Framing Curbside Food Composting in Politically Conservative Communities

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Abstract

This paper investigates how newspapers in politically conservative towns frame local curbside food waste composting programs. Increasingly popular in communities across the United States, curbside composting is a convenient way for households to participate in sustainable waste management. Composting food waste reduces greenhouse gas emissions from landfills and the production of synthetic fertilizers. Frames are the inclusion and saliency of information. Analyzing frames in news articles provides insight into the issue narratives among reporters, government officials, and, to some extent, the public. To better understand why politically conservative communities in the United States offer curbside pickup of food waste for composting programs, the frames in thirty-five news articles from Fridley and Hutchinson, Minnesota were analyzed. The *economic costs* frame was the most prevalent, followed, in no particular order, by *economic opportunities*, *growth*, *success*, and *community pride*. Variations in frame prevalence and usage were observed between the two communities. This paper contributes to understandings of how environmental sustainability initiatives are perceived and considers the question of why such programs may appeal to politically conservative communities.

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Introduction

Climate change is the greatest threat to the current and future well-being of humanity. Anthropogenic climate change, climate change caused by human activities, is a well-documented phenomenon that began with the Industrial Revolution and the prolific combustion of fossil fuels in the 1800s (Intergovernmental Panel on Climate Change [IPCC], 2018). The burning of fossil fuels releases massive amounts of greenhouse gases such as carbon dioxide, methane, and nitrous oxide into the atmosphere. These changes to the earth's atmosphere result in climate change, including an increase in the average global temperature known as global warming (IPCC, 2018). Many human processes involve the release of greenhouse gases and the destruction of natural systems responsible for capturing greenhouse gases. One of these processes is the production and disposal of food.

The Problem of Food Waste

Food scraps were the single greatest source of municipal solid waste (MSW) in the U.S. in 2018, accounting for 24.1% of materials discarded in the municipal waste stream. It is estimated that less than 10% of food scraps are composted, with the majority going to landfills (United States Environmental Protection Agency [EPA], 2021). Landfills present a host of environmental problems including greenhouse gas emissions, leachate, and unsustainable land use (EPA, 2021). Even closed landfills can create problems years later. One study found some closed landfills are at risk of being opened by erosion associated with sea level rise (Brand & Spencer, 2019). The opening of these closed landfills will pollute the surrounding ecosystems to the determinant of human health and ecosystem well-being (Brand & Spencer, 2019).

When organic matter is left to decompose in an anaerobic environment, without adequate amounts of oxygen, it degrades through a process that releases carbon dioxide and methane (EPA, 2021). There is not enough oxygen in landfills for all of the organic matter to decompose aerobically, in the presence of oxygen. Consequently, landfills emit large amounts of carbon dioxide and methane. In 2019, landfills were the third largest producer of methane in the U.S., releasing approximately 17.3% of total U.S. anthropogenic methane emissions (EPA, 2021). In addition, the production and application of synthetic fertilizer to fields emits greenhouse gases (Zhang et al., 2019).

There is a solution to the problem of producing energy-intensive fertilizers and the emission of greenhouse gases resulting from the decomposition of food scraps in landfills:

composting. Composting is the process of managing aerobic decomposition (Insam & de Bertoldi, 2011). Organic waste products, such as food scraps, leaf litter, and lawn trimmings, are mixed together to decompose. This process happens without human intervention, but in commercial systems the amount of water and materials are tracked to ensure optimal aerobic decomposition (Insam & de Bertoldi, 2011). As long as enough oxygen is introduced into the compost by turning it, in the same way air is introduced into batter when it is stirred, then aerobic decomposition occurs. Disposing of food waste through composting thereby produces fewer greenhouse gases than throwing it into landfills (EPA, 2021). When organic matter decomposes aerobically, significantly less carbon dioxide is released. One ton of mixed organic waste produces -41 kg carbon dioxide equivalents when composted, compared to almost 400 kg carbon dioxide equivalents in a landfill (Nordahl et al., 2020). A negative amount of carbon dioxide equivalents is possible because the study accounted for the carbon sink created by applying compost to soil and a consequent reduction in synthetic fertilizer production (Nordahl et al., 2020).

Applying nutrient rich compost to soil also reduces the amount of synthetic fertilizer required for agricultural production which reduces greenhouse gas emissions by reducing synthetic fertilizer production (EPA, 2021). An additional benefit of applying compost to soil is that it strengthens the soil structure and increases water holding capacity, which reduces flood events and erosion (Nordahl et al., 2020). This improves water quality and limits damage to structures.

Who Composts

Composting food waste is broadly supported in the U.S., and 67% of the 72% of Americans who are not part of a food waste composting program support separating food waste, provided the program is accessible to them (Attitudes Toward Composting, 2014). However, the majority (62%) of those people would not support an increase in taxes or a fee to fund a public composting service (Attitudes Toward Composting, 2014). This indicates that Americans are largely ambivalent towards food composting programs. They are willing to participate as long as it is not difficult or costly for them to do so.

The divide between support for and implementation of food waste composting programs is further observed by the number of communities in the U.S. that compost. A survey conducted in 2015 found that forty-six cities in the U.S., of the over two hundred with populations between

100,000 and one million people, have some type of food scrap collection program (Pollans et al., 2017). Of these cities, twenty-one had curbside collection programs and twenty-two provided residents with free or discounted backyard composting bins (Pollans et al., 2017). In all cases, the compost bins were paid for or subsidized by the city. In their Draft Inventory of Greenhouse Gas Emissions and Sinks 1990-2019 report, the EPA notes, "the diversion of food scraps has been consistently low since 1990 because most cities and counties do not practice curbside collection of these materials, although the quantity has been slowly increasing in recent years," (EPA, 2021).

Some research exists analyzing what types of communities, based on demographic data, pursue municipal composting programs (Pollans et al., 2017). Pollans et al. found that in mid-sized cities a higher population density, unit-pricing trash system, and higher levels of education were more likely to have a curbside composting program for food waste. Source-separated curbside recycling programs negatively correlated with curbside food waste collection and there was no correlation between socio-economic characteristics and the presence of composting programs (Pollans et al., 2017). However, there is a lack of information about if the political ideology of a community influences their decision to compost food waste.

Political Conservatives and Environmental Sustainability in the U.S.

Modern environmentalism was a bipartisan issue when it became a subject of public discourse in the 1970s (Dunlap et al., 2001). Republican legislators at the time were less supportive of environmental protections than Democratic legislators, but the debate was not contentious as evidenced by Republican President Richard Nixon establishing the Environmental Protection Agency in 1970 in response to overwhelming public support. It wasn't until President Reagan took office in 1981 that environmental protection began to become a polarizing political issue, with members of Congress increasingly voting along party lines (Dunlap et al., 2001). As the champion of limited government and free-trade, the conservative Republican Party was wary of laws that restricted industry, including regulations on pollution and land use, while the Democratic Party generally supported environmental protections (Dunlap et al., 2001; Van Boven et al., 2018).

The threat of the climate crisis remains a contentious topic today. According to a poll conducted by the Pew Research Institute in 2020, 60% of Americans overall say that climate

change is a major threat to the U.S. while only 31% of Republicans say the same (Kennedy, 2020). 88% of Democrats consider climate change a major threat to the nation (Kennedy, 2020).

Although it is clear that today political conservatives are less supportive of environmental protections than liberals, the divide remains complex. The overlapping interests of historically conservative groups, such as farmers and hunters, and climate scientists and activists regarding the health of natural ecosystems has been widely observed (Robbins, 2006). One survey of hunters and anglers found both Republicans and Democrats strongly supported a variety of conservation policies (Theodore Roosevelt Conservation Partnership, 2017). There are opportunities for political consensus on some environmental problems, even if a political consensus on the threat of climate change remains elusive. It is unclear, however, if there is enough time for the country to unite around enacting stronger environmental policies before the worst consequences of the climate crisis are suffered. Agreeing to disagree about the threat of climate change while implementing environmentally sustainable systems may be a more productive approach. For example, some Republican mayors are welcoming renewable energy production to their communities due to the economic opportunity the industry provides rather than the environmental benefits (Taylor, 2017). Policies that improve environmental sustainability may also have economic benefits, in the case of solar energy, or contribute to maintaining a way of life, in the case of conserving land for hunting. Agreement about the facts of climate change may be unnecessary to build support for sustainability policies.

The Role of the News Media in Environmental Policy

There are three groups generally recognized as contributing to the national discourse on climate change: government, corporations, and the public. A fourth group, the news media, is increasingly recognized as contributing to national discourse and consequently public policy. This is important, because the general public places greater importance on topics covered in the news than other topics (King et al. 2017; Leighley, 2004). These issues influence how the public evaluates their political representatives which impacts the issues prioritized by representatives. Through this cycle, the news media operates in conjunction with policy makers and the general public to create a common narrative about what matters at the moment (Wolfsfeld, 2011). Environmental policies are also subjected to this process, where action from policy makers is dependent on interest from citizens (Hart, 2011). Without public consensus on the threat of climate change, there is little incentive for policy makers to create policies to mitigate the threat.

An impartial news media is often lauded as the ideal in a democracy (Adam et al., 1999). Conversely, the impossibility of a perfectly objective press is widely recognized (Adam et al., 1999; Munoz-Torres, 2012). One way the failure of news media to be impartial is observed is in the varying frames used by different news outlets. Frames provide readers with a lens through which to view issues (Leighley, 2004). The most common definition of a frame was developed by Robert Entman in 1993. According to Entman, "to frame is to select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (1993). News media develop frames based on the sources accessed, other media outlets, and the standard practices of their company or even the preferences of the individual reporter (Entman, 1993; Leighley, 2004). Frames can include the economic impact, environmental consequences, social experience, or any other aspect of a story. The facts included in a news story can contribute to the overall tone of the article. For example, if an article includes ten negative consequences of purchasing solar panels and one benefit of purchasing solar panels the overall tone of the article will be negative towards purchasing solar panels.

The extent to which frames in local news media differ from those in national outlets is unclear. One study found local and national news outlets, across traditional, partisan, and emerging news sources, identified the same issues and frames as relevant (Vargo & Guo, 2017). Other studies observe a marked difference between frames used in national and local news. Local news outlets in the U.S. have been found to be more supportive of "green" jobs than national news organizations (Hess et al., 2018). A study of twenty-nine newspapers from fifteen states found local news outlets were more likely to have articles that positively classified green jobs, which were loosely identified as manufacturing or construction jobs on environmentally conscious projects, than national news outlets. It was hypothesized this resulted from green job opportunities remaining more feasible at a local level even when federal efforts to create green jobs failed (Hess et al., 2018). In general, consistency of frames, especially between the local and national level and differing political ideologies, cannot be expected (Bendix & Liebler, 1999; Hess et al., 2018). As a potential policy driver and as a reflection of local attitudes and government decisions, the frames of local news media provide insight into how communities view policy, including those that impact the environment (Druckman & Lupia, 2017). It is

unclear to what extent the local news media influences the adoption of sustainability programs such as food composting systems. Understanding the ways in which local news media intentionally or unintentionally shape the opinions of policy makers and the public will offer insight into the future success of sustainability initiatives. A thorough understanding of the contents of news articles about environmental sustainability programs is necessary to understand how the news influences the creation of sustainable systems.

Main Objectives

This study examines the local news-based discussions surrounding the implementation of food composting systems in politically conservative communities. A frame analysis of local newspapers was conducted to determine how the communities of Hutchinson and Fridley, Minnesota view composting as an environmental policy. This research approach was selected based on the existing literature that highlights the importance of local news media as both a reflection of and an influencer in policy discussions. Both of the towns selected for analysis consistently vote for Republican leaders and have a curbside composting program. This study identifies frames used in news stories to discuss food composting systems in the politically conservative communities of Hutchinson and Fridley.

Methods

Frame Identification

Frames are the combination of facts selected for an article and the salience of facts in an article, both of which are determined by the journalist (Entman, 1993). A frame provides context for the reader and directs their attention to specific aspects of the news. Frames may be general or issue specific. General frames include *economic*, *capacity and resources*, *morality*, *fairness and equality*, *policy prescription and evaluation*, *security and defense*, *health and safety*, *quality of life*, and *cultural identity* (Boydstun et al., 2014).

Entman (1993) created a popular categorization of communication frames in news articles, where a frame is applied to problem definitions, casual interpretations, moral evaluations, or treatment recommendations in a given news article. A frame may be used in the identification of a problem; to explain a cause; as a judgement of a person, organization, or policy; or when describing a solution. For example, an *economic cost* may be a problem, cause, or solution depending on the context provided in an article. The *environmental benefits* in a story may be a cause, solution, or a reflection of a moral judgement. Categorizing frames in this way

provides further insight into how the frames operate within the article and therefore how they may be expected to affect the reader. Identifying a problem, cause, or solution is uncomplicated. Negative language is used to describe problems and they are generally found at the beginning of news articles. Solutions may be in relation to a problem, have a positive connotation, and are generally found at the end of articles. Causes are found in the middle of news articles and are generally in relation to a problem or solution. A moral judgement is a direct judgement where a problem, cause, or solution is not otherwise identified. Entman's (1993) frame categorization method was used in this study to analyze the news articles from both case study communities.

There are two common approaches to identifying frames, deductive and inductive analysis (Atanasova, 2019). In a deductive analysis, frames are identified through existing literature prior to reading the news articles. This method allows frames to be compared across studies. It also supports the collection of more data by permitting the use of computer programs, which is only possible when frames are defined prior to data collection. Inductive analysis allows the researcher to identify frames as they read the articles, without possessing prior assumptions based on previous studies. Inductive analysis requires the researcher to read the articles multiple times, but it provides the flexibility to investigate frames that may be unique to a news outlet or topic (Atanasova, 2019). Due to the lack of research about how community compost programs are framed in news media, inductive analysis was the primary method utilized in this study. Although the majority of frames were identified during analysis, a few frames commonly associated with environmental sustainability initiatives were identified in existing literature prior to data collection and applied to this study. These previously identified frames were *economic costs*, *economic opportunity*, and *ecological advantages* (Atanasova, 2019; Bonfadelli, 2009; Foss, 2018; Lewis, 2000).

Data Selection and Content Analysis

To examine the rhetoric about food composting in Hutchinson and Fridley, Minnesota, a frame analysis was performed on articles from local newspapers published in both towns. These towns were chosen because they are politically conservative and have a curbside pickup composting program. Both towns are in counties where 50% or more of the population voted for the Republican presidential candidate from 2008 through 2016 (New York Times, 2008; Politico, 2012; Politico, 2016).

Located ten minutes north of downtown Minneapolis and twenty minutes northwest of downtown St. Paul, Fridley had a population of 27,222 as of 2019 (United States Census Bureau, 2019). The median household income from 2015-2019 was $63,836. Fridley is in Anoka County, where 50%, 50.3%, and 50.7% of voters selected the Republican candidate in the presidential elections of 2008, 2012, and 2016 respectively (New York Times, 2008; Politico, 2012; Politico, 2016). The 2020 election occurred after Fridley had been selected for this study, but the Republican candidate in the 2020 presidential election received 49.8% of the votes, a greater percentage than any other candidate in the county. On the town website, Fridley gives the following reason for composting food waste, "We already recycle our plastic, aluminum and cardboard at home, because it makes sense environmentally and economically," (City of Fridley, n.d.). Participating in the curbside composting program, operating since 2018, is optional and costs residents an additional $10.30 a month. Only buildings with four dwelling units or less are eligible to participate (City of Fridley, n.d.).

Hutchinson's Ends Statement, a list of goals for the community, includes the passage, "City-wide recycling & composting programs reduce material going to local landfills and provide economic benefits to the community," (City of Hutchinson, 2012). About an hour and a half west of Minneapolis-St. Paul, Hutchinson was home to 13,983 people in 2019 (United States Census Bureau, 2019). The median household income in Hutchinson in 2019 was $57,672 (United States Census Bureau, 2019). Hutchinson is part of McLeod County, where 58%, 60%, 65.1% of voters selected the Republican candidate in the presidential elections of 2008, 2012, and 2016 respectively (New York Times, 2008; Politico, 2012; Politico, 2016). 67% of people voted for the Republican candidate in the 2020 presidential election (Politico, 2020).

The local news publications were identified through a Google Search with the name of the town followed by "newspaper". This process resulted in the selection of the Hutchinson Leader from Hutchinson and the HomeTown Source from Fridley as the news outlets to be analyzed. Articles from the Hutchinson Leader were acquired from the NewsLibrary database and the HomeTown Source articles were acquired from the website by that same name. HomeTown Source is a collection of multiple newspapers in Minnesota, articles were drawn from several of these newspapers. The primary newspapers from which articles were selected were the Sun Focus and ABC Newspapers (Appendix B). Articles were found through the NewsLibrary database and the HomeTown Source website by searching for "composting" and

"food composting". Articles were chosen that were written no more than two years before and two years after the curbside composting program was implemented. Specifically, Fridley expanded their waste management system to include a curbside composting program in April 2018. Articles for Fridley were collected from January 2016 to December 2019. In April 2001 Hutchinson expanded their curbside composting pilot program of 300 households to include the entirety of Hutchinson. Articles collected from the Hutchinson Leader were written between August 2000 and December 2003 (Appendix B). Articles that did not specifically mention composting food waste were removed as were duplicate articles.

Frame Analysis

The goal of this project was to identify and define the frames used to discuss curbside composting programs by the local media outlets in the politically conservative towns of Hutchinson and Fridley, Minnesota. The articles were read once, then read again and frames were coded. They were read a third time one month later to ensure consistency of frame identification. Frames were recognized when, according to Entman's method, a problem, cause, solution, or moral judgement was associated with the composting program and contributed to the tone of the article.

Operationally, each sentence was evaluated to determine if it contained information framing composting in terms of a problem, cause, solution, or moral judgement. After identifying the frames, they were defined in the context of literature about sustainable development in conservative communities and in their usage in this collection of articles. The prevalence of each frame in the two cities was compared using descriptive statistics, with special attention paid to the most common frames.

Results

A total of thirty-five news articles relating to curbside composting programs were compiled, with sixteen gathered from the Fridley news outlets and nineteen from the Hutchinson Leader. Twenty-four distinct frames were identified, though not all frames were present in all of the articles. The frames were quantified by the number of articles in which they appeared and by how frequently they appeared across all the articles. The complete list of frames and their definitions are included in Appendix A. Twenty-five articles contained the *economic costs* frame, thirteen contained *success,* thirteen contained *growth,* and twelve contained *community pride*. These four frames were the frames found in the greatest number of articles (Figure 1). Figure 2

shows the frames that were most frequently identified: *economic costs* (eighty), *economic opportunity* (thirty), *growth* (thirty), and *success* (twenty-five). *Community pride* (eighteen), *community concerns* (eighteen), *state involvement* (sixteen) *state requirements* (fourteen), and *management* (ten) were also frequently identified (Figure 2).

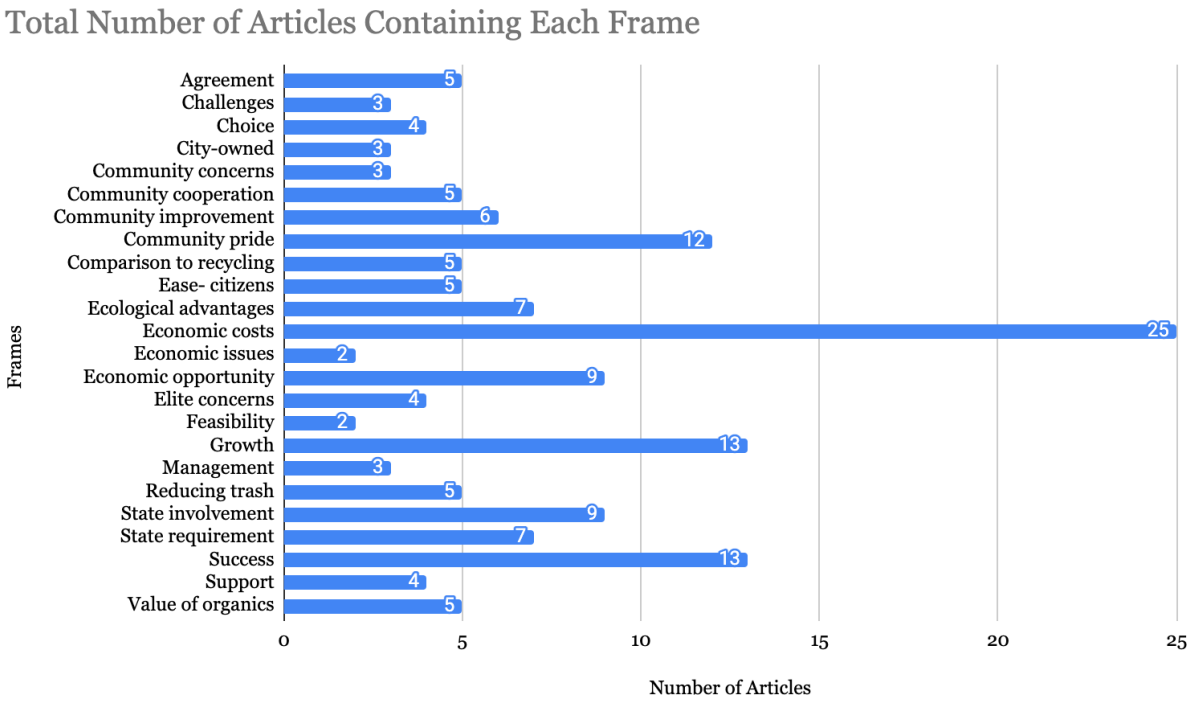

Figure 1: Total number of articles in Fridley and Hutchinson where each frame was identified at least once.

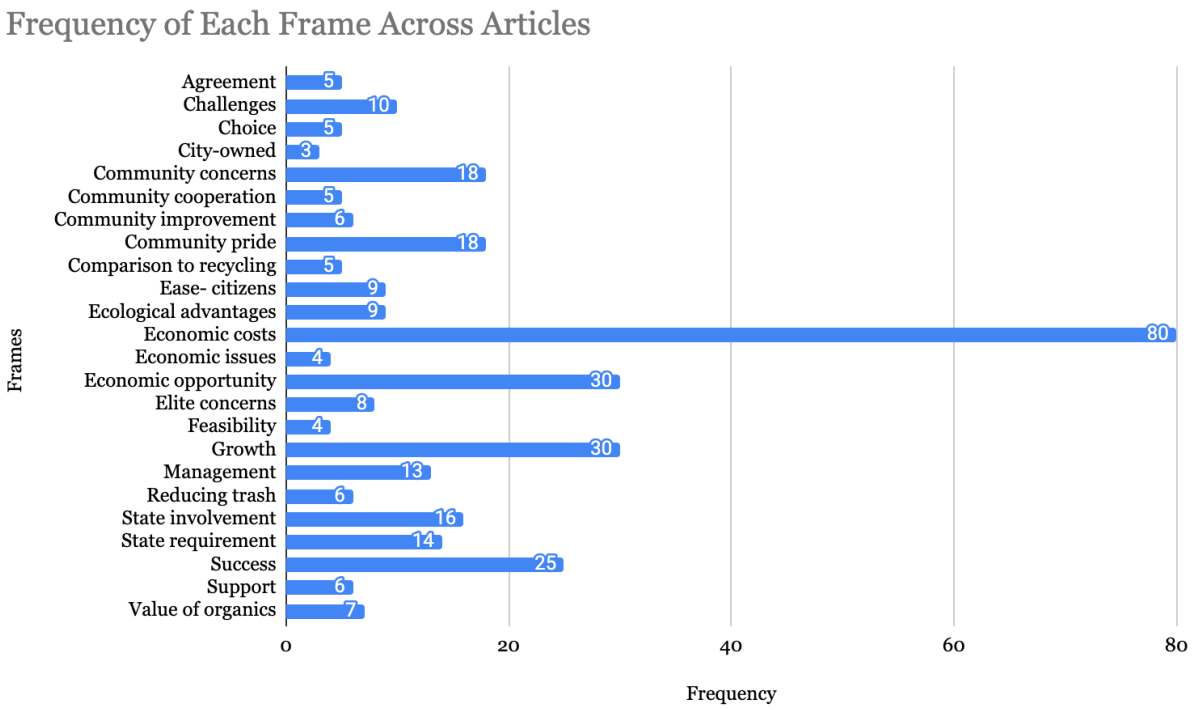

Figure 2: Frequency a frame was utilized in the articles from Fridley and Hutchinson.

In Hutchinson, fourteen of the articles contained the *economic costs* frame, nine contained the *success* frame, seven contained the *community pride* frame, six contained the *economic opportunity* frame, and six contained the *growth* frame (Figure 3). This differed from Fridley, where the *economic costs* frame was identified in eleven articles, *growth* was identified in seven, *state requirement* was identified in seven, *community pride* was identified in five, and *ecological advantages* was identified in five (Figure 3).

The *economic costs* frame was present forty-five times throughout the articles about Hutchinson, while the *economic opportunity* frame was present twenty-six times, the *growth* frame was present seventeen times, the *success* frame was present seventeen times, the *community concerns* frame was present sixteen times, the *management* frame was present thirteen times, and the *community pride* frame was present twelve times. In Fridley, the *economic costs* frame was used in thirty-five instances, *state requirement* in fourteen, and the *growth* frame was used in thirteen instances (Figure 4).

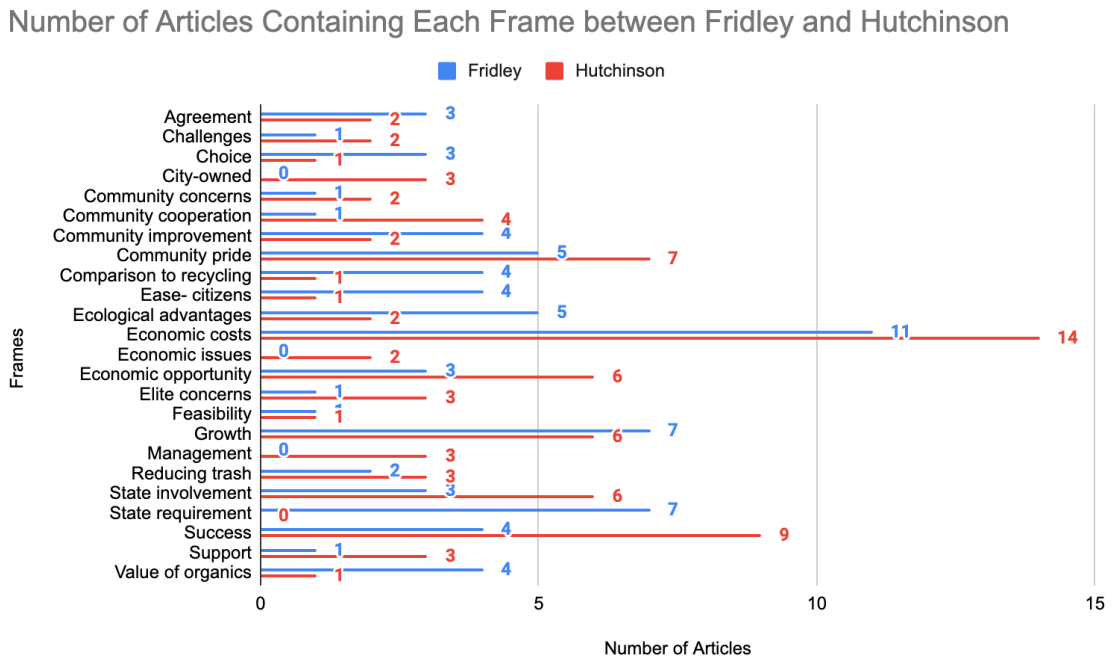

Figure 3: Number of articles in Fridley where each frame was identified at least once compared to the articles from Hutchinson.

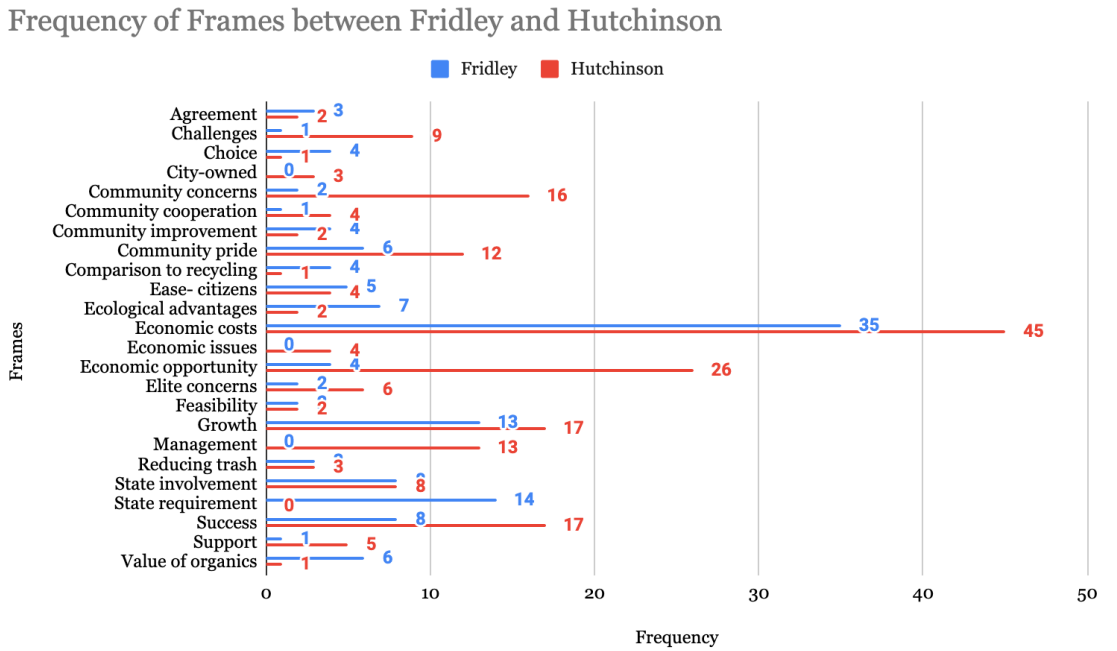

Figure 4: Frequency of frame occurrences in Fridley compared to Hutchinson.

Based on the methodology first described by Entman (1993), frames were classified as a problem, cause, solution, or moral judgement. Of the 336 individual instances frames were

identified, seventy-one were problems, 104 were causes, 137 were solutions, and twenty-four were moral judgments.

The *economic costs* frame was most likely to be cited as a problem and was also the frame identified as a problem the most of all the frames. However, the *economic costs* frame was identified in relation to solutions twenty-seven times, only two instances fewer than the number of times it was categorized as a problem (Table 1). When the *economic costs* frame was presented in relation to a problem it would often also be presented as a solution in the same article. This was true in five of the fourteen articles containing the *economic costs* frame from Hutchinson and four of the eleven articles containing the *economic costs* frame from Fridley. For example, in an article from Hutchinson about the roll-out of the curbside composting program this quote is included: ""The key is that this is source-separating," said Lawrence Winter, the city's resource recovery coordinator. "It eliminates the huge at-site sorting process that has crippled most similar programs in the past."" (Appendix B: H4). Here a solution to *economic costs*, "source-separating" is identified before the problem, "the huge at-site sorting process that has crippled most similar programs". In Fridley *economic costs* were presented as a solution, but never a problem, in five of the eleven articles.

The *economic opportunity* frame was never identified as a problem in either community. It was most frequently identified as a cause (Table 1). An example of an *economic opportunity* cause frame is seen in an article from Hutchinson discussing a presentation by the town's resource recovery coordinator to the City Council about the curbside composting program, where it notes: "City officials believe use of the carts may allow residents to lower their garbage rates by going to smaller regular garbage containers or every-other-week collection. The collected material will be composted into a product that the city will be able to sell locally in bulk or bagged for commercial sale." (Appendix B: H5).

The *growth* frame was most often identified as a cause (sixteen occurrences) (Table 1). An example is found in an article from Hutchinson discussing the compost facility's impact on city budgeting plans: ""Mainly, when we look at the future of that facility, we will look at the organic waste coming in," DeVries said. If waste is collected throughout McLeod County, the facility would need additional equipment to improve capacity, he added." (Appendix B: H11). The growth of the compost operation is identified as the cause of additional spending. Also of

note, the *growth* frame was associated with a problem once and the *success* frame was associated with a problem in three instances.

Table 1: Total number of instances where the most common frames were identified as a problem, cause, solution, or moral judgement.

Frame	Problem	Cause	Solution	Moral Judgement	Total
Economic costs	29	23	27	1	80
Economic opportunities	0	21	8	1	30
Growth	1	16	13	0	30
Success	3	6	8	8	25
Total	33	66	56	10	165

The *success* frame had more instances of being associated with a moral judgement than any other frame. An example is found in an article from Fridley discussing county efforts to increase recycling, including composting food waste, when the County Board discusses the county's relationship to the Minnesota Waste Wise Foundation: ""We are looking forward to continuing the relationship," said Commissioner Jim Kordiak, who chairs the board's Recycling and Resource Solutions Committee, which recommended the contract extension. "We have been happy with the outcomes."" (Appendix B: F1). In this example, success is apparent in the county's plan to extend the contract. Commissioner Kordiak's positive review of the Minnesota Waste Wise Foundation, without identifying the foundation as a problem, cause, or solution, is a moral judgement of the organization. When the reason for a success was vague, the success frame was identified as a moral judgement, as seen in this example where the "outcomes" that Commissioner Kordiak is happy with are unidentified.

The findings presented in Table 1 offer further insight not only into which frames these newspapers utilize, but how the frames function in relation to the article's story. That the four frames identified in the greatest number of articles are presented as solutions more often than problems is evidence of a larger trend in how these newspapers frame the local curbside food composting programs.

Discussion

Between Fridley and Hutchinson the six frames that stood out were *economic costs*, *economic opportunities*, *growth*, *success*, *community pride*, and *ecological advantages*. The first were *economic costs* and *economic opportunity*. As two of the frames mentioned most frequently, it is apparent that the economics of composting operations were a focus of articles in both towns. It is unsurprising that *economic costs* was the frame used with the most frequency and found in the greatest number of articles. There is substantial evidence that economic frames, both costs and benefits, are widely utilized in articles about environmental science and across disciplines (Atanazova, 2019; Bendix & Liebler, 1999; Bonfadelli, 2010; Boydstun et al. 2014; Emeka, 2020; Habib & Hinojosa, 2016; Schweinsberg et al., 2017; Stecula & Merkley, 2019). The cost or benefit association depends on the issue. In instances where both frames were identified, some scholarship has shown the *economic costs* frame to be more frequent than the *economic benefit* or *opportunity* frame (Delshad & Raymond, 2013). Of note, in Fridley *economic costs* were identified as a solution in nearly half of occurrences while in Hutchinson nearly half of *economic costs* frames were identified as a problem. There was little difference in the frequency the *economic costs* frame was identified as a cause between Fridley and Hutchinson. This trend of *economic costs* problems balanced with *economic costs* solutions or opportunities has also been found at the national level in a study of three national papers in the U.S. (Stecula & Merkley, 2019).

However, *economic opportunity* was mentioned much more in Hutchinson than in Fridley. It appears that Fridley saw *economic costs* as something to be solved by relying on state resources, while Hutchinson approached costs as something to be offset by selling compost. Further research is necessary to understand why each community approached the economic burden of starting a city-wide curbside food composting program differently. One possibility is timing. Fridley's curbside pickup operation began in 2018 while Hutchinson's began in 2001. In 2014 the Minnesota Legislature increased the state-determined recycling goal for the seven-

county metro area from 50% to 75% of mixed MSW (MMSW) by 2030 (Minnesota Pollution Control Agency, 2019). This included Fridley in Anoka County, but excluded Hutchinson in McLeod County where only 35% of MMSW is required to be recycled by 2030. Increased state pressure may have also increased opportunities for state financial assistance, reducing motivation to consider composting as an economic opportunity. The differing relationship to the State of Minnesota is further reflected by the *state requirement* frame being the second most frequent frame in Fridley and not occurring at all in Hutchinson (Figure 4). Since all counties in Minnesota must recycle a portion of their MMSW by 2030, it was anticipated that this *state requirement* frame would be present in articles from both communities (Minnesota Pollution Control Agency, 2019). This frame has important implications for understanding the sustainability attitudes of politically conservative communities, because local governance and independence from state and federal governments is a cornerstone of conservative values (Goren, 2005; Hanson et al., 2019). This value is evident in Minnesota in a Pew Research Poll that found 83% of conservatives in the state prefer smaller government and fewer services to a larger government and more services (Pew Research Center, 2014). The reason for the sharp contrast between the presence of the *state requirement* frame in Hutchinson and Fridley is unclear and requires further examination. *State involvement* was mentioned with an equal level of frequency in Fridley and Hutchinson, suggesting there is a difference between the saliency, or perhaps palatability, of state regulations compared to accepting state finances and resources.

Growth, *success*, and *community pride* are all frames that can be grouped under the umbrella of community. They all have positive connotations and, since *growth* and *success* are in relation to a community project, they contribute to a sense of community well-being. *Growth* was the last prominent frame found in relatively equal amounts in both Fridley and Hutchinson (Figures 3 and 4). In this case it was identified as growth of the program, however other studies examining the framing of sustainability in newspapers have identified growth in an economic context (Lewis, 2000; Leung et al., 2018). This frame merits further consideration because of its relationship to other community oriented frames and also because growth is a type of change. News media traditionally covers events or changes more than repetitive occurrences (Bonfadelli, 2010). “New” is one of the expectations of news. *Growth* may be a common frame not because of any association with composting programs but because of its popularity as a topic of news on any subject.

The *success* and *community pride* frames were closely related and unexpected. Both occurred more frequently in Hutchinson than in Fridley. Neither were found to be common frames in other studies about sustainability. A study about sustainability discourse in India found an *exemplary* frame, where sustainability success stories were represented in newspapers (van de Rijit et al., 2016). Newspapers highlighted projects that were exceptional successes in order to, according to van de Rijit et al., encourage public support for similar projects (2016). However, other reports of *success* as a frame of sustainability programs are lacking. An initial success causing a cascade of successes has been documented in collective political actions, such as signing petitions (van de Rijt et al., 2016). The long-term viability of a project when a community initially recognizes its success should be further studied, especially in the context of mobilizing communities around environmental initiatives. In the case of Hutchinson, the question remains if the *success* frame encouraged greater public support for the composting program.

The true contribution of the finding that *growth*, *success*, and *community pride* were all prominent frames in Hutchinson, and that *growth* was prominent in Fridley as well, is in the connection to politically conservative values. Moral foundations theory states there are five different moral foundations: harm/care, fairness/reciprocity, ingroup/loyalty, authority/respect, and purity/sanctity (Graham et al., 2009). Messages surrounding the need for environmental policy generally appeal to the moral foundation of harm/care, a foundation liberals respond to more than conservatives (Feinberg & Willer, 2013). However, studies show conservatives are more likely to support climate change mitigation if it is framed in the moral foundations they rely on, specifically purity/sanctity and ingroup/loyalty (Feinberg & Willer, 2013). Ingroup/loyalty can be identified in the frames of *growth*, *success*, and *community pride* where *growth* and *success* are in relation to community programs. *Growth* and *success* in other contexts may refer to an individual, but in the context of these articles about community composting operations the growth and success of these programs is based on the involvement of the entire community. It is unclear whether these frames are found in the newspapers of Fridley and Hutchinson because the communities they serve are politically conservative or because these are local papers that report on community programs. However, the relative lack of antagonism towards composting reported in these communities and represented by the lack of articles containing the *community concerns*

frame suggests further research should be done on the relationship between community supportive frames in conservative media and acceptance of sustainability initiatives.

As many other studies have found, the *ecological advantages* frame was not frequently identified (Leung et al., 2018; Peters et al., 2018). Although environmental-related frames have been found to be more prominent in articles about some subjects, such as hydraulic fracturing, than economic considerations (Habib & Hinojosa, 2016), this is not the norm. The results of this study agree with the bulk of literature, that ecological frames are less frequently observed than economic frames. In this case, not only were ecological frames identified less than economic frames, they were also less common than community oriented frames.

This study is limited in that it is a case study and its findings can only be applied to Fridley and Hutchinson, Minnesota. It is further constrained by the methods implemented. An analysis of frames in newspapers does not examine the thoughts of local community members. The sources in the articles are primarily the author and government officials or bureaucrats who possess extensive knowledge of the composting operations. This study cannot determine if these frames are reflective of a larger narrative in the general public or if they are specific to the views of the news outlets and elites. However, this study provides insight into how local newspapers in these communities frame composting programs which is one component of how the public and policy makers perceive composting programs.

The findings of this study contribute to the body of evidence that environmentally sustainable programs can be discussed in non-environmental terms. Fridley and Hutchinson are examples of politically conservative communities that implemented curbside food composting, a program many politically liberal communities have yet to pursue. The efforts of Fridley and Hutchinson were motivated and supported by the state of Minnesota but required buy-in at the local level. If actions speak louder than words, Fridley and Hutchinson are leaders in environmental sustainability. This study further contributes to evidence suggesting that political conservatives may be more responsive to environmental sustainability initiatives presented in terms of the economy and local community well-being, rather than the harm/care messaging typically used when discussing climate change (Feinberg & Willer, 2013).

Future research is needed to understand how the frames identified here reflect the views of the people of Fridley and Hutchinson, how food composting is framed in other communities and at the national and international level, if composting food waste is an apolitical issue, the

views of policy makers towards curbside food waste composting programs, and the relationship between state goals and local programs. This study has laid the groundwork for further scholarship about the success of Minnesota's composting efforts and similar programs across the country to better understand why communities choose to compost and how they may be encouraged to compost food waste in the future.

Appendix A: Frame Definitions

- Agreement: When multiple individuals or groups support the same decision. Typically identified by the word “unanimous” in association with a vote by a governing body.
- Challenges: Difficulties that aren’t human made and are unavoidable. Includes flood planes, fires, and rain. Identified by words such as “battled” and “destroyed” in association with unavoidable obstacles.
- Choice: An option for citizens. Always for the citizens, generally new and always voluntary. “New”, “voluntary”, and “control” are key words used to identify this frame.
- City-owned: The compost operation, equipment, or land is owned by the city. Most often identified with the phrase “city-owned”.
- Community concerns: Any issue that a citizen (not a government official or professional associated with the composting operation) has with composting in general or a specific operation. This includes, but is not limited to, odor, flies, traffic, lights, and new construction.
- Community cooperation: When the community (not a governmental body or an organization directly involved in the composting operation), displays support for the composting program either verbally or by participating in the program. Identified with phrases including “working with” and statements of residents doing a good job.
- Community improvement: A new, additional benefit to the community. Providing a service that was not previously available. Identified through phrases including “benefit to the community”, “to better serve residents”, and “provide more service to the community”.
- Community pride: Speaks to the idea that the residents, local organizations including businesses, and the local governments are necessary to the success of the composting operation. Or, may highlight the uniqueness of the composting facility and it’s superiority to those in other communities. May express a desire for the community to keep up with other cities, counties, or state goals. Generally identified through a comparison that either favorably portrays the local community and composting operations or that recognizes the community could achieve its full potential. Identified by praise, either to the community, composting facility, or residents in general, and phrases such as “the only community”.

- Comparison to recycling: When composting is compared to established recycling programs.
- Ease- citizens: Discussion of making the composting process more accessible to citizens. Seen in extending hours of operation and in phrases such as “user-friendly”.
- Ecological advantage: A benefit to the natural environment. For example, “improves soil” sometimes associated with reducing waste, may also simply state that composting is beneficial for the environment.
- Economic costs: Stating how much the county is spending on the composting operation, how much equipment costs for the operation, or how much residents pay for the service.
- Economic issues: Concerns about the management of finances. Not an issue of spending directly, but an issue of accounting for spending.
- Economic opportunity: The potential economic benefits of the composting operation, to either the government, the operation, or residents. A new potential revenue stream.
- Elite concerns: Government officials questioning the composting operation, expressing their concerns.
- Feasibility: Of the operation. Concerning the ability of the site to process the waste or concerning the relationship between the composting operation and the city.
- Growth: Establishment of new programs, acquisition of new contracts, expansion of facilities.
- Management: Relating to how the composting operation is managed in terms of employee responsibilities, workload, and county oversight.
- Reducing trash: The idea of reducing the amount of waste that is sent to landfills by composting some of the waste.
- State involvement: The state government contributing to the composting operation, sometimes associated with the state requirement.
- State requirement: The state’s goals, targets, or requirements to increase recycling, including composting, and to reduce the amount of waste disposed of in landfills.
- Success: The composting system operates at a high level of functionality. Often identified by the word “success”.
- Support: Citizens, businesses, government officials, or other groups voicing support of or acting in support of the composting operation.

- Value of organics: The generally vague understanding that compost is valuable and composting should be pursued. Not explicitly connected to any ecological advantages.

Appendix B: Local News Articles Included in Study (cited in chronological order by town)

Fridley:

F1: Bodley, P. (2016, January 1). Anoka County contract aims to enhance recycling in business sector. *Sun Focus*. https://www.hometownsource.com/sun_focus/news/local/anoka-county-contract-aims-to-enhance-recycling-in-business-sector/article_f5983b35-bf18-5828-98f1-0fe86c824270.html

F2: Bodley, P. (2016, January 12). More money for county's non-residential recycling program. *ABC Newspapers*. https://www.hometownsource.com/abc_newspapers/news/local/more-money-for-countys-non-residential-recycling-program/article_bae6aeff-4cb9-5c01-8d29-8bebc3e1b913.html

F3: Bodley, P. (2016, February 6). New operator for Anoka County's compost facilities. *ABC Newspapers*. https://www.hometownsource.com/abc_newspapers/news/local/new-operator-for-anoka-county-s-compost-facilities/article_39b32234-6358-58e8-8b3e-ac61c4412339.html

F4: Community Contributor. (2016, May 23). Organics are a resource, not a waste. *ABC Newspapers*. https://www.hometownsource.com/abc_newspapers/news/local/organics-are-a-resource-not-a-waste/article_f96648a2-cc4a-575c-b930-918ea0dc187a.html

F5: Lenhart, S. (2016, November 8). Fridley Council holds hearing on solid waste disposal, recycling collection. *Sun Focus*. https://www.hometownsource.com/sun_focus/news/local/fridley-council-holds-hearing-on-solid-waste-disposal-recycling-collection/article_b80525dc-24e3-56af-99cf-b7bfd9a437b5.html

F6: Bodley, P. (2017, March 15). Free yard waste drop-off pilot program. *Sun Focus.* https://www.hometownsource.com/sun_focus/news/local/free-yard-waste-drop-off-pilot-program/article_a252e379-b304-5013-99f5-2564bcfbed04.html

F7: Bodley, P. (2017, May 19). County wants to buy property to expand compost site. *ABC Newspapers*. https://www.hometownsource.com/abc_newspapers/news/local/county-wants-to-buy-property-to-expand-compost-site/article_bff17bcf-ede6-53bb-b7c4-1a09fb6e2e62.html

F8: Lenhart, S. (2018, February 6). Fridley approves curbside organics collection contract. *Sun*

Focus. https://www.hometownsource.com/sun_focus/community/fridley/fridley-approves-curbside-organics-collection-contract/article_9d6c93ea-0858-11e8-b261-7377e03635d0.html

F9: *Sun Focus*. (2018, March 29). Anoka County compost sites open for extended hours April 1. https://www.hometownsource.com/sun_focus/community/fridley/anoka-county-compost-sites-open-for-extended-hours-april-1/article_326d336a-3369-11e8-9986-43b92e0c9ebc.html

F10: *Sun Focus*. (2018, April 13). Organics collection now available in Fridley. https://www.hometownsource.com/sun_focus/community/fridley/organics-collection-now-available-in-fridley/article_f735a80c-3f4f-11e8-a7c4-e703a1672a05.html

F11: Anoka County launches app to promote recycling. (2018, July 19). https://www.hometownsource.com/anoka-county-launches-app-to-promote-recycling/article_509b4684-8ac5-11e8-8453-432e6e004f44.html

F12: *ABC Newspapers*. (2018, November 28). Winter hours begin Dec. 1 at Anoka County compost sites. https://www.hometownsource.com/abc_newspapers/free/winter-hours-begin-dec-1-at-anoka-county-compost-sites/article_efa27268-ef54-11e8-a7c2-731fe6e77627.html

F13: *Forest Lake Times*. (2019, March 22). Recycling award nominations being accepted. https://www.hometownsource.com/forest_lake_times/recycling-award-nominations-being-accepted/article_02b7223c-4b66-11e9-8304-4b81879d8619.html

F14: Lenhart, S. (2019, April 22). Fridley Council renews organics collection contract. https://www.hometownsource.com/fridley-council-renews-organics-collection-contract/article_baba5614-6494-11e9-b511-b72a68837260.html

F15: *ABC Newspapers*. (2019, November 1). Recycle your used pumpkins in Fridley. https://www.hometownsource.com/abc_newspapers/community/recycle-your-used-pumpkins-in-fridley/article_a33661aa-fc19-11e9-9b1e-1fb192694293.html

F16: Bodley, P. (2019, December 14). Anoka County Board OKs $39.3 million capital improvements budget. *ABC Newspapers*. https://www.hometownsource.com/abc_newspapers/community/anoka/anoka-county-board-oks-39-3-million-capital-improvements-budget/article_0e20d642-1ddc-11ea-91fd-379b1fe7ac1b.html

Hutchinson:

H1: Davis, T. (2000, August 16). Trash collection changes will aid compost facility. *Hutchinson Leader*. http://nl.newsbank.com/nl-search/we/Archives

H2: Davis, T. (2000, November 16). Hidden dump at compost facility could hit city with $50,000 bill. *Hutchinson Leader*. http://nl.newsbank.com/nl-search/we/Archives

H3: Davis, T. (2001, March 20). Upgrades, upkeep in smaller city departments add up. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H4: Davis, T. (2001, April 3). Ready for our refuse. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H5: Davis, T. (2001, April 24). Garbage, sewer talk top City Council's agenda. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H6: Davis, T. (2001, April 26). Compost program takes off. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H7: Davis, T. (2001, May 17). City to host recycling tour. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H8: Davis, T. (2001, June 14). County reps honored at compost facility tour. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H9: Otto, J. (2001, October 8). Residents air concerns over compost site. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H10: Otto, J. (2001, December 13). Compost operations booming. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H11: Davis, T. (2002, January 10). City outlines plan to spend $51.3 million over next five years. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H12: Davis, T. (2002, February 12). Trip needs council approval. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H13: Davis, T. (2002, August 29). Compost operations gear up. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H14: Davis, T. (2002, December 3). City sees dollars in dirt. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H15: Hanneman, D. (2003, April 24). City closing in on $3.5 million compost deal. *Hutchinson*

Leader. http://nl.newsbank.com/nojavascript.html

H16: Davis, T. (2003, July 31). Compost turner catches fire. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H17: Davis, T. (2003, September 11). City OKs annexation of 26 acres in Hassan Valley Township. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H18: Davis, T. (2003, October 30). Council member calls for changes at compost plant. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

H19: Davis, T. (2003, December 2). City-owned compost plant attracting strong business. *Hutchinson Leader*. http://nl.newsbank.com/nojavascript.html

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