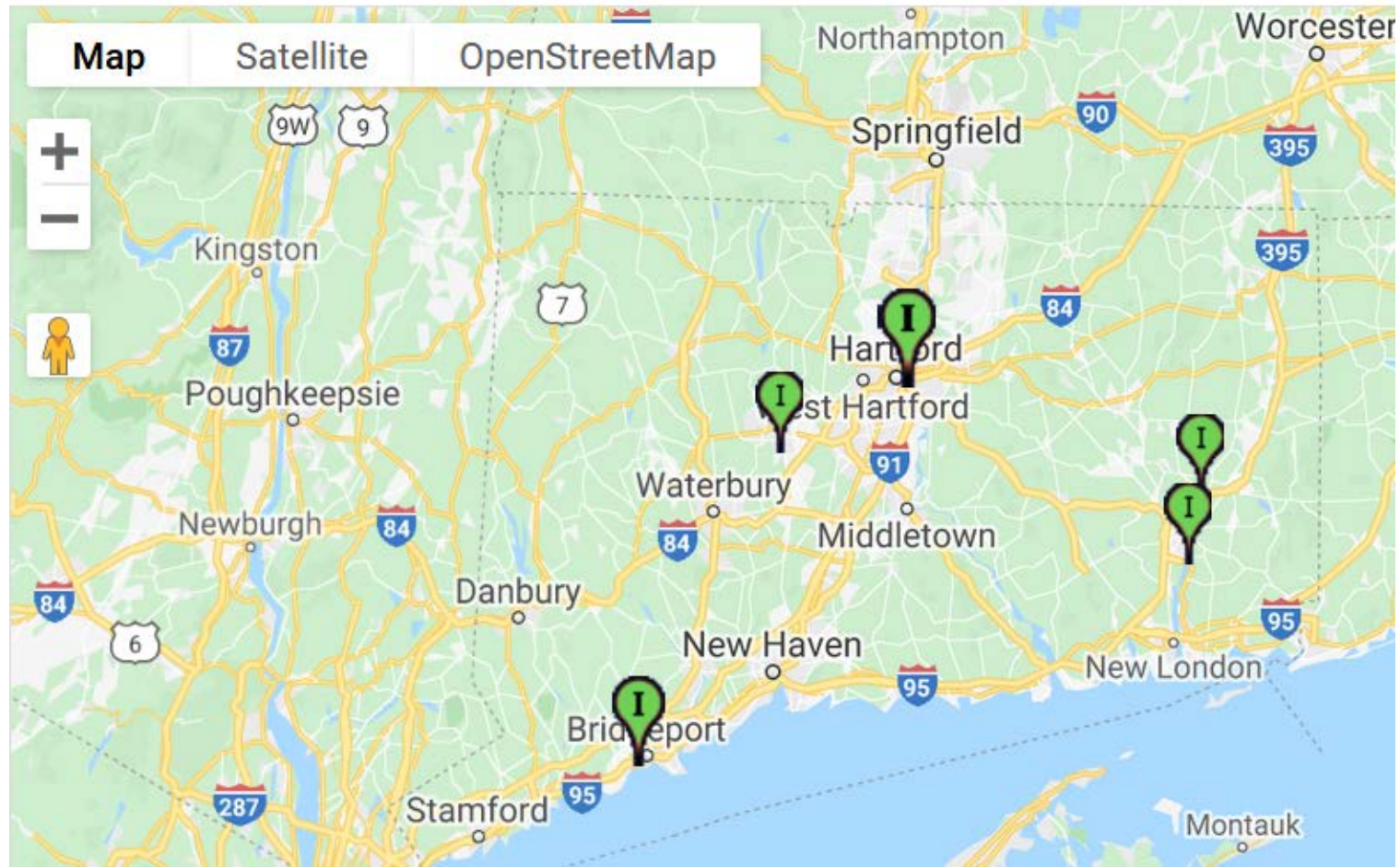
[Save Map](#)

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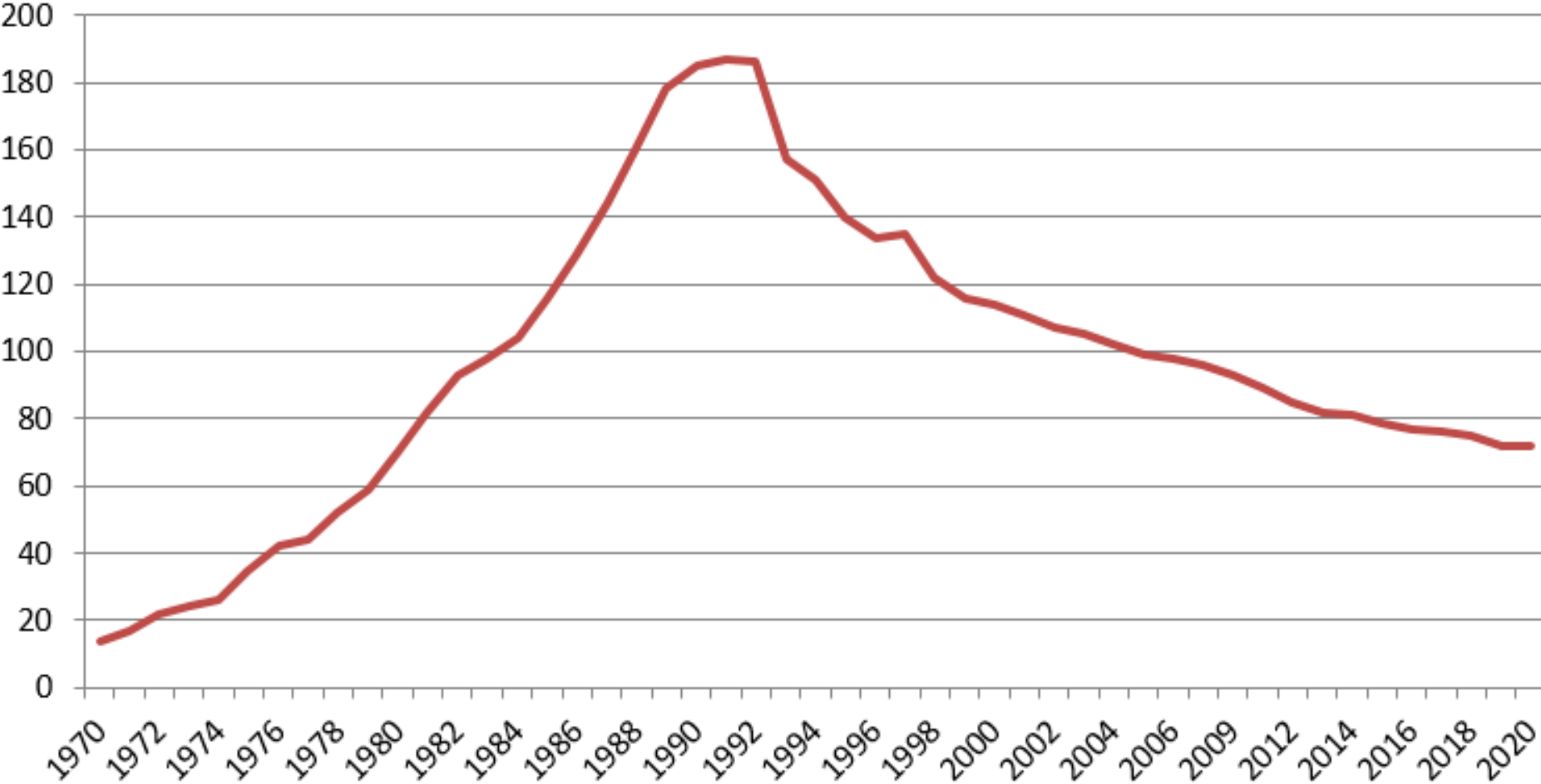
[Advanced Mode](#)

Layers: [American Indian](#) | [Asian](#) | [Black](#) | [Hispanic](#) | [Multi-Racial](#) | [Nonwhite](#) | [White](#) | [Plurality](#)

[Income](#)



Number of Commercial Operating Trash Incinerators in the U.S.



CRRA Connecticut Solid Waste Operations

CRRA Connecticut Solid Waste System



- ☞ Trash-to-energy plant, recyclables processing facility and CRRA Trash Museum in Hartford
- ☞ Transfer stations in Essex, Ellington, Torrington and Watertown
- ☞ Durham, Litchfield, Manchester, Middlefield, Naugatuck, Salisbury, Sharon, Simsbury and South Windsor deliver trash but not recyclables. Residents may participate in CRRA electronics-recycling and paper-shredding events.

CRRA Southwest Division

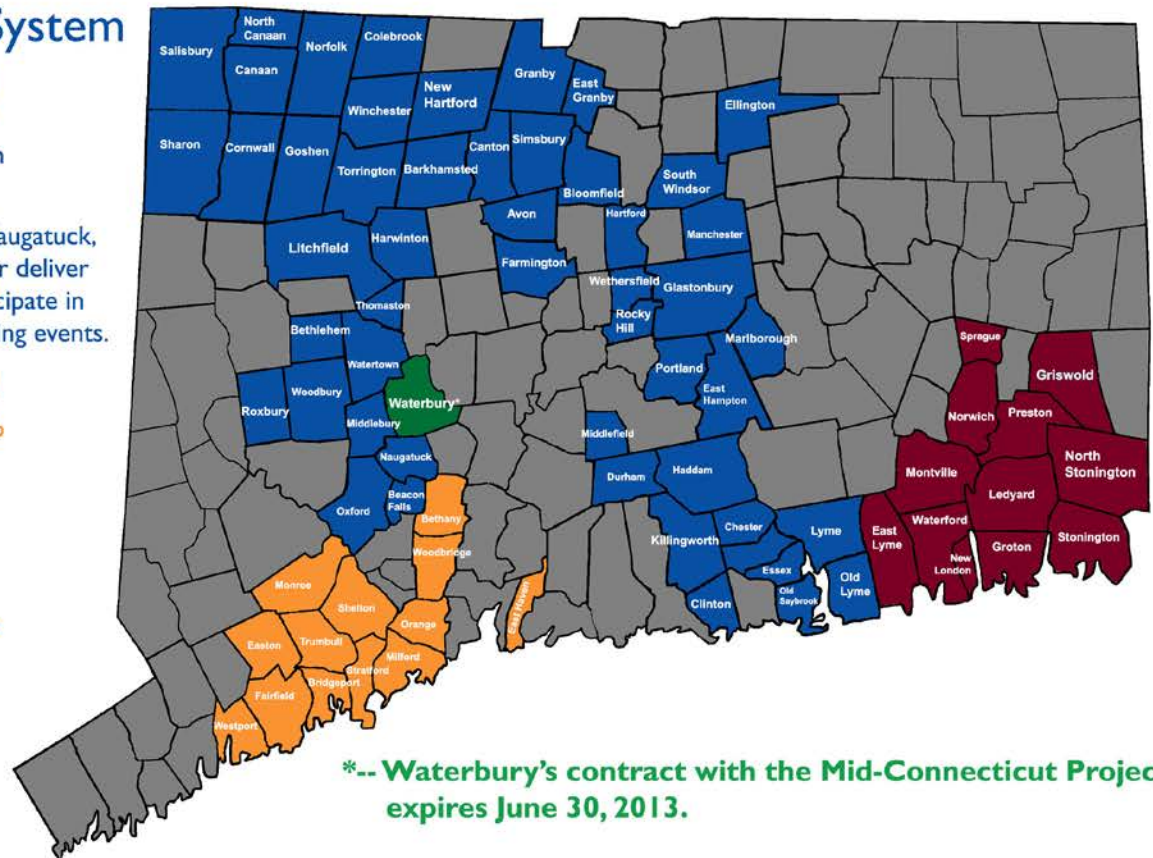


- ☞ CRRA contracts for towns to deliver trash to Bridgeport trash-to-energy plant
- ☞ Recyclables delivered to transloading facility in Stratford and shipped to CRRA Hartford recycling processing center
- ☞ East Haven delivers recyclables but not trash; Bethany, Shelton and Trumbull deliver trash but not recyclables

CRRA Southeast Project



- ☞ Trash-to-energy plant in Preston



***-- Waterbury's contract with the Mid-Connecticut Project expires June 30, 2013.**



Substitute Senate Bill No. 357

Public Act No. 14-94

AN ACT CONCERNING CONNECTICUT'S RECYCLING AND MATERIALS MANAGEMENT STRATEGY, THE UNDERGROUND DAMAGE PREVENTION PROGRAM AND REVISIONS TO ENERGY AND ENVIRONMENTAL STATUTES.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. (NEW) (*Effective from passage*) (a) There is established the Materials Innovation and Recycling Authority. The Materials Innovation and Recycling Authority shall constitute a successor authority to the Connecticut Resources Recovery Authority in accordance with the provisions of sections 4-38d, 4-38e and 4-39 of the general statutes.

The three proposals were...

- 1. Mustang Renewable Power Ventures:** would have some recyclables removed from the trash, and the rest would be baled, shipped to be burned in LafargeHolcim's large and very polluting cement kiln in Ravena, NY
- 2. Covanta:** would close the incinerator in Hartford, and ship waste to Covanta's incinerators in Bristol and Preston, CT. It would require a 4-fold expansion of their incinerator in Bristol, making the Bristol incinerator the second largest air polluter in Hartford County and one of the largest incinerators in the U.S.
- 3. Sacyr Rooney:** to keep the incinerator in Hartford operating, where it would remain the second largest air polluter in Hartford County, even with their proposed emissions reductions.

Incinerator Life Spans

- Average lifespan of the 44 trash incinerators that have closed from 2000 through 2020 was just **23 years**.
- Few trash incinerators operate beyond a 30-year life time.
- Only one made it past 40 without being completely rebuilt, and is having serious problems.
 - Rebuilding the Harrisburg, PA incinerator bankrupted the city.



Moving from Incineration to Zero Waste

- Zero Waste Resolutions
- Waste Contracts
- Clean Air Ordinances
- State Policy

Beating back false solutions

- Gasification, pyrolysis, plasma arc
- Waste-to-fuels (WTF?)
- Mixed waste processing, processed engineered fuel
- Anaerobic digestion

World's largest waste corporation driving away from incineration



THE WALL STREET JOURNAL

Jan 3, 2014: “Big Waste Hauler Rethinks Startups”

[pulls out of gasification, pyrolysis, plasma and trash-to-ethanol investments, selling off Agilyx, Enerkem, Fulcrum, Genomatica & InEnTec]

Jul 29, 2014: “Waste Management to Sell Wheelabrator for \$1.94 Billion”

[pulls out of long-standing ownership of Wheelabrator, the second-largest operator of conventional incinerators in U.S.]

EPA: “Non-Hazardous Secondary Materials” rule Waste is now “Fuel”

[Refuse-derived fuel (RDF) or “SpecFuel” or “Processed Engineered Fuel”]



Emerging Threats

- **Refuse-derived fuel (RDF)**
(fuel pellets to burn in coal plants, cement kilns and other boilers)
 - Processed Engineered Fuel
 - SpecFuel
- **Waste to fuels**
 - Trash to ethanol, methanol, jet fuel, naphtha, asphalt...
- **Two-stage incinerators**
 - Pyrolysis
 - Gasification
 - Plasma Arc
- **Anaerobic digestion**
 - Digestated trash marketed as burnable fuel, or as fertilizer or soil amendment; ok if just to pre-process before landfill

Technologies and Risk

Source: Gershman, Brickner & Bratton, Inc. August 2012

Alternative	Risks/Liability	Risk Summary
Mass Burn/WaterWall	Proven commercial technology	Very Low
Mass Burn/Modular	Proven commercial technology	Low
RDF/ Dedicated Boiler	Proven commercial technology	Low
RDF/Fluid Bed	Proven technology; limited U.S. commercial experience	Moderate to Low
Anaerobic Digestion	Proven technology; limited U.S. commercial experience	Moderate to Low
Mixed-Waste Composting	Previous large failures; No large-scale commercially viable plants in operation; subject to scale-up issues	Moderate to high
Pyrolysis	Previous failures at scale, uncertain commercial potential; no operating experience with large-scale operations	High
Gasification	Limited operating experience at only small scale; subject to scale-up issues	High
Chemical Decomposition/ Depolymerization	Technology under development; not a commercial option at this time	High

Experimental Types of Incinerators Don't Work

Gasification, plasma arc and pyrolysis:

- **Can't run continuously**
- **Can't be run effectively at commercial scale**
- **Can't process heterogenous feedstocks like trash**
- **Companies with no real history bamboozle local officials into subsidizing projects that fail, technically and financially**
- **The companies usually lie about their emissions, claiming zero emissions or “no smokestack”**

EPA says pyrolysis/gasification = incineration

40 CFR 60.51a:

- **Municipal waste combustor**, MWC, or municipal waste combustor unit: (1) **Means any setting or equipment that combusts solid, liquid, or gasified MSW including, but not limited to,** field-erected incinerators (with or without heat recovery), modular incinerators (starved-air or excess-air), boilers (i.e., steam-generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and **pyrolysis/combustion units**.
- **Pyrolysis/combustion unit** means **a unit that produces gases, liquids, or solids through the heating of MSW, and the gases, liquids, or solids produced are combusted and emissions vented to the atmosphere.**

“**A municipal waste incinerator** 'combusts' solid waste and thus **is functionally synonymous with municipal waste combustor.**”

(www.epa.gov/ttn/nsr/gen/rm_2.html)

Pyrolysis is a failed technology

Patent review company:

- **has been seeing pyrolysis projects for 14 years**
- **none of them are legitimate**
- **they're just splitting combustion into two steps, making it more expensive, less efficient and not any cleaner**
- **sees a steady stream of guys in their 50s-70s who worked at corporations, thought it's a great idea, and go out and promote it and get money by whatever means and get some patent coverage mainly to help get the money, but none are legit**

Pyrolysis is a failed technology

- **Not intended for continuous operation**
 - **Runs batch processes**
 - **Mainly used at demonstration scale**
- **Can only operate on homogenous fuels**

Environmental Protection Agency:

- **While technically feasible, tire pyrolysis – a process in which tires are subjected to heat in an oxygen-starved environment and converted to gas, oil and carbon char – has been inhibited by the high capital investment required and steep operating costs**

Landfilling vs. Incineration



Landfilling vs. Incineration



...and Ash Landfilling

Incineration Worse than Landfills

- Incinerators still require landfills for their toxic ash
- Choice is NOT landfill vs. incinerator, but:

landfill

vs.

incinerator AND a smaller, more toxic landfill

OR...

Zero Waste and minimal landfilling

Landfilling vs. Incineration

Pollutant (all data in tons)	Incinerators	Landfills	Incinerators are __ times as polluting
<u>Greenhouse Gases (CO₂e)</u>	482,770	268,763	<u>1.8</u>
<u>Health Damaging Pollution</u>	1,975	1,236	<u>1.6</u>
Carbon Monoxide (CO)	119	22	5
Hydrochloric Acid (HCl)	17	1	21
Nitrogen Oxides (NO _x)	625	6	105
Particulate Matter (Condensable)	25	1	17
Particulate Matter (PM10)	26	17	1.6
Fine Particulate Matter (PM2.5)	17	4	5
Sulfur Oxides (SO _x)	55	3	19
Total Suspended Particulate	2,178	2,486	0.88
Volatile Organic Compounds	3	9	0.34

Source: PA Dept of Environmental Protection [Air Emissions Report](#), 2017 data for southeast & southcentral region facilities

How to Compare?

- **Human health impacts**
 - Nitrogen Oxide emissions (asthma)
 - Particulate emissions
 - Toxic and Cancer-causing emissions
- **Eutrophication**
- **Acidification (acid rain...)**
- **Ecosystem toxicity**
- **Ozone depletion**
- **Smog formation**
- **Global warming**

Should also look at...

- **Cost**
- **Jobs**
- **Population impacted**
- **Environmental justice**



Life Cycle Analysis on DC Waste Options

Analysis done by:

Jeffrey Morris, Ph.D. (Economics)

Sound Resource Management Group

360-867-1033

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www.zerowaste.com

Dr. Morris authored several peer reviewed published studies on waste systems.

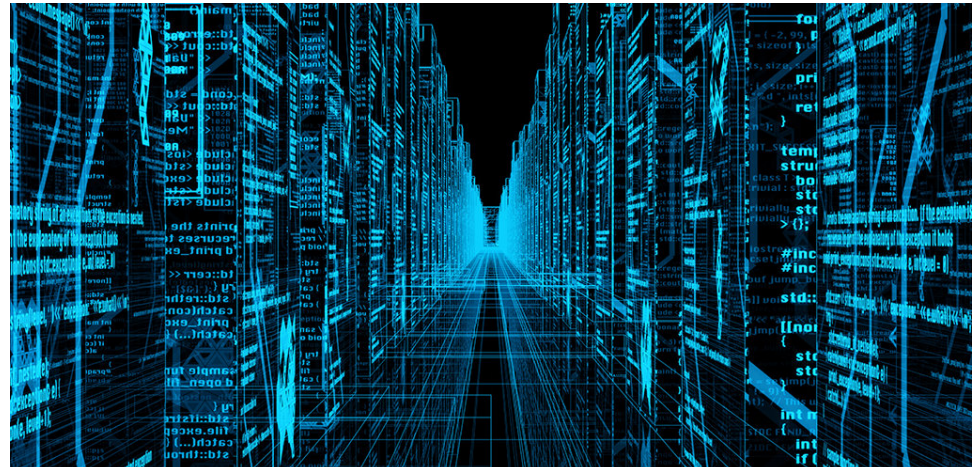
LCA Characteristics of WARM, MSW DST and MEBCalc

Features	LCA Model		
	WARM	MSW DST	MEBCalc
<u>Impacts included in model</u>			
-Climate change	✓	✓	✓
-Human health (respiratory)		limited	✓
-Human health (toxic chemicals)		limited	✓
-Human health (carcinogens)		limited	✓
-Eutrophication		limited	✓
-Acidification		limited	✓
-Eco-toxicity		limited	✓
-Ozone depletion			✓
-Smog formation		limited	✓
<u>Monetized Environmental Score</u>			✓
<u>Energy Impacts Included</u>	✓	✓	limited
<u># of MSW Materials Included</u>	54	~30	27

Additional Comparison of WARM & MSW DST: H. Scott Matthews (Carnegie Mellon University), Cynthia J. Manson (Industrial Economics, Inc.), *Comparative Analysis of EPA Life Cycle Models: Differences between MSW-DST and WARM in Examining Waste Management Options*, prepared for EPA Office of Resource Conservation and Recovery, Internal Review Draft-Do Not Distribute, 11-12-2009.

Data Sources

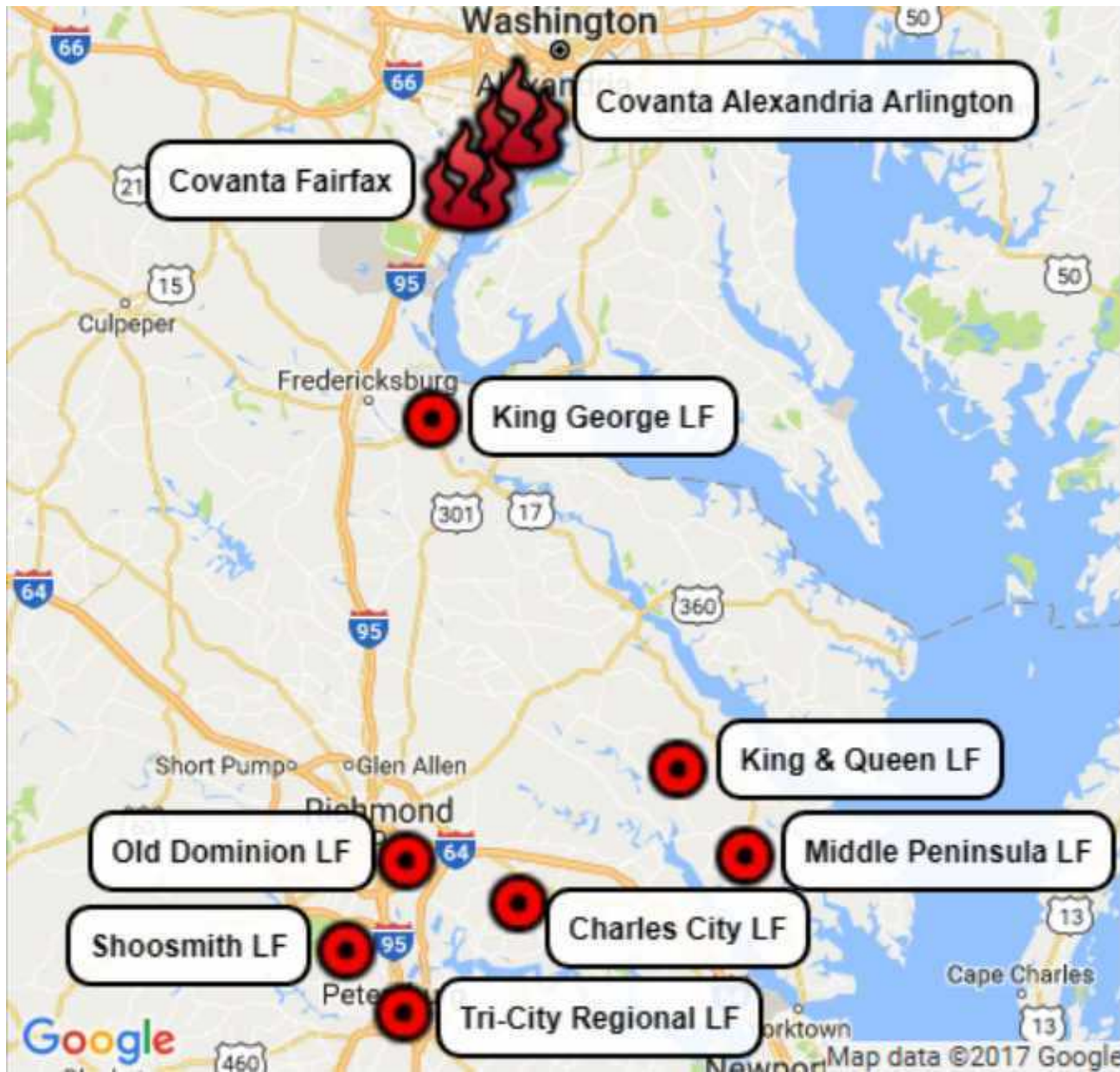
- **U.S. EPA**
 - National Emissions Inventory
 - Emissions & Generation Resource Integrated Database (eGRID)
 - FLIGHT (Greenhouse gas inventory)
 - Landfill Methane Outreach Program database
- **U.S. Energy Information Administration**
 - Form 860 database (Annual Electric Generator data)
 - Form 923 database (Annual Electric Utility Data)
- **Virginia Department of Environmental Quality**
- **DC Department of Public Works**
- **Energy Recovery Council**
- **Sound Resource Management Group**



Where DC's waste went (to VA) in 2016:

Covanta Fairfax	222,937	27%
Shoosmith Sanitary Landfill	221,415	27%
Middle Peninsula Landfill and Recycling Facility	190,323	23%
BFI Old Dominion Landfill	118,785	14%
Tri City Regional Disposal and Recycling Services	36,898	4%
King George Landfill & Recycling Center	20,002	2%
Covanta Alexandria Arlington	16,690	2%
King and Queen Sanitary Landfill	267	0%
Charles City County Landfill	18	0%
Total:	827,335	

Where DC's waste went (to VA) in 2016:



Facilities in Focus for 2017 & This Presentation

Facility Name	Type	Average Distance from DC Transfer Stations (mi)	Annual Precipitation (inches)	Years of Life Remaining
Covanta Fairfax	Incinerator	26		13 (if it lives to 40)
King George	Landfill	68	42.8	11
King & Queen	Landfill	122	45.4	26
Middle Peninsula	Landfill	130	45.4	73
Charles City	Landfill	130	46.3	74

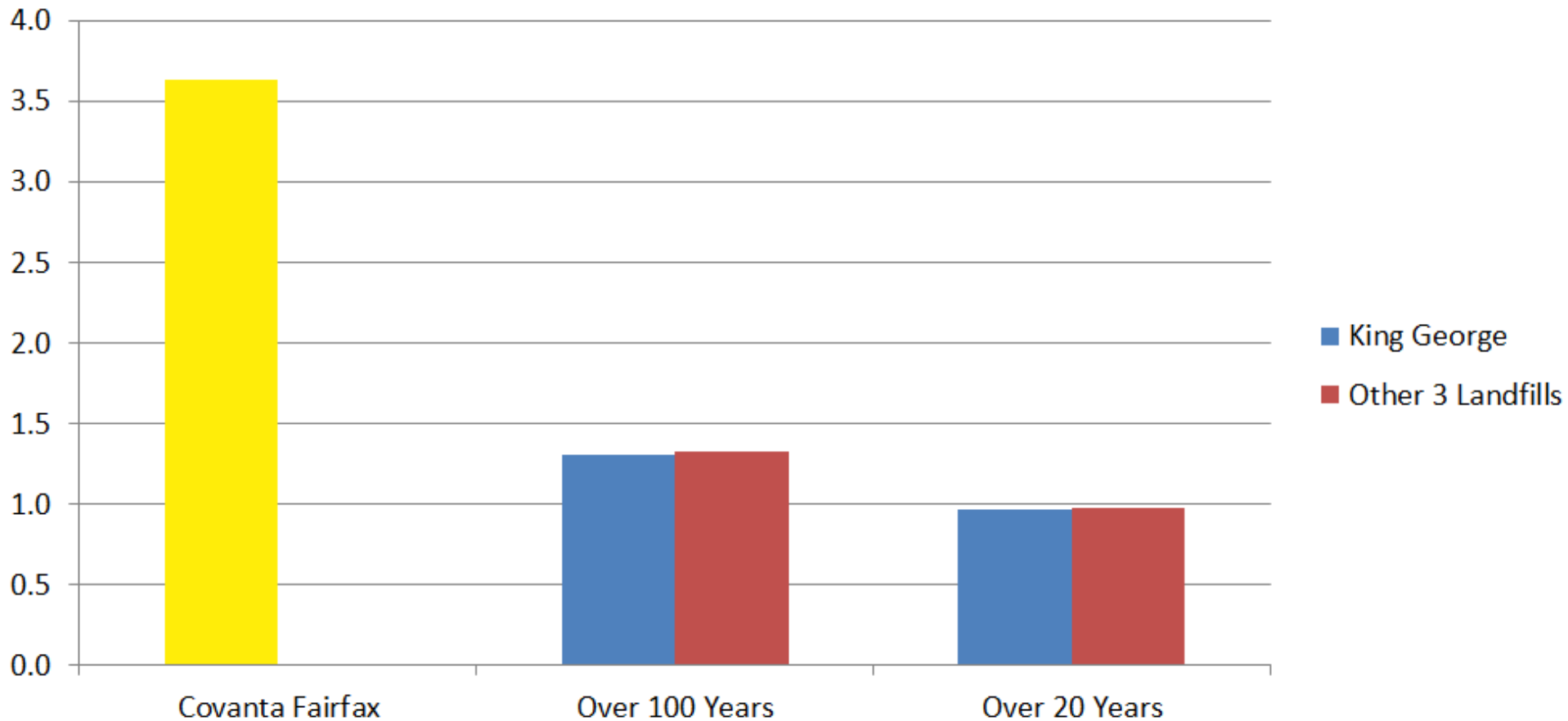
[“Other 3 Landfills” in future slides refers to the last three above, which are all about the same distance from DC.]

Covanta Fairfax Reported Emissions (2014)

Global Warming Pollutants	Pounds released (2014)
Carbon Dioxide (CO ₂)	2,169,540,876
Methane (CH ₄)	762,927
Nitrous Oxide (N ₂ O)	100,130
Health Damaging Pollutants	Pounds released (2014)
Carbon Monoxide	11,319
Hydrochloric Acid	57,408
Hydrofluoric Acid	1,385
Lead	68
Nitrogen Oxides (NO _x)	3,398,301
Particulate Matter (PM ₁₀)	14,709
Fine Particulate Matter (PM _{2.5})	8,862
Sulfur Dioxide	257,899
Volatile Organic Compounds	11,813

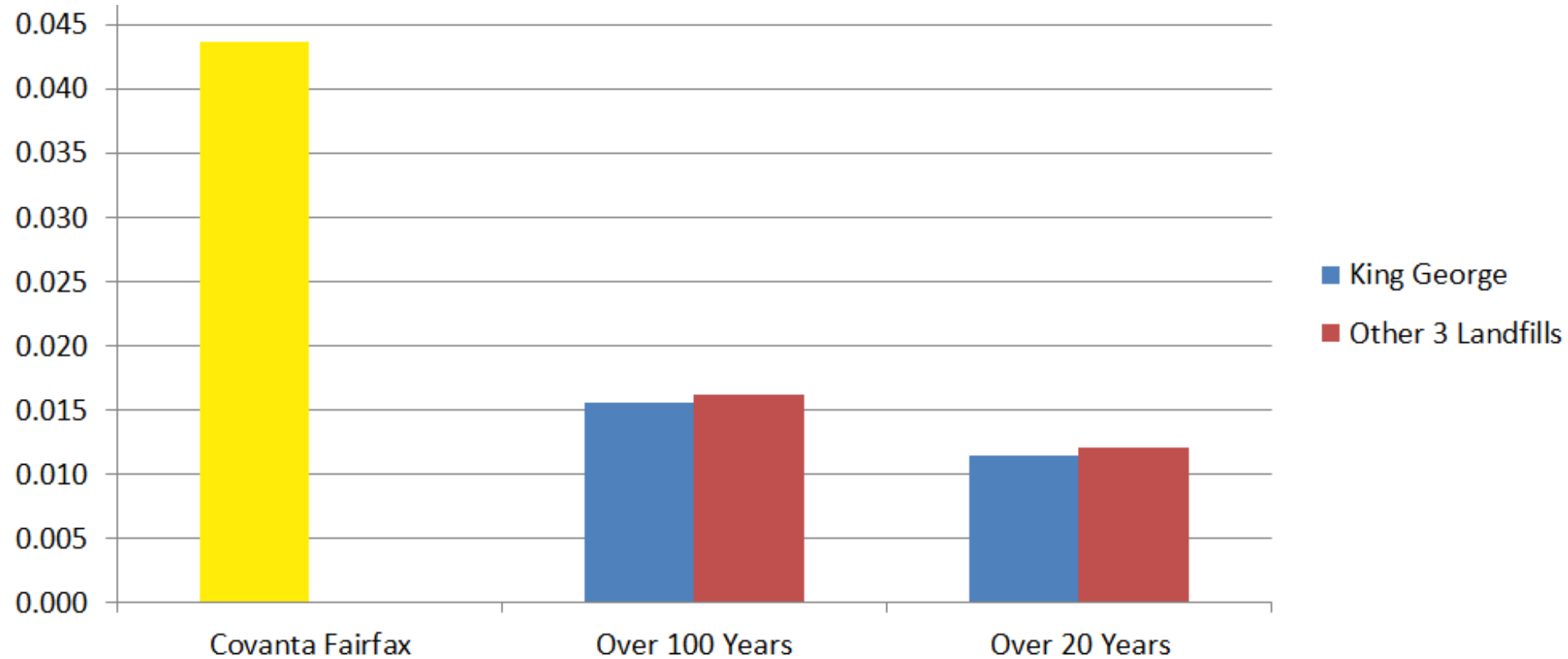
Nitrogen Oxide (NOx) Pollution

[Pounds of NOx per ton of waste disposed.]



Particulate Matter Pollution

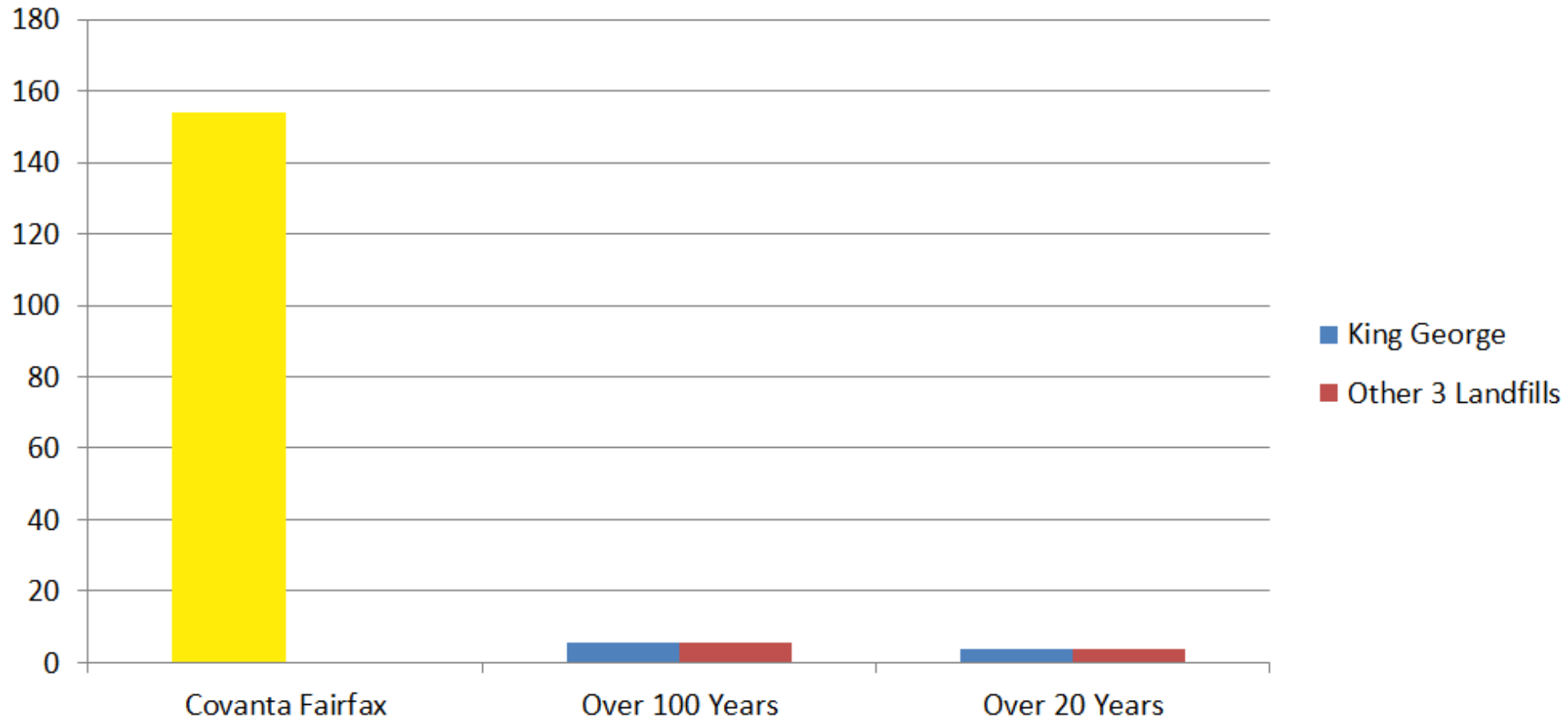
[Pounds of PM2.5 equivalent per ton of waste disposed.]



Toxic Pollution

[Pounds of toluene equivalent per ton of waste disposed.]

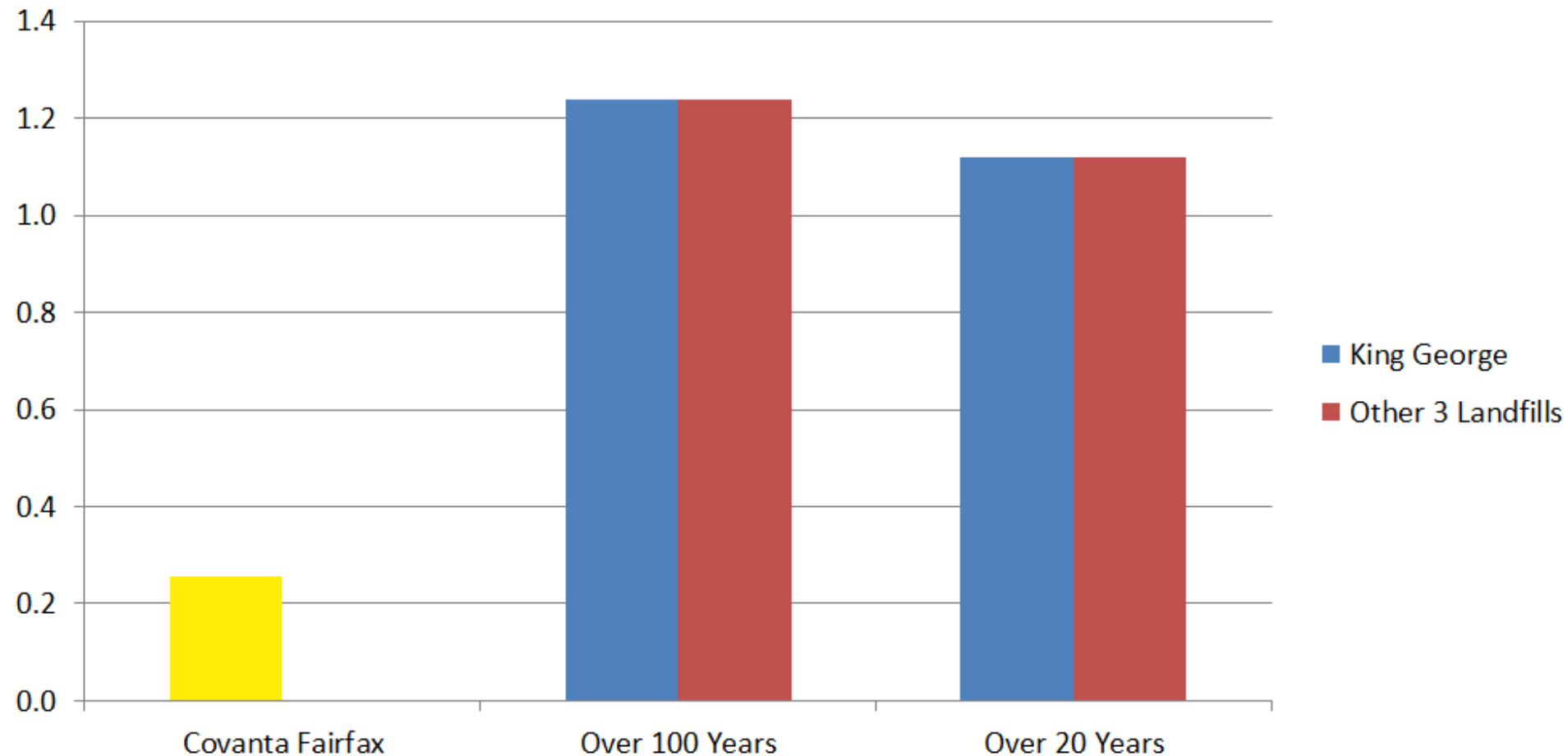
Does not include dioxin/furan emissions or ash leaching.



Carcinogenic Pollution

[Pounds of benzene equivalent per ton of waste disposed.]

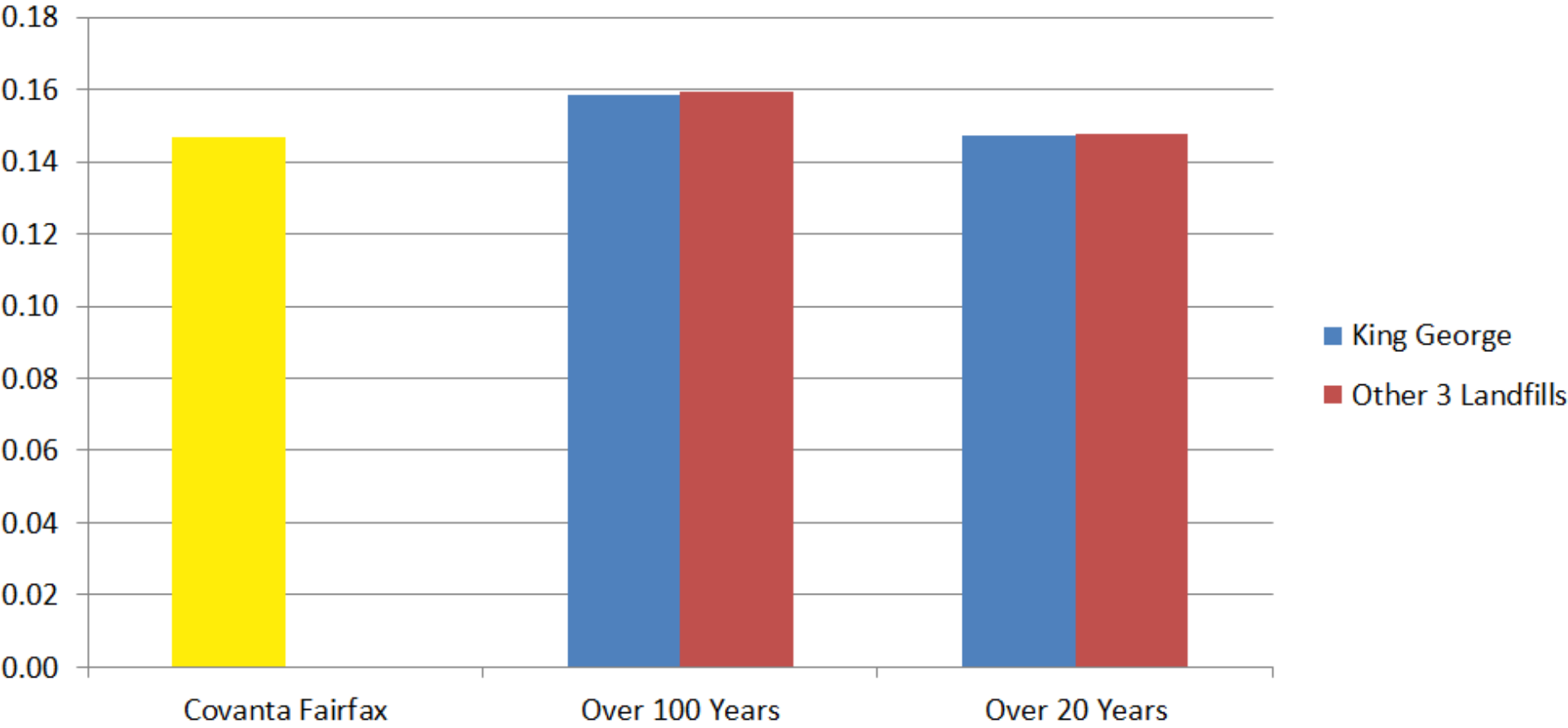
Does not include dioxin/furan emissions or ash leaching.



Eutrophication

[Pounds of nitrogen equivalent per ton of waste disposed.]

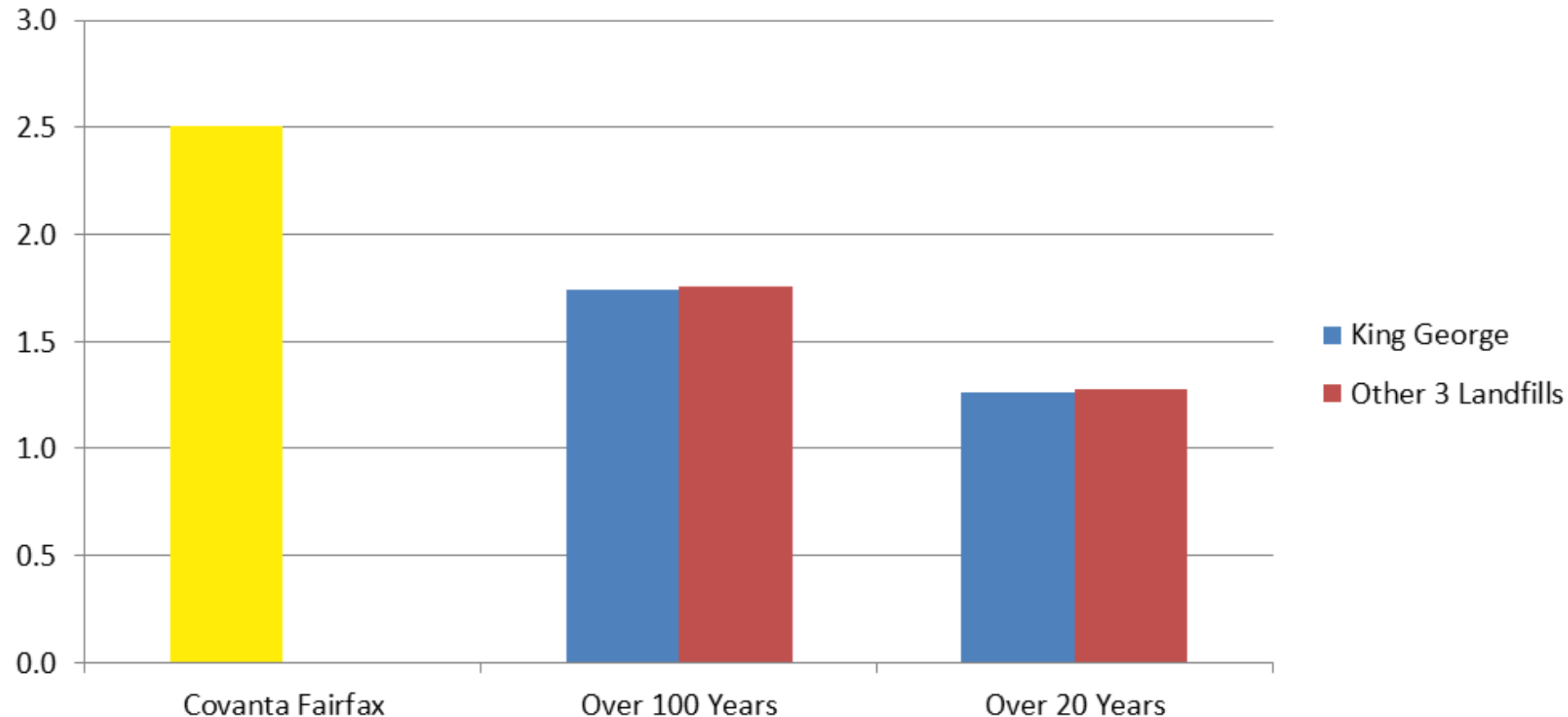
NOx and ammonia air emissions plus BOD, COD, phosphate, and ammonia water releases from landfills.



Acidification

[Pounds of SO₂ equivalent per ton of waste disposed.]

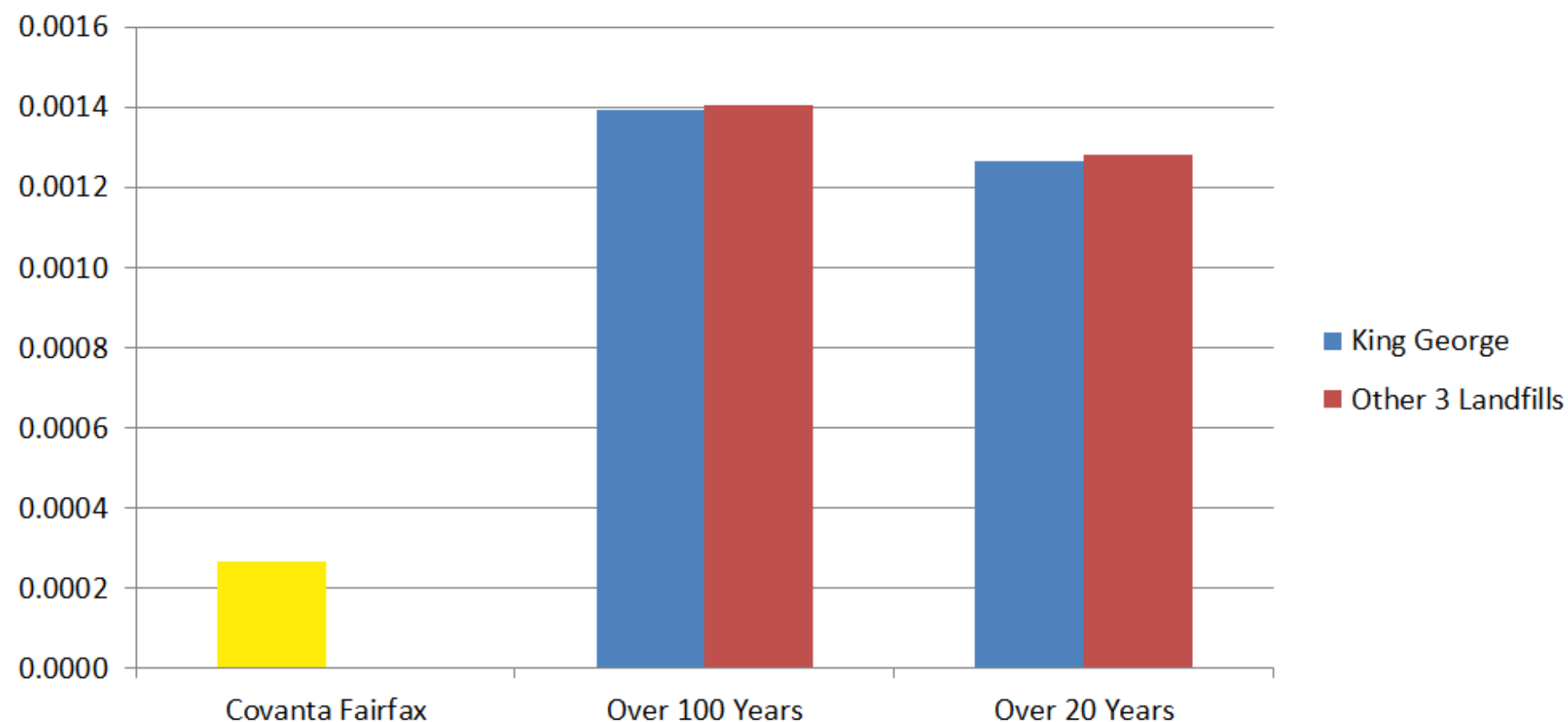
Incinerator emissions are largely from nitrogen oxides, but also include other acid gases (SO₂, HCl, HF). For the landfills, it's hydrogen sulfide (H₂S) from the landfill, plus ammonia, NO_x and SO_x from the landfill gas burners.



Ecosystems Toxicity

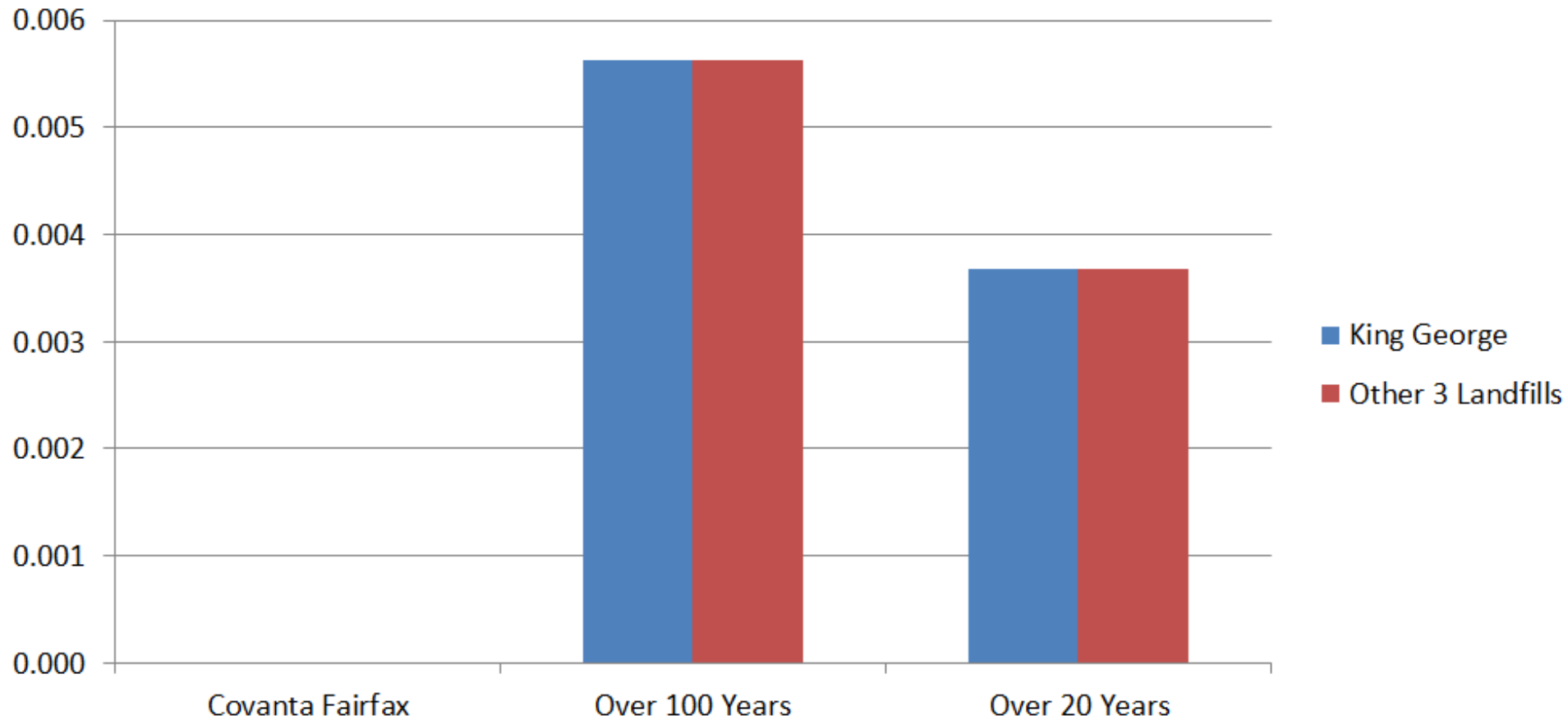
[Pounds of 2,4-D herbicide equivalent per ton of waste disposed.]

For the incinerator, this is mainly based on mercury emissions. For the landfill, mainly formaldehyde.



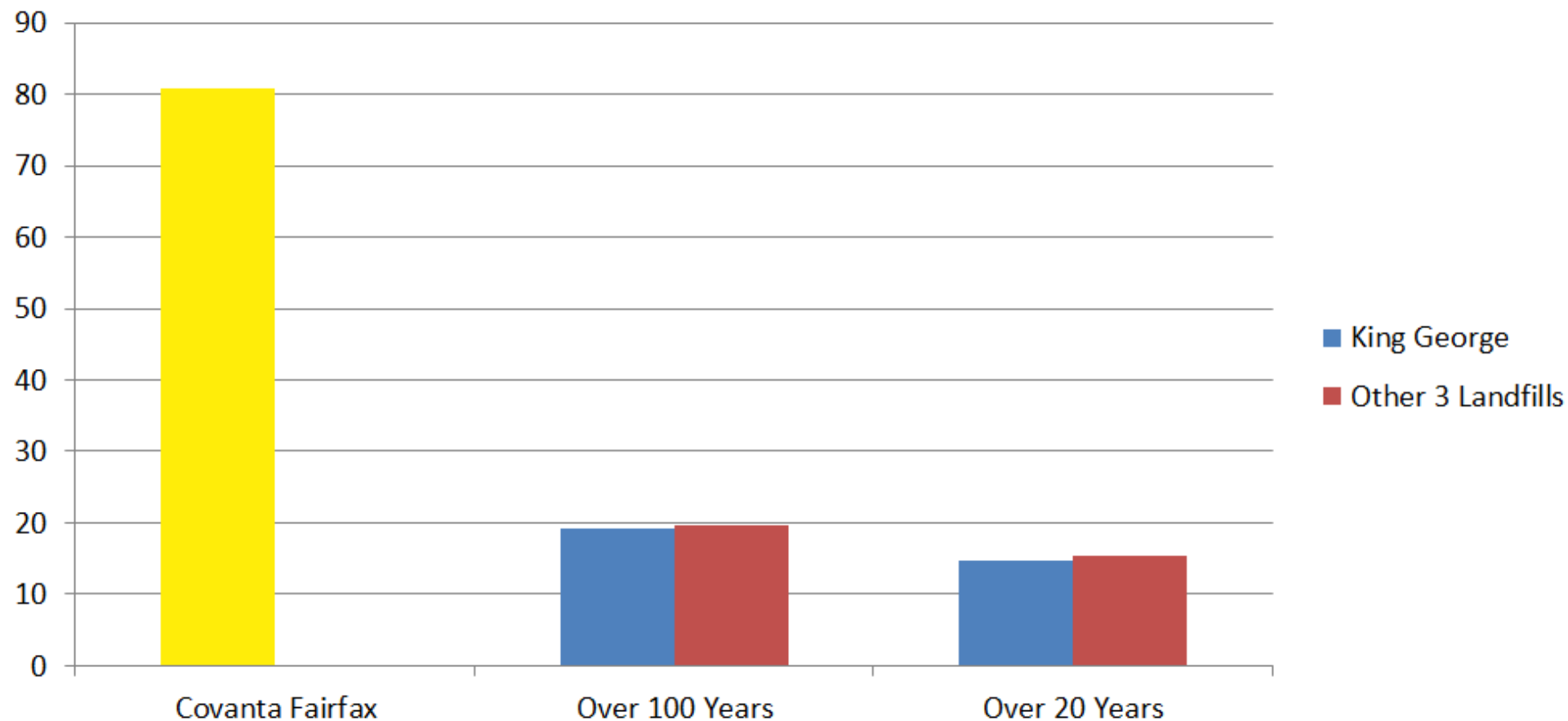
Ozone Depletion

[Pounds of CFC-11 equivalent per ton of waste disposed.]



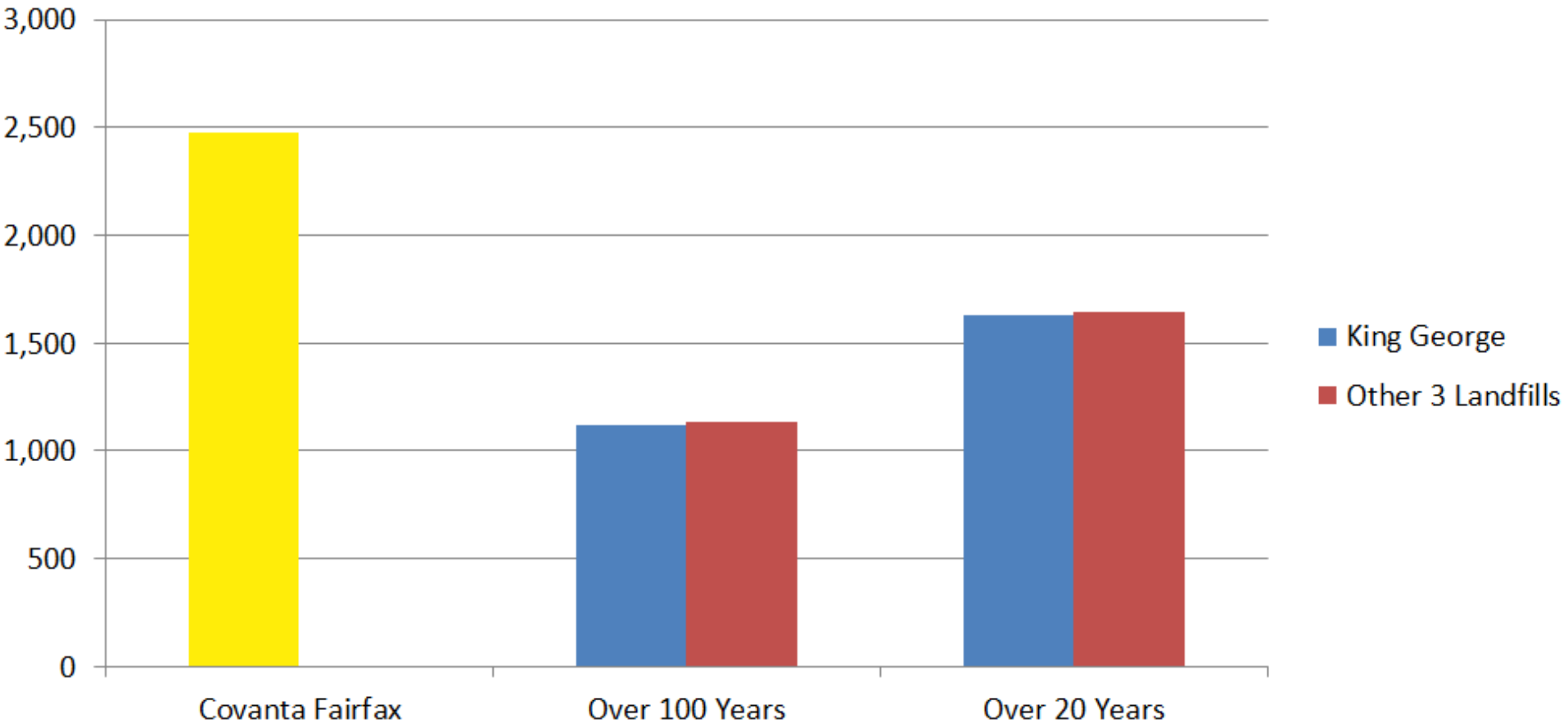
Smog Formation

[Pounds of ozone (O₃) equivalent per ton of waste disposed.]



Global Warming Pollution

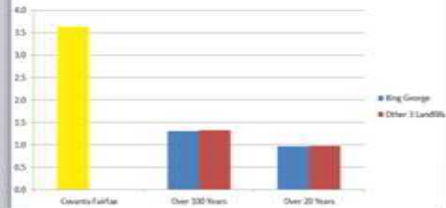
[Pounds of CO₂ equivalent per ton of waste disposed.]



Incineration worse than Landfills

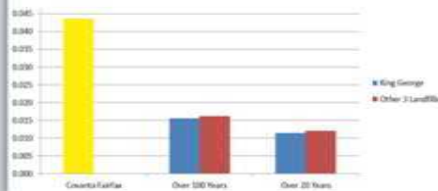
Nitrogen Oxide (NOx) Pollution

[Pounds of NOx per ton of waste disposed.]



Particulate Matter Pollution

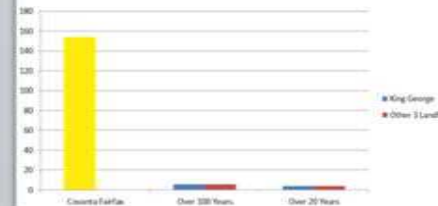
[Pounds of PM2.5 equivalent per ton of waste disposed.]



Toxic Pollution

[Pounds of toluene equivalents per ton of waste disposed.]

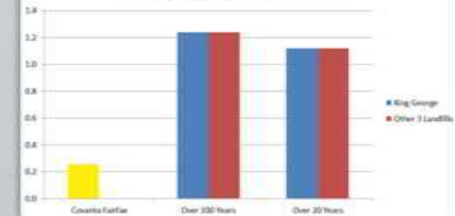
Does not include dioxin/furan emissions.



Carcinogenic Pollution

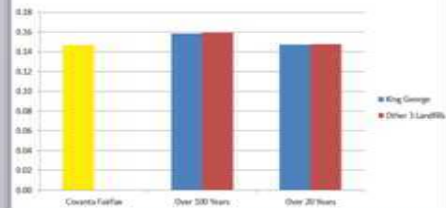
[Pounds of benzene equivalent per ton of waste disposed.]

Does not include dioxin/furan emissions.



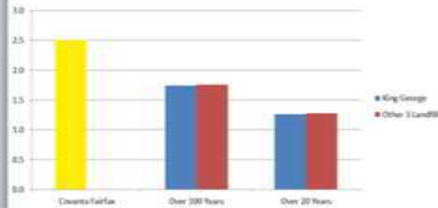
Eutrophication

[Pounds of nitrogen equivalent per ton of waste disposed.]



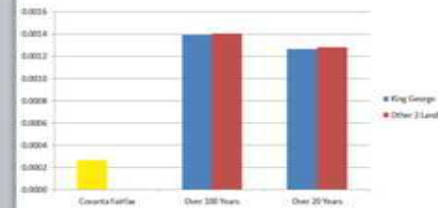
Acidification

[Pounds of SO2 equivalent per ton of waste disposed.]



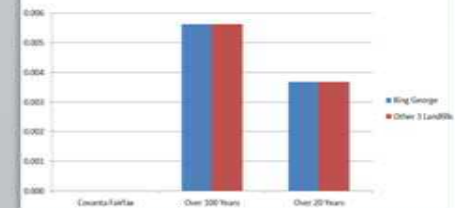
Ecosystems Toxicity

[Pounds of 2,4-D herbicide equivalents per ton of waste disposed.]



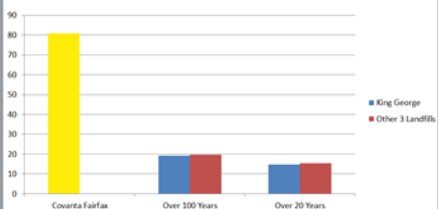
Ozone Depletion

[Pounds of CFC-11 equivalent per ton of waste disposed.]



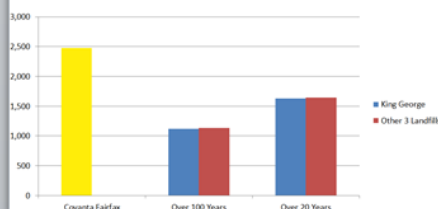
Smog Formation

[Pounds of ozone (O3) equivalent per ton of waste disposed.]



Global Warming Pollution

[Pounds of CO2 equivalent per ton of waste disposed.]

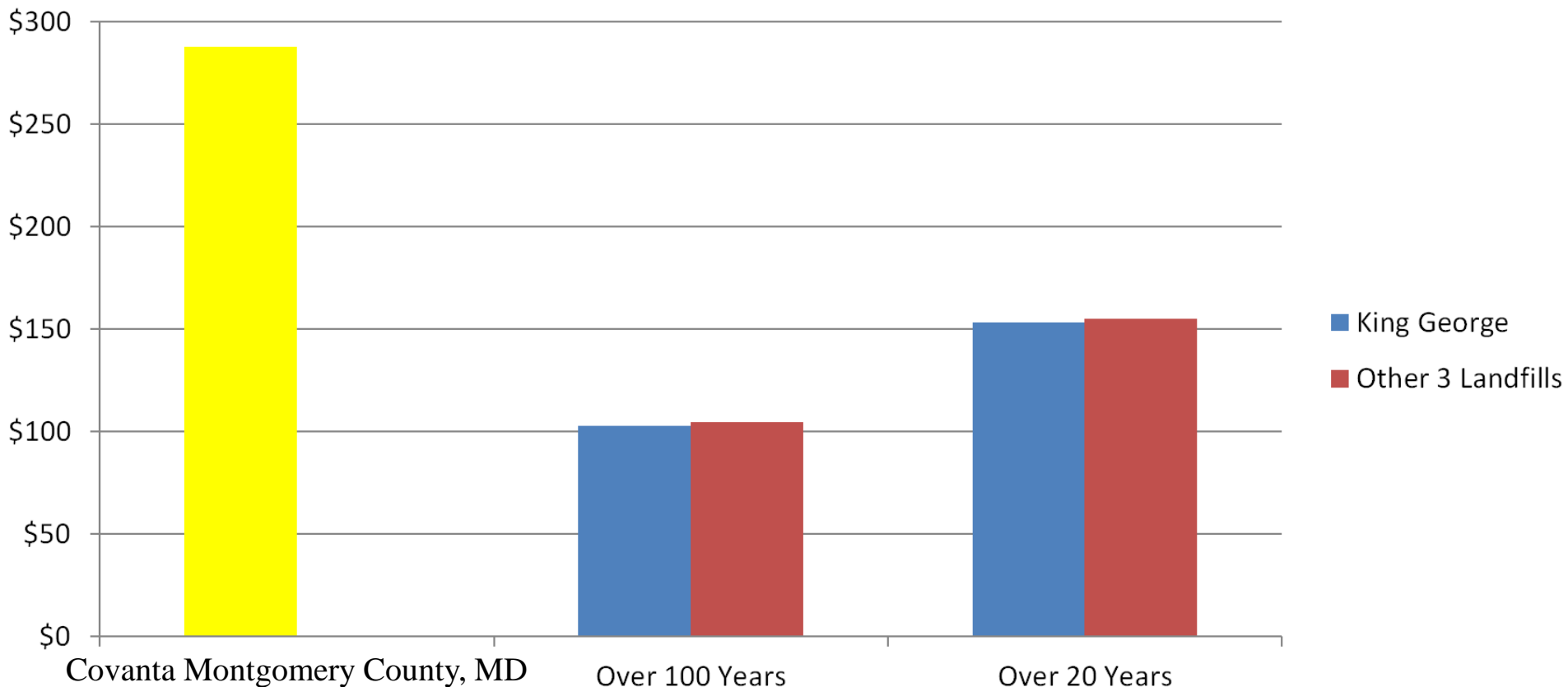


All together now...

Monetized Health & Environmental Cost

[All impacts combined and monetized.]

\$288/ton for incineration vs. \$103-155/ton for landfilling.



Trash Incineration (with ash landfilling) is Worse than Landfills

Incineration is worse for:

- Global warming
- Toxic emissions
- Nitrogen Oxide emissions (asthma)
- Particulate Matter emissions
- Acid rain
- Smog
- Cost
- Number of people impacted
- Environmental racism
- Jobs

Landfills are worse for:

- Ozone depletion
- Carcinogenic emissions
- Pesticide-like chemicals

Health effects

People living near incinerators have an increased risk of...

- **All types of cancer, including:**
 - **Stomach**
 - **Colorectal**
 - **Liver**
 - **Renal**
 - **Lung & pleural**
 - **Gallbladder**
 - **Bladder**
 - **Non-Hodgkin lymphoma**
 - **Leukemia**
 - **Soft-tissue sarcoma**
- **Respiratory diseases & symptoms**
- **Cardiovascular diseases**
- **Urinary diseases**



Hartford County's largest air polluters (2014 U.S. EPA National Emissions Inventory)

Facility	Pounds of Air Pollution (2014)
Bradley Intl Airport	2,703,413.5
C R R A / Mid-Connecticut	2,476,912.3
M D C /Hartford WPCF	754,769.1
Covanta Bristol, Inc	683,080.6
[61 other smaller sources]	1,739,338.1
TOTAL	8,357,513.5

Note that a modest expansion in capacity at the Covanta Bristol trash incinerator would cause it to overtake the sewage sludge incinerator at the Hartford Water Pollution Control Facility as the third largest air polluter in the county. If this were coupled with the closure of the Mid-Connecticut trash incinerator in Hartford, the Bristol incinerator becomes the county's second largest air polluter.

New London County's largest air polluters (2014 U.S. EPA National Emissions Inventory)

Facility	Pounds of Air Pollution (2014)
Covanta Southeastern Ct Co	1,110,072.6
Wheelabrator Lisbon Inc (WM)	716,123.9
[25 other smaller sources]	2,017,809.5
TOTAL:	3,844,006.0

Top 10 Greenhouse Gas Emitters in Connecticut (trash incinerators in **bold**)

Facility	City	County	St	GHGs (Metric Tons CO2e)
Lake Road Generating Company	Dayville	Windham	CT	2,140,048
KLEEN ENERGY SYSTEMS POWER PLANT	Middletown	Middlesex	CT	1,546,073
Bridgeport Energy	Bridgeport	Fairfield	CT	1,401,437
Milford Power Company LLC	Milford	New Haven	CT	1,235,164
Wheelabrator Bridgeport L.P.	Bridgeport	Fairfield	CT	802,396
Mid-Connecticut Resources Recovery Facility	Hartford	Hartford	CT	751,271
Southeastern CT Resource Recovery Facility	Preston	New London	CT	259,655
Bridgeport Harbor Station	Bridgeport	Fairfield	CT	221,542
Wheelabrator Lisbon Inc.	Lisbon	New London	CT	196,085
Covanta Bristol, Inc	Bristol	Hartford	CT	192,679

Note: this is based on 2016 EPA FLIGHT data, with the 2014 eGRID values for unadjusted CO2 emissions for incinerators, so that all actual CO2 emissions are counted. Adjusting values to reflect a slight reduction in waste burned in 2016 vs. 2014 does not change these ranks at all.

Zero Waste Jobs



Deconstruction Crew, Second Chance, Baltimore, MD. Photo Credit: C. Seldman

What is Zero Waste?

“The conservation of all resources by means of responsible production, consumption, reuse, and recovery of all products, packaging, and materials, without burning them, and without discharges to land, water, or air that threaten the environment or human health.”

If you're not for Zero Waste, how much waste are you for?

Zero Waste means ZERO incineration and at least 90% diversion from landfills and other forms of destructive disposal.

The goal is to get as close to zero as possible, without getting caught up on the impossibility of actually hitting zero.

“Zero waste” is like “zero drug tolerance” or “zero accidents in the workplace” standards. Zero is the goal, and the right policies will get you as close as you can get.

THE ZERO WASTE HIERARCHY

RETHINK/REDESIGN

REDUCE

REUSE

RECYCLE/COMPOST

MATERIAL RECOVERY

RESIDUALS MANAGEMENT

(Biological treatment and stabilized landfilling)

UNACCEPTABLE

(Waste deregulation, incineration,
and "waste-to-energy")



Zero Waste Hierarchy

- Rethink / Redesign
- Reduce
- Source Separate:
 - Reusables
 - Recycle (multi-stream)
 - Compost
 - Waste
 - **Research** to see what is left, and encourage redesign
 - **Recovery**: mechanically remove additional recyclables
 - Anaerobically digest, then aerobically compost residuals
 - Stabilized (digested) residuals to landfill

What is the best disposal option for the “Leftovers” on the way to Zero Waste?

By

Dr. Jeffrey Morris

Dr. Enzo Favoino

Eric Lombardi

Kate Bailey



www.ecocycle.org/specialreports/leftovers

The back end is still a landfill...

1. Direct landfilling

(bad, but better than incineration)

- leachate (toxics)
- air emissions (toxics, methane, odors)

2. Incineration → toxic ash to landfill

(most polluting and expensive option)

- leachate (even more toxics)
- air emissions from ash blowing off site (toxics)

3. Anaerobic digestion → landfill

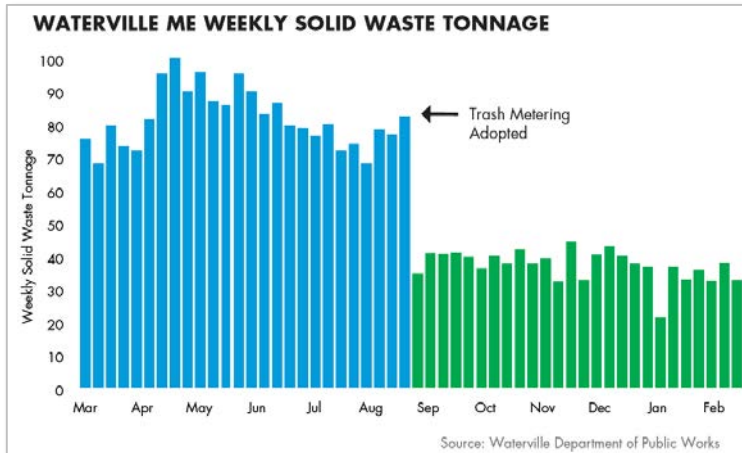
(best option; avoids gassy, stinky landfills)

- odor, leachate and air emissions highly minimized

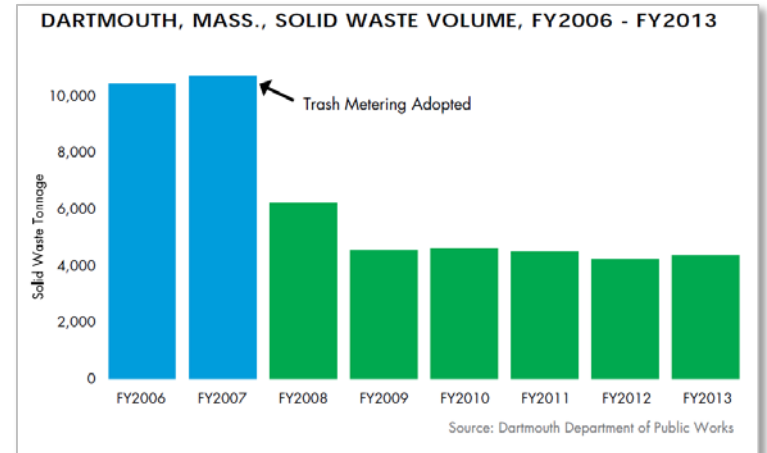


Results: MSW Reduction of 44% on Average

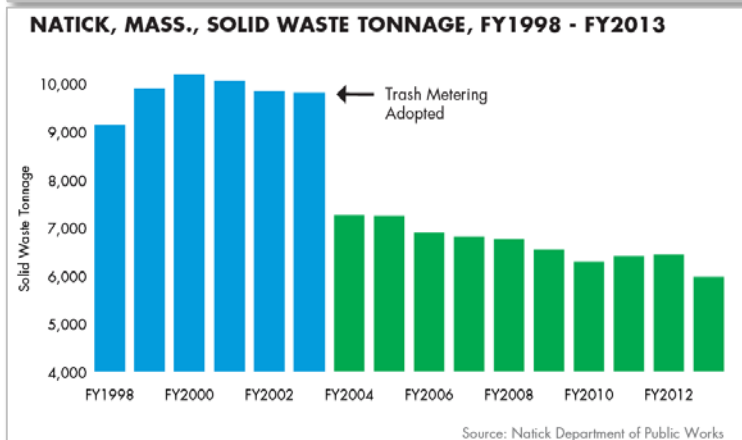
SMART / 'Unit Based Pricing' is a science. The data spans over decades across hundreds of municipalities with diverse demographics.



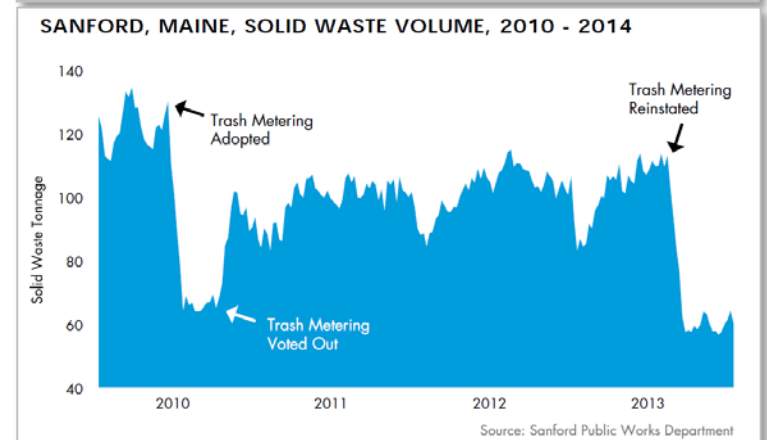
WATERVILLE, ME
53% DECLINE IN WASTE



DARTMOUTH, MA
59% DECLINE IN WASTE



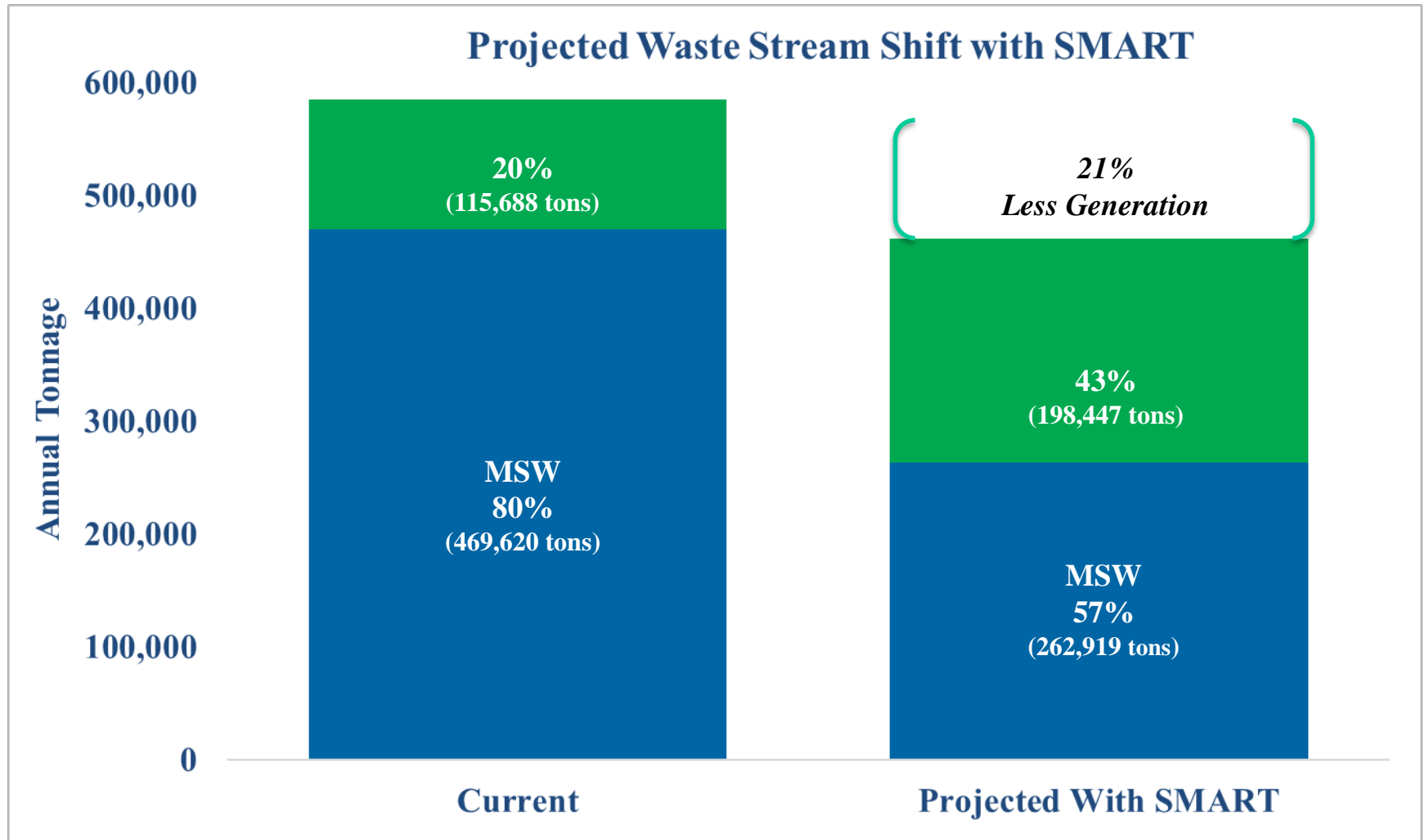
NATICK, MA
35% DECLINE IN WASTE



SANFORD, ME
40%+ DECLINE IN WASTE...TWICE

Expected Waste Shift from SMART (40 DEEP Dive Participants)

Overall waste generation is expected to decrease by about 21% due to source reduction and reuse.



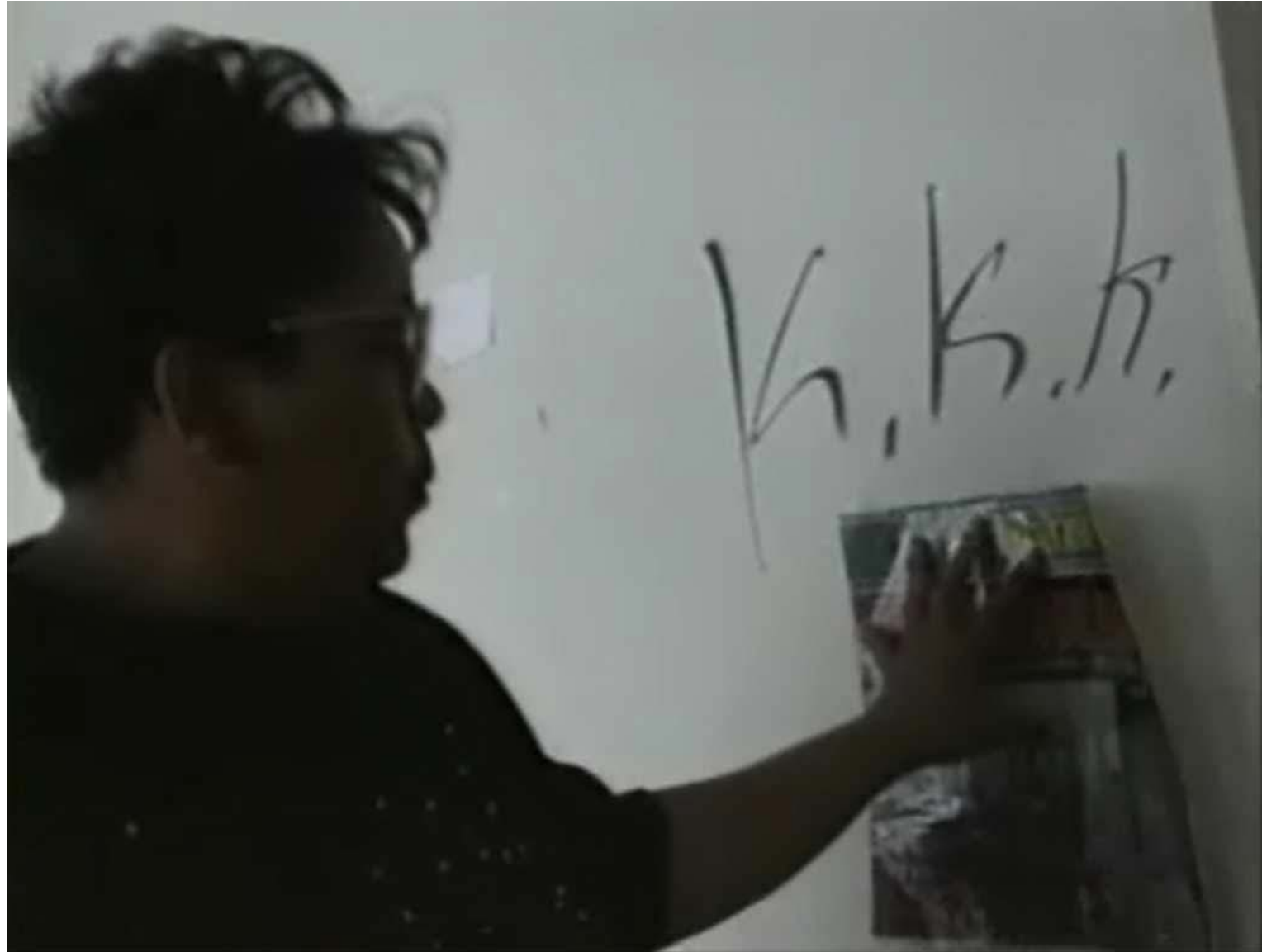
What is Environmental Racism?

- Communities of color are more heavily targeted for hazardous industries than poor communities are.
- Doesn't need to be intentional to have a discriminatory effect



Chester, Pennsylvania children live and play next door to nation's largest trash incinerator and other major industry.

Racism isn't usually this obvious...



Zulene Mayfield shows signs of vandalism at office of Chester Residents Concerned for Quality Living in Chester, PA in 1996 "Laid to Waste" documentary.

1984: Cerrell Associates Report

(Trash incinerators in CA)

LEAST LIKELY TO RESIST

Southern, Midwestern communities
Rural communities
Open to promises of economic benefits
Conservative, Republican, Free-Market
Above Middle Age
High school or less education
Low income
Catholics
Not involved in social issues
Old-time residents (20 years+)
"Nature exploitive occupations"
(farming, ranching, mining)

MOST LIKELY TO RESIST

Northeastern, western, California
Urban communities
Don't care or benefits are minor
Liberal, Democrat, "Welfare State"
Young and middle-aged
College-educated
Middle and upper income
Other
Activist
Residents for 5-26 years
Professional ("YUPPIES" & "housewives")

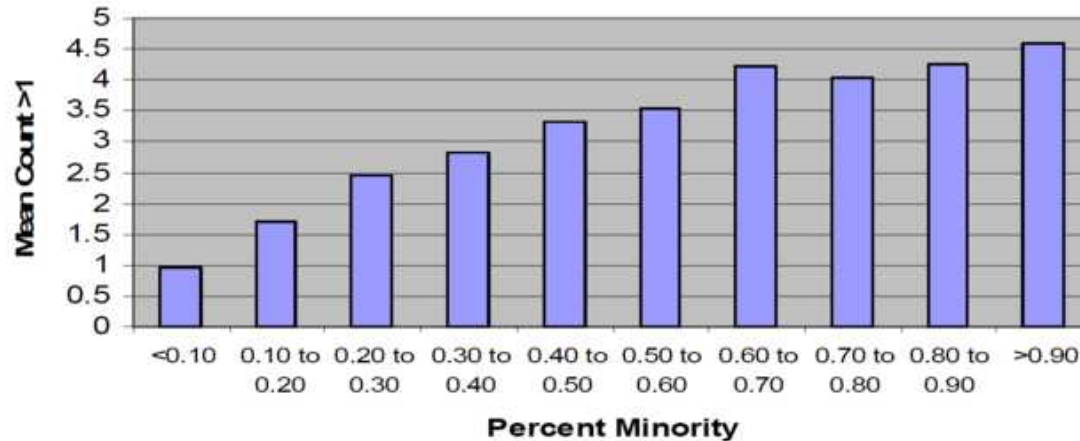
What is Environmental Justice?

- Environmental Justice is the movement's response to environmental racism
- Principles of Environmental Justice developed at the First National People of Color Environmental Leadership Summit in 1991
- Defined by the movement, not by EPA

www.ejnet.org/ej/

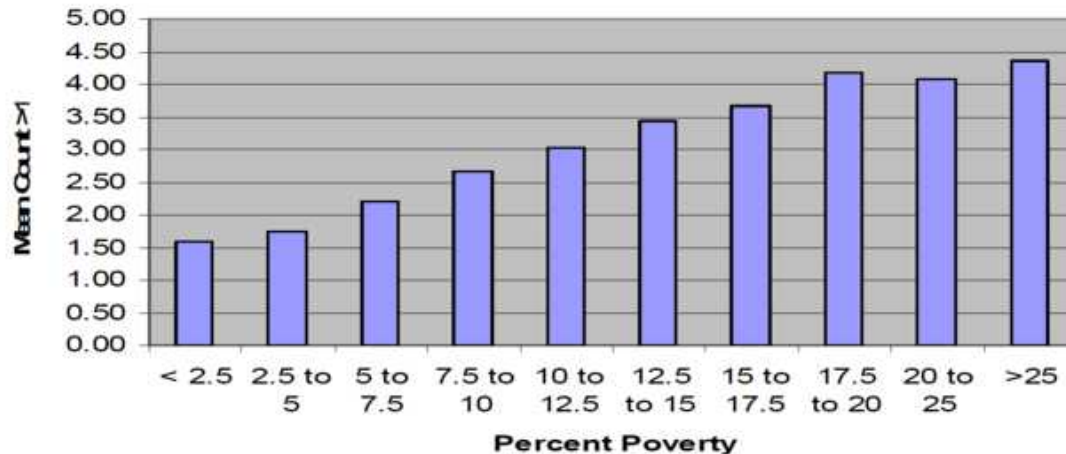
Relationship between Cumulative Impact and Social/Economic Indicators

Figure 1: Relationship Between Cumulative Impact and Percent Minority



- Grouped all block groups based on percent minority and poverty
- Calculated average cumulative impact score for combined groups
- Cumulative impact scores increase steadily with increasing percent minority and poverty

Figure 2: Relationship Between Cumulative Impact and Poverty



Trash Incineration and EJ in CT

Hartford & Bridgeport incinerators account for 76% of the trash incineration capacity in the state.

[Wheelabrator Lisbon](#) - 500 tons/day

80-90% white; higher income; 6,828 people living within 2.5 miles

[Southeastern Connecticut Resource Recovery \(Covanta\)](#) - 669 tons/day

70-90% white; higher income; 4,391 people living within 2.5 miles

[Bristol Resource Recovery Facility \(Covanta\)](#) - 650 tons/day

80% white; slightly higher income; 15,000 people living within 2.5 miles

[Wheelabrator Bridgeport](#) - 2,250 tons/day

Black/Latino; very low income; 58,000 people living within 2.5 miles

[Mid-Connecticut Resource Recovery Facility \(MIRA\) in Hartford](#) - 2,850 tons/day

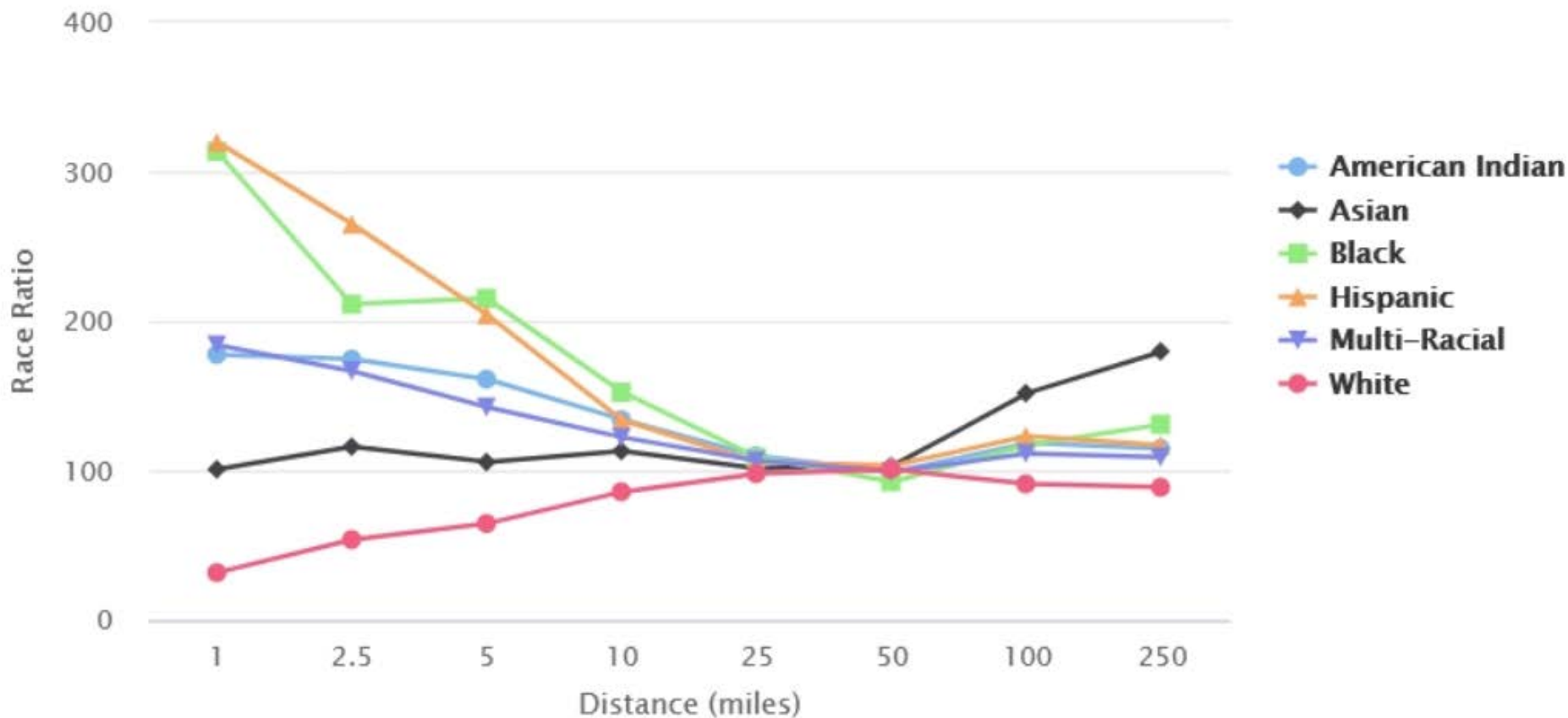
Black/Latino; very low income; 47,000 people living within 2.5 miles

Trash Incineration and EJ in CT

Connecticut Trash Incinerators : Ratio of Percent Race to CT Mean vs Distance



Powered by: JusticeMap.org, Census Data, and Energy Justice

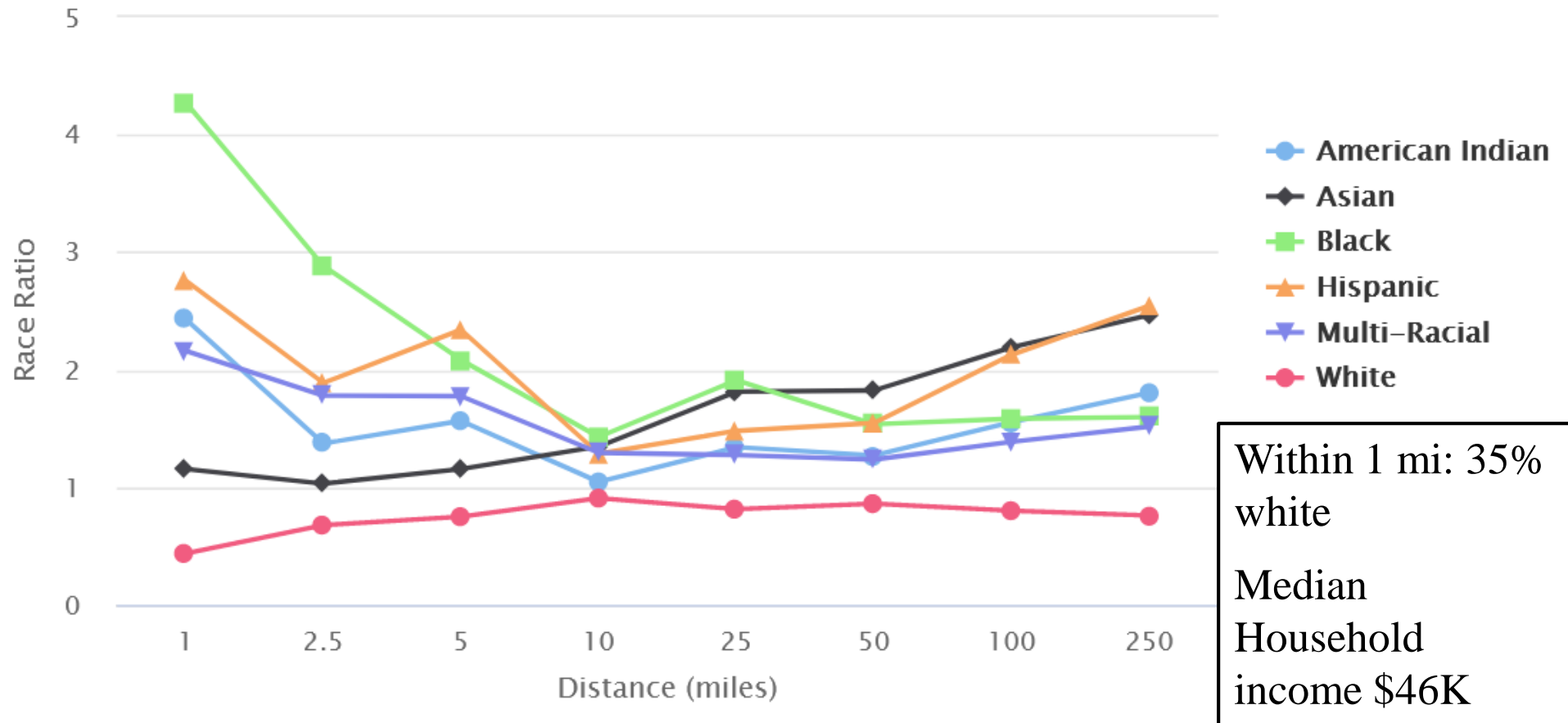


Trash Incineration and EJ in PA

Operating Trash Incinerator : Ratio of Percent Race to PA Mean vs Distance



Powered by: JusticeMap.org, Census Data, and Energy Justice

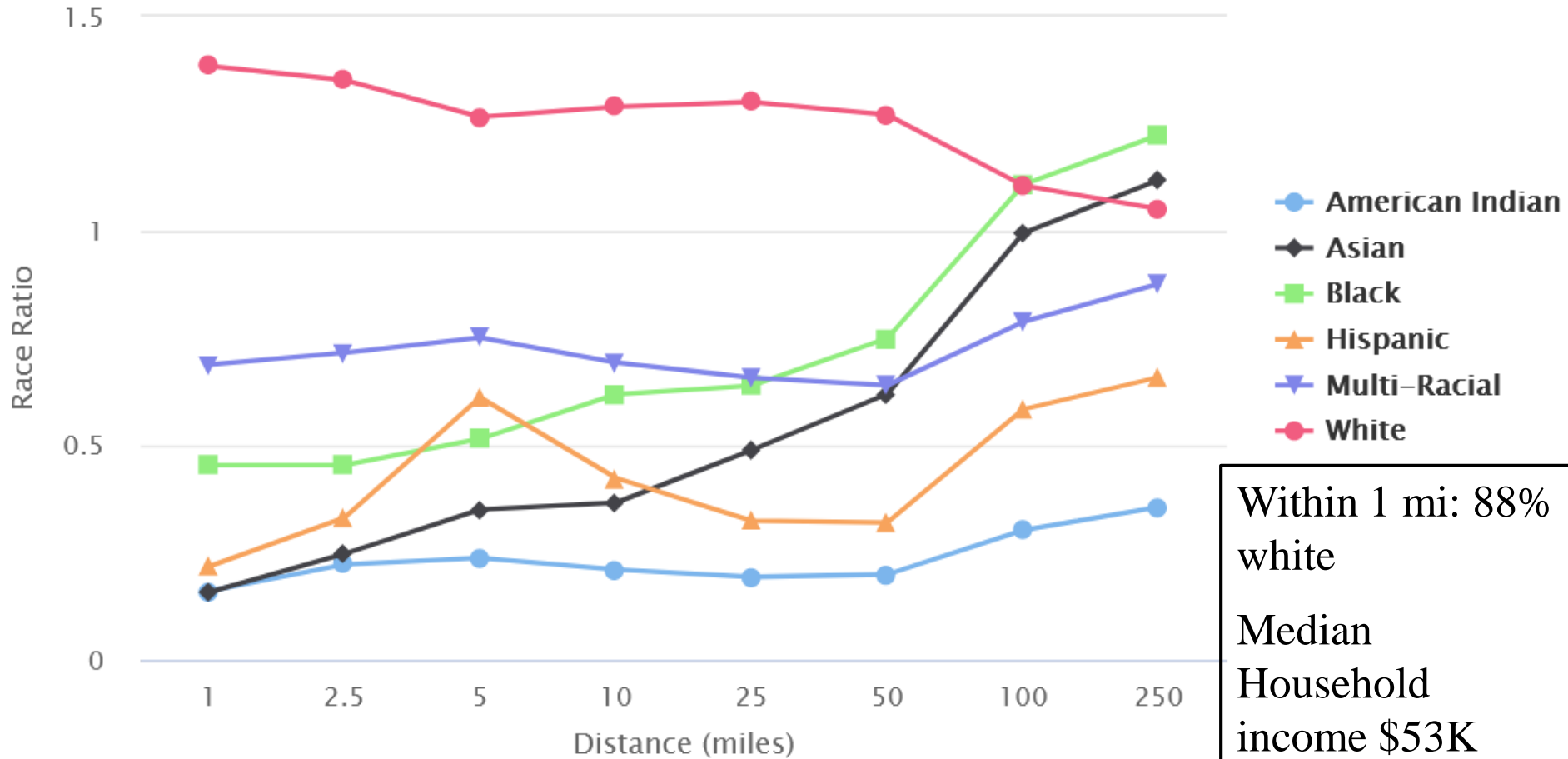


<http://www.spatialjusticetest.org/test/2044.html>

Landfills and EJ in PA

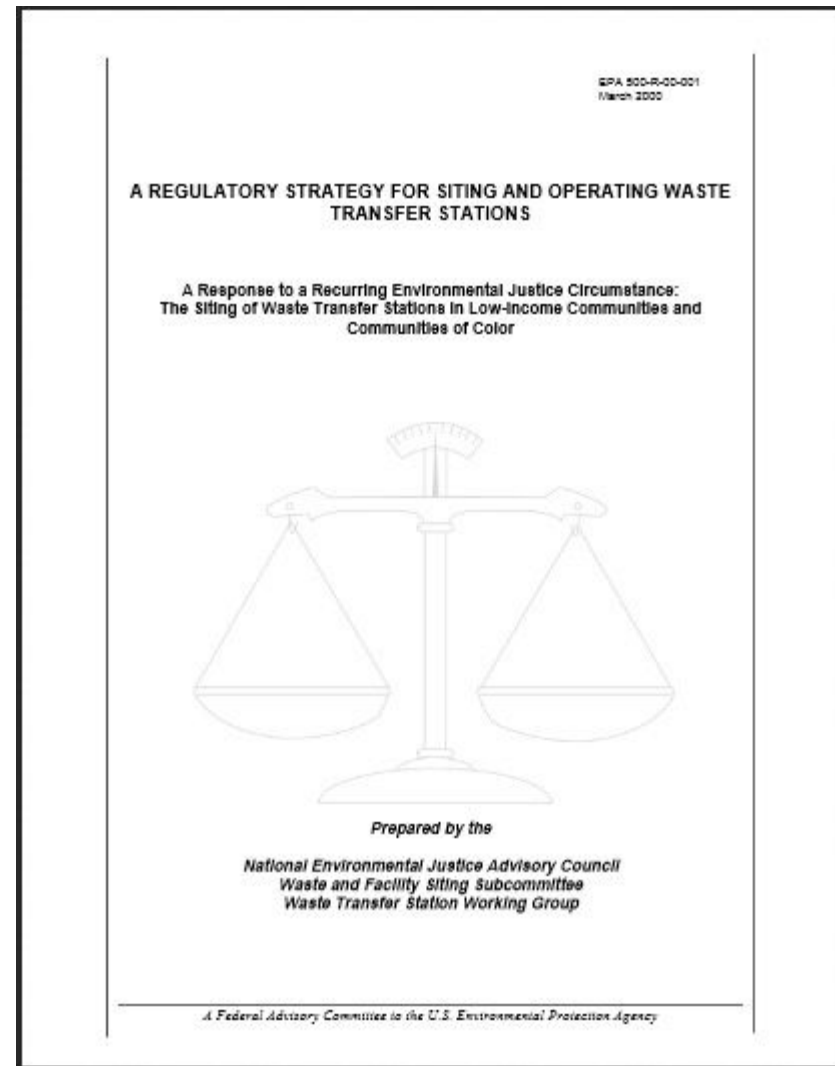
Ratio of Percent Race to US Mean vs Distance

Powered by: JusticeMap.org, Census Data, and Energy Justice



Trash Transfer Stations

In 2000, the EPA's National Environmental Justice Advisory Council noted that **waste transfer stations “are disproportionately clustered in low-income communities and communities of color.”**



Trash Transfer Stations

In addition to nuisances like odors, “vectors” (seagulls, rats), and trucks (and their diesel exhaust), transfer stations are also a source of airborne mercury pollution from sources such as broken fluorescent bulbs.

TECHNICAL PAPER

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**Airborne Emissions of Mercury from Municipal Solid Waste.
II: Potential Losses of Airborne Mercury before Landfill**

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