

BOARD OF COUNTY COMMISSIONERS
SARPY COUNTY, NEBRASKA

RESOLUTION UPDATING THE SARPY COUNTY INTEGRATED SOLID WASTE
MANAGEMENT PLAN

WHEREAS, the State of Nebraska has enacted the Environmental Protection Act and the Integrated Solid Waste Management Act (the "Act"), which, at Neb. Rev. Stat. §13-2031 (Reissue 2007) requires the adoption of a integrated solid waste management plan as defined in the Act; and,

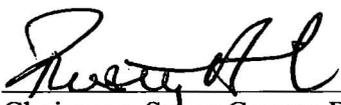
WHEREAS, Sarpy County had previously adopted and filed with the Nebraska Department of Environmental Quality; and,

WHEREAS, an update to the integrated solid waste management plan as allowed by the Act, has been proposed and is on file with the Sarpy County Clerk, and is necessary to reflect changes in local needs and conditions since the adoption of the integrated solid waste management plan.

NOW, THEREFORE, BE IT RESOLVED by the Sarpy County Board of Commissioners that the Integrated Solid Waste Management Plan Update, a copy of which is on file with the Sarpy County Clerk, is hereby adopted.

BE IT FURTHER RESOLVED that said Integrated Solid Waste Management Plan Update shall be submitted to the Nebraska Department of Environmental Quality for approval.

The above and foregoing Resolution was duly approved by a vote of the Sarpy County Board of Commissioners at a public meeting duly held in accordance with applicable law on this 21st day of August, 2012.



 Chairman, Sarpy County Board



 Sarpy County Clerk

Sarpy County Board of Commissioners

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To: Sarpy County Board

From: Mark Wayne, County Administrator

RE: Integrated Solid Waste Management Plan Update

The City of Omaha, Douglas and Sarpy County's recently completed an update to the Integrated Solid Waste Management Plan originally completed in 1994. This plan is required by the Nebraska Department of Environmental Quality and is meant to serve as a guide for waste management practice for the next 20 years. The Plan is 500 pages and can be viewed on the County web site. I have included the Table of Contents, Plan Summary and Section 1- Introduction for your review.

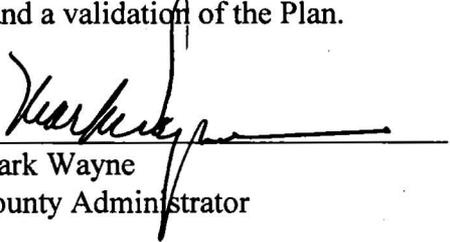
John Dempsey, from HDR prepared the Plan and will attend the August 21st Board meeting to provided an overview of the Plan and answer any questions. The Board must adopt the Plan as does the City of Omaha and Douglas County.

The Plan does not require any formal action on the part of the County but is merely a guide for the future handling of solid waste.

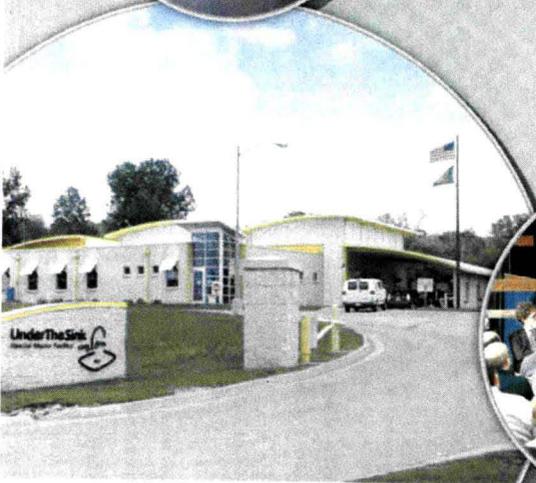
I recommend adoption of the Plan. The Plan has taken many months to prepare and included public input at advertised meetings and from on-line comments. The adoption process by the local jurisdictions is another opportunity for public comment and a validation of the Plan.

August 15, 2012

MW/lt

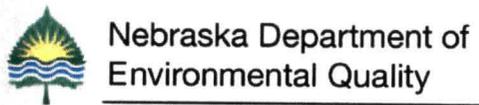


Mark Wayne
County Administrator



Integrated Solid Waste Management Plan Update

June 2012



"The preparation of this report, document, etc. was financed in part through grants from the state of Nebraska."



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 - C4 Comment from Public Meetings

ACKNOWLEDGEMENTS

The following identifies key project participants involved in preparing this Integrated Solid Waste Management Plan Update.

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Nebraska Department of
Environmental Quality



The Nebraska
Environmental Trust
Preserving Natural Resources for Future Generations

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PLAN SUMMARY

This Integrated Solid Waste Management Plan Update (ISWMP Update) was prepared to guide the development of solid waste management systems, facilities and programs for participating communities and political jurisdictions for the period from 2012 through 2032 (the "Planning Period").

The ISWMP Update began with a summarization of existing solid waste practices and projection of future needs, an evaluation of waste management programs and alternatives specific to current and projected future needs, and the development of strategy options and general costs. Section 5 of this ISWMP Update includes general and specific recommendations to guide future solid waste systems, facilities, and programs and a schedule of action for implementation of key recommendations. The options and strategies presented will progressively move the integrated solid waste management system along the waste management hierarchy from current diversion and disposal practices toward increasing degrees of diversion (waste minimization, reuse, recycling/composting) and environmental stewardship based on considerations of technological and economic factors. The planning effort identified five key focus areas, which consisted of:

- Identifying sustainable measures for funding solid waste management under current and future conditions
- Identifying opportunities for waste minimization and capturing of the resource value within the waste
- Developing an ongoing system to efficiently track waste generation, diversion and disposal to better monitor the planning goals
- Improving end markets for recyclables
- Improving community involvement and education

1.1 Purpose and Background

In 1994, MAPA prepared an ISWMP ("1994 ISWMP") to determine how Douglas, Sarpy, Washington, and Cass Counties in Nebraska and Pottawattamie County in Iowa (the "Region") would handle its solid waste for the subsequent 20 years. In 2003, MAPA prepared a Solid Waste Management Plan Update ("2003 Plan Update") for Douglas and Sarpy Counties, which among other updates, incorporated a household hazardous waste ("HHW") management facility, now known as UnderTheSink, into the 1994 ISWMP.

Since the development of the 1994 ISWMP, the management system has matured and greater diversion of waste is being achieved through various public and private initiatives. Those changes, along with the pending expiration of the planning timeline identified in the 1994 ISWMP, have led to this ISWMP Update.

The ISWMP Update was prepared in two phases. The first phase was focused on analyses designed to update historic information on waste generation and waste management practices, to prepare projections of needs for the next 20 years, and to

evaluate options and possible alternatives for future consideration. The second phase began with a public involvement program designed to gather input before this ISWMP Update was drafted.

The public involvement process was designed to provide opportunities and several mechanisms for public participation and input, including the following:

- An in-person open house meeting
- An online self-directed open house meeting
- Surveys: one for residents and one businesses
- An open comment form

1.2 Goals, Objectives and Needs

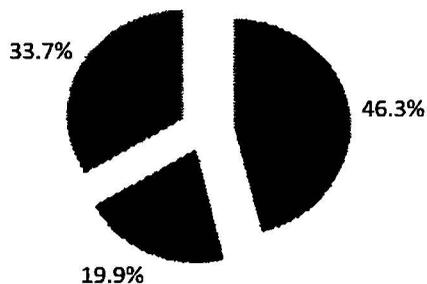
An initial part of the planning process was to update the goals and objectives contained in the 1994 ISWMP. These updated goals and objectives served as guidance for this ISWMP Update. The goals and objectives are included in Section 1.3.1.

Also as part of the first phase of activities, a Needs Assessment (summarized in Section 2) was prepared that focused on the following:

- Defining the current solid waste management practices.
- Describing currently available diversion systems, facilities and programs.
- Quantifying waste generation, material diversion and disposal.
- Assessing future disposal capacity needs.

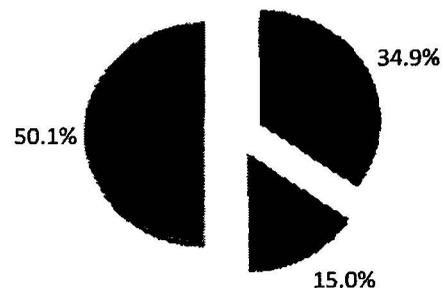
Figure S 1 – 2010 Waste Disposal and Diversion, by Percentage

Waste Management (Excluding Concrete, Asphalt & Tires)



■ Planning Area Landfills ■ Est Export Waste
■ Est Diversion

Waste Management (Including Concrete, Asphalt & Tires)



■ Planning Area Landfills ■ Est Export Waste
■ Est Diversion

As shown in Figure S 1, excluding concrete, asphalt and tires, it is estimated that approximately 34 percent of the waste stream is diverted from disposal by reuse, recycling, composting or related techniques, 20 percent is exported to out-of-county landfills and the remaining 46 percent of the generated waste is disposed in Planning Area landfills. Tires are banned from Nebraska landfills. Since 1994, processing facilities have been developed as commercial business as an alternative to landfilling for asphalt and concrete; these business grind and process and estimated 610,000 tons per year of concrete and asphalt for multiple non-disposal uses. If the all the concrete, asphalt and tires currently diverted from Planning Area landfills are included in the total waste generation it is estimated that 50 percent of the total waste stream is diverted by reuse, recycling, composting or related techniques, 15 percent is exported to out-of-county landfills, and the remaining 35 percent of the generated waste is disposed in Planning Area landfills (see Figure S 1).

When the Sarpy County Landfill closes (prior to 2015), the Douglas County/Pheasant Point Landfill will be the only remaining municipal solid waste ("MSW") landfill in the Planning Area. Under the current management practices (status quo) the Pheasant Point Landfill has 92 years of projected remaining life, which significantly exceeds the 20 year Planning Period for this ISWMP Update. As such, no need is forecasted for an additional MSW landfill during the Planning Period. Therefore, the Planning Area will only need to monitor changes in disposal patterns or in waste disposal legislation related to special waste categories such as construction and demolition waste (C/D), combustion ash residues (CCR) or biosolids to verify that they do not significantly impact the remaining MSW landfill life.

1.3 Technical Evaluations

The planning efforts were guided by representatives of the City of Omaha, Douglas County and Sarpy County (the "SW Steering Committee"). The SW Steering Committee identified a number of issues to be addressed or evaluated further in the initial phase of the ISWMP Update planning process. In order to address these issues, HDR Engineering, Inc. (HDR) was retained to prepare a series of technical memoranda (summarized in Section 3) to identify options and alternatives, address issues and provide recommendations for further consideration and inclusion in this ISWMP Update. The topics of these technical memoranda are as follows:

- Solid Waste Management Program Funding (Appendix B-1)
- Waste Tracking (Appendix B-2)
- Zero Waste and Waste Minimization (Appendix B-3)
- Energy Recovery Program Options Assessment (Appendix B-4)
- Public Education and Policy Initiatives Appendix B-5
- Market Analysis (appendix B-6)

The principal areas of concern associated with program and options evaluated and recommended center around sustainable finances and funding, include the following:

1. Increases cost of services with no change in current programs (status quo)

2. Funding for changes and possible new programs
3. Sources of funding or funding options available

Waste tracking evaluations focused on mechanisms that could be used to better determine the quantities of waste materials currently diverted, exported and recycled, and in order to monitor impacts on the ISWMP goals and objectives. It is not currently anticipated that totally voluntary reporting efforts will provide this information.

Waste minimization evaluations focused on the variety of alternatives that could be implemented by the Planning Area members to reduce the quantities of waste sent to disposal in landfills. It is anticipated that the greatest level of diversions can be achieved by:

- Maintaining existing programs
- Ensuring recycling services are available to all residents and business in the Planning Area
- Providing new programs that target underserved diversion opportunities (e.g., increases commercial, institutional and industrial waste recycling, glass recycling)

It is also important to note that while many landfill diversion and waste reduction options are considered technically viable, they may not be considered economically feasible, based increased costs.

With the anticipated closing of the Sarpy County Landfill and anticipated need to relocate the City of Omaha's existing compost facilities, it is also important to define how the services provided at these facilities will be replaced. Additionally, with the closure of the Sarpy County Landfill (prior to 2015) there is may be a need to provide new facilities to handle yard waste, brush/wood, banned wastes and recyclables currently diverted through this facility.

The energy recovery, via waste-to-energy or similar conversion facilities, evaluation focused on major factors that would need to be addressed to make this technology viable. Energy recovery technologies have significantly higher costs for disposal than the current landfill and transfer station alternatives. If classified as a renewable energy source, it would likely see a favorable increase in the economics of such a facility. In addition, whether and/or how carbon dioxide (CO₂) emissions are regulated will also affect the viability and cost effectiveness of a facility. Continued monitoring and review of economics and regulatory factors related to feasibility is recommended as a strategy in the ISWMP. The public education evaluation focused on existing programs and various mechanisms to increase public education. Public education is (or can be) a key tool in supporting proper management of wastes destined for disposal and in encouraging diversion. Therefore, fully funding and supporting a "Source Reduction Leader" (staff position) can go a long way to aid in implementation of the source reduction and recycling components of the ISWMP Update. The respondents to the limited public survey (Appendix C3) also suggested that there was a need for additional educational outreach.

The policy initiatives evaluation focused on options and definitive actions by the governing bodies in the Planning Area necessary to provide the funding mechanisms, implement programs and options identified in the ISWMP, and to ensure compliance with and realization of the Plan goals and objectives.

The market evaluations defined current management practices and options for marketing recovered materials. Recovered materials such as papers, glass, metals and plastics are currently sent to brokers, which aggregate and ship materials to regional, national or international end users. Markets and prices for recovered materials can be volatile and are influenced by supply and demand, as well as other factors such as material quantity and quality. Therefore, the Planning Area should seek opportunities to provide local markets to improve and stabilize material markets and revenues.

With emphasis on increasing waste diversion (reduced quantities disposed by landfilling), as well as other changes to enhance current programs, added costs may result and funding sources will need to be addressed.

The above considerations should not be viewed as discouraging efforts to reduce, reuse or recycle/compost. They are meant to suggest that with such new or expanded programs, consideration needs to be given to funding for these programs, especially where the programs themselves do not generate a net positive cash flow.

1.4 Strategy Development

Based on the goals and objectives, needs assessment, and technical evaluations, the Strategy Development section (Section 4) of this ISWMP Update addresses optional programs and general strategies that were considered in the final plan development.

Consistent with the 1994 ISWMP, several alternative strategies were developed. Alternative strategies were developed for each Planning Area member to reflect their individual characteristics and needs, as well as opportunities for regional cooperation.

There is a wide array of system, facility and program options that could be considered to further reduce the percentage of the total waste generation that is currently sent to disposal. As these programs are better defined and integrated into the Plan, more detailed cost and funding evaluations may need to be considered. Such evaluations will need to be program and situation specific and are beyond the scope of this planning effort.

The solid waste management strategies and options are presented in the following groupings:

- **Common Elements** for all planning jurisdictions
- **Alternative Strategies** available to each Planning Area jurisdiction

1.5 Action Plan

To provide maximum flexibility to the counties and municipalities in the Planning Area, no specific option has been selected by Douglas and Sarpy Counties or the City of Omaha. To implement the Plan goals and objectives, specific actions must be taken by

the governing bodies of the appropriate cities and/or counties in the Planning Area. Section 5 of the ISWMP Update addresses actions and implementation considerations. In selecting or approving a change to the current management practices it was recommended that the following be considered:

- Evaluate all systems, facilities and programs to verify that they are consistent with the requirements in state and local laws.
- Evaluate all systems, facilities and programs in terms of their ability to control environmental and economic risks.
- Evaluate future available waste management systems, facilities and program options using the 2012 Plan goals and objectives, strategies, and action plan(s).
- Evaluate new systems, facilities and programs based on technical feasibility, socio-political acceptability and environmental/economical sustainability.

The action plan in Section 5 identifies specific recommendations. These recommendations are summarized below.

1.5.1 General

- Form a joint committee or task force consisting of representatives from the Planning Area members to evaluate funding mechanisms required to implement the Action Plan and Implementation Plan. The committee would also oversee, monitor and annually prepare a report on progress toward achieving the 2012 Plan's goals and objectives for submittal to elected officials and key decision makers.
- Maintain liaison and regional cooperation with other local governments to identify common problems that may have common solutions across jurisdictional boundaries.
- Create, fill and fund a Source Reduction Leader position or similar title to expand existing source reduction programs and implement new community education and awareness programs with the following ultimate goals: i) increasing resource conservation; ii) reducing the percentage of the waste directed to disposal; and iii) reducing the toxicity of the waste.
- Encourage the development of local markets for recovered materials and manufacturing of end products made from these materials.
- Evaluate and adopt changes to purchasing policies used in Planning Area governmental procurement programs to encourage waste reduction, recycling and the use of recycled products.
- Develop necessary ordinances and resolutions to implement the recommended actions and provide adequate levels of funding to ensure that actions to be undertaken are sustainable.
- Seek state support, legislative changes and other approvals that will support financially sustainable solid waste management systems, facilities and programs.

- Pursue funding structures that would allow waste generators and the public to see the value of conservation, reduction, management costs and outcomes.
- Pursue mechanisms to create incentives to expand recycling collection services to the commercial sector.

1.5.2 Organizational Framework

- Coordinate solid waste management activities and public education programs throughout the Planning Area to avoid unnecessary duplication of services, facilities and programs, and potential conflicts.
- Implement appropriate organizational frameworks and structures that allow Planning Area members to better manage waste management and disposal systems, facilities, and programs, including those necessary to capture the inherent value and resource value of solid waste in order to provide sustainable funding and integrated resource conservation and management systems.
- Establish institutional arrangements for local governments within the Planning Area to cooperate on the use of solid waste management systems, facilities and programs.
- Continue to support public-private partnerships that provide solid waste management systems, facilities and programs that are consistent with the 2012 Plan but maintain control over environmental and economic risks to the Planning Area members.
- Develop regional web-based public information linkages to enhance communication on common solid waste management needs and opportunities.
- Implement appropriate organizational frameworks and structures to allow units of government to better:
 - Manage imports and exports of solid waste from the Planning Area and ensure sound, sustainable, environmentally beneficial programs.
 - Capture data and monitor management, diversion and disposal programs to assess their effectiveness.

1.5.3 Source Reduction

- Promote source reduction programs, which minimize the amount of waste that must be managed by the post-consumer programs.
- Expand communications to the public, businesses and communities on the benefits of resource conservation and environmental stewardship as they relate to solid waste.
- Develop and support expanded and coordinated public education programs focused on waste reduction, diversion and environmentally appropriate solid waste management alternatives.

- Implement procurement policies and construction specifications that encourage the use of recycled materials and waste minimization by all governmental units and other institutions throughout the Planning Area.
- Encourage the development of local private enterprises that use recovered or recyclable materials and create jobs.
- Promote "Bag No More" and "Don't Bag It" type programs for self-management of yard waste, including grass clippings and leaves.

1.5.4 Recycling

- Identify and pursue new programs that target underserved diversion opportunities (i.e., increases commercial, institutional and industrial waste recycling), and ensure recycling/diversion services are available to all residents and businesses in the Planning Area.
- Identify and pursue programs to expand recyclable materials programs and facilities to ensure that recycling services are available to all single-family residences and multi-family units.
- Encourage local public and private economic development entities to assist in bringing to the community new or expanded recycled and recovered material markets or manufacturing of end products made from recycled and recovered materials.

1.5.5 Composting and Organic Waste Management

- Evaluate and, if appropriate, provide services, facilities and programs for yard waste, including grass clippings and leaves, generated by households and businesses.
- Evaluate the impacts of possible closing and relocation of the existing governmentally operated yard waste composting sites, and develop a plan to ensure continued availability of large-volume yard waste composting programs.
- Evaluate separate collection and composting or anaerobic digestion of vegetative food waste from households, grocery stores, hotels and restaurants, as appropriate.

1.5.6 Landfilling (Municipal Solid Waste Disposal Area)

- Monitor regulatory changes associated with management of biosolids and CCR regarding their potential impact on permitted disposal capacity in the Planning Area.
- Monitor the effects of changing management practices on the overall life of the Planning Area landfill, including effects of waste exports, competing facilities, changes in diversion practices and changes in the types and quantities of materials disposed and diverted.

1.5.7 Waste Transfer and Processing Facilities

- Provide for efficient transportation and handling of solid waste, recovered materials, processed recyclables, compostable materials and compost products.
- Confirm the need to implement transfer stations and processing facilities to capture and utilize the value of solid waste, to provide an integrated resource conservation and management system, and to ensure safe, sound, environmentally responsible waste management practices.
- Review and evaluate the need for changes to regulations that would be applicable to facilities sited in the Planning Area.
- Establish transfer station and processing facility monitoring and reporting requirements to ensure waste and recyclable materials are managed in an environmentally sound manner and to provide a better accounting of overall management activities in the Planning Area.
- Evaluate transfer station and processing facility permit applications to ensure that such facilities are consistent with Planning Area goals and program requirements.

1.5.8 Other and Special Wastes

- Continue to pursue systems, facilities and programs to reduce the volume of Other and Special Wastes, including HHW, C/D debris, metals/appliances, e-waste (electronics waste), bulky materials, and used motor oil, that currently require disposal.

1.5.9 Waste Combustion or Thermal Chemical Conversion

- Continue to monitor program options for energy and resource recovery from waste materials and, where economically and technically viable, pursue and implement a program for energy and resource recovery from waste materials. The guidance provided in Appendix B4, Technical Memorandum TM-4 – Energy Recovery – Program Options Assessment, should be used as part of subsequent monitoring and evaluation.

1.6 Implementation Process

The process of implementing the solid waste management systems, facilities and programs described above may consist of a wide array of actions. Such actions may involve some or all of the following:

- Changes in laws, regulations and ordinances.
- Cooperative agreements or arrangements between units of government or private entities.
- Additional studies or evaluation.
- Definitive actions to plan, procure, fund, finance, construct or implement specific recommendations.

- Monitoring and enforcement.
- Communications with residents, businesses, and stakeholders.
- Educational initiatives and promotion of programs and the 2012 Plan's goals and objectives.

A more detailed discussion of implementation considerations is included in Section 5.2.

1.7 Monitoring Mechanism and Updates

There are arrays of variables that affect estimates of future diversion; variables include but are not limited to the following: specific program elements, costs, participation levels, public education and implementation timing. Therefore, it will be necessary to monitor systems, facilities and programs as they are implemented to assess their effectiveness and make appropriate modifications.

Solid waste management is a dynamic activity. For the effective realization of actions recommended in the 2012 Plan it will be necessary to monitor the selected systems, facilities and programs as they are implemented to assess their effectiveness and make appropriate modifications to this 2012 Plan.

In order to monitor the implementation of the 2012 Plan, the following actions need to be taken:

Annual

- Annually identify priority systems, facilities and program changes anticipated in the next 1 to 3 years.
- Annually update and report on the progress achieved in the prior year toward achieving the 2012 Plan's goals and objectives.

Five-year

- Update program options for energy and resource recovery from waste materials.
- As major changes occur, review the 2012 Plan and modify the 2012 Plan to reflect changes in goals, objectives, action items and timetables.

Based on changes, as identified in the annual reviews, certain aspects of the 2012 Plan may need updating. These updates may be driven by individual events, outcomes of implementation activities, changes in regulations or other matters.

Section 1 – Introduction

Specialized terminology used in this 2012 Metropolitan Area Planning Agency (“MAPA”) Integrated Solid Waste Management Plan Update (“ISWMP Update” or “2012 Plan”) is defined when used for the first time. For quick reference, a Glossary of Terms and a List of Abbreviations and Acronyms are located at the front of this document.

1.1 Purpose and Background

In February 1985, MAPA issued a Regional Waste Management Report and Recommendations (the “1985 Recommendations”) for Douglas, Sarpy, and Washington Counties, including the cities of Omaha, Bellevue, and Blair in Nebraska; and Pottawattamie and Mills Counties in Iowa, including the City of Council Bluffs. The 1985 Recommendations concluded that the key to developing a workable plan would be to fix responsibility for management with a specific jurisdictional entity, develop a centralized information base, develop and expand programs of alternative uses of wastes, establish a user fee system for financing waste management, and continue expansion of a broad-based community education program that would increase public awareness of the necessity for solid waste planning. The 1985 Recommendations were summarized in the ISWMP. Following the 1985 Recommendations, a full-time staff position was established at MAPA and funded by a portion of the surcharge collected at the landfills in the Region. This position no longer exists.

The ISWMP contained all information from the 1985 Recommendations in summary form, which represents the culmination of the then current planning process. Technical memoranda were also prepared to support each of the steps during the 1994 planning process.

In 1994, MAPA prepared an Integrated Solid Waste Management Plan (“1994 ISWMP”) to determine how Douglas, Sarpy, Washington, and Cass Counties in Nebraska and Pottawattamie County in Iowa (the “Region”) would handle its solid waste for the subsequent 20 years. The 1994 ISWMP was prepared to guide development of solid waste management programs for participating communities and political jurisdictions. The 1994 ISWMP was completed in October 1994; it was intended to cover the period from 1992 through 2015. The 1994 ISWMP addressed existing solid waste practices and future needs, discussed waste management alternatives, developed strategies and costs, and presented recommendations and a schedule of action.

The 1994 ISWMP was developed to conform to the Integrated Solid Waste Management Act (Nebraska Revised Statutes (Nebr. Rev. Statutes) Chapter 13, Section 13-2001 to 2043) (the “Act”) for Nebraska communities and the Waste Reduction - Recycling Act (Iowa Code, Volume 3, Chapter 455D) for Iowa communities. The 1994 ISWMP largely focused on the requirements of the State of Nebraska because the non-recycled and non-composted waste from Pottawattamie County was expected to be disposed at the Douglas County Recycling and Disposal Facility (“RDF”) throughout the original planning period.

In 2003, MAPA prepared a Solid Waste Management Plan Update (“2003 Plan Update”) for Douglas and Sarpy Counties, which among other updates, incorporated a household hazardous waste (“HHW”) management facility, now known as UnderTheSink, into the 1994 ISWMP.

Starting in 2010, Douglas and Sarpy Counties and the City of Omaha began the process of evaluating changes to their solid waste programs. Working with MAPA, they have determined that a further update to the 1994 ISWMP is appropriate for their service areas before the expiration of the prior planning period. Therefore, this ISWMP Update was prepared. To undertake this ISWMP Update, a Solid Waste Steering Committee (the “SW Steering Committee”) was formed. The SW Steering Committee includes representatives of MAPA, the City of Omaha, Douglas County, and Sarpy County. In supporting the ISWMP Update, the committee focused on the current and anticipated solid waste planning needs in Omaha and in Douglas and Sarpy Counties (the “Planning Area”).

This ISWMP Update is being prepared to guide the development of solid waste management systems, facilities, and programs for participating communities and political jurisdictions for the coming years. Specifically, the ISWMP Update covers the period from 2012 through 2032 (the “Planning Period”). The ISWMP Update began with a summarization of existing solid waste practices and projection of future needs, an evaluation of waste management programs and alternatives specific to current and projected future needs, and the development of strategy options and general costs. Section 5 of this ISWMP Update includes general and specific recommendations to guide future solid waste systems, facilities, and programs and a schedule of action for implementation of key recommendations. The options and strategies presented will progressively move the integrated solid waste management system along the waste management hierarchy from current diversion and disposal practices toward increasing degrees of diversion (waste minimization, reuse, recycling/composting) and environmental stewardship based on considerations of technological and economic factors. Embedded in the principle of environmental stewardship are benefits associated with conservation and preservation of resources, reduction in energy and water usage, and reduction in air emissions (e.g., greenhouse gas (GHG) and carbon).

1.1.1 Solid Waste Types Managed

The entire solid waste stream in the Planning Area is considered in this ISWMP Update. The solid waste streams considered in this ISWMP Update include the following:

- Residential municipal solid waste (“MSW”)
- Commercial waste
- Other wastes, including the following:
 - Industrial and manufacturing process wastes
 - Construction and demolition (“C/D”) wastes
 - HHW
 - Coal combustion residues (“CCR”)

- Wastewater treatment sludge (“biosolids”)
- Special handling and banned wastes

For planning purposes, MSW and commercial waste are assumed to include recyclable materials, yard waste, and similar materials currently being diverted from disposal.

1.1.2 Previous Solid Waste Management Planning

In February 1985, MAPA issued a Regional Waste Management Report and Recommendations (the “1985 Recommendations”) for Douglas, Sarpy, and Washington Counties, including the cities of Omaha, Bellevue, and Blair in Nebraska; and Pottawattamie and Mills Counties in Iowa, including the City of Council Bluffs. The 1985 Recommendations concluded that the key to developing a workable plan would be to assign responsibility for management to a specific jurisdictional entity, develop a centralized information base, develop and expand programs of alternative uses of wastes, establish a user fee system for financing waste management, and continue expansion of a broad-based community education program that would increase public awareness of the necessity for solid waste planning. The 1985 Recommendations were summarized in the 1994 ISWMP. Following the 1985 Recommendations, a full-time staff position was established at MAPA and funded by a portion of the surcharge collected at the landfills in the Region. This position no longer exists.

The 1994 ISWMP contained all information from the 1985 Recommendations in summary form, which represents the culmination of the then current planning process. Technical memoranda were also prepared to support each of the steps during the 1994 planning process.

1.2 Planning Process and Public Involvement

Community involvement was a central component in preparing the 1994 ISWMP as well as this ISWMP Update. In 1994, two committees were formed to guide the planning process for the 1994 ISWMP. The Technical Committee, with representatives from political jurisdictions throughout the Region, directed the planning process. The Advisory Committee—with representatives of businesses, civic groups, and interested individual members of the community—reviewed technical memoranda, provided input on the planning process, and served as the focal point for community dialogue.

For this ISWMP Update, an SW Steering Committee, with representatives from each of the Planning Area members, helped guide the planning process. The SW Steering Committee focused its efforts on updating historic documents and establishing the core aspects of this ISWMP Update, as described below. These documents served as the basis for public involvement (described in Section 4.9) and ultimately the development of this ISWMP Update.

To prepare this ISWMP Update, supplemental analyses were completed. Technical evaluations were conducted by HDR Engineering, Inc. (“HDR”) using input from the SW Steering Committee and data collected from a wide variety of sources. These analyses are documented in a series of technical memoranda, which support the plan development. These technical memoranda were reviewed by the SW Steering Committee, which provided input, changes, clarifications, and direction for completing

this portion of the planning process. Then these technical memoranda were also used for public involvement/dialogue.

Because the 1994 ISWMP included a comprehensive review of many topics and because many of the programs have matured substantially since 1994, this ISWMP Update focuses on specific topics relevant to current and future needs of the Planning Area. The specific topics addressed in the technical memoranda prepared for this ISWMP Update include the following:

- Needs Assessment (see Appendix A)
- Solid Waste Management Program Funding (see Appendix B1)
- Waste Tracking (see Appendix B2)
- Zero Waste and Waste Minimization (see Appendix B3)
- Energy Recovery – Program Options Assessment (see Appendix B4)
- Public Education and Policy Initiatives (see Appendix B5)
- Market Assessment (see Appendix B6)

Consistent with the 1994 ISWMP, the result of the technical evaluations and public involvement process is the Action Plan, which includes recommended actions, an implementation process, and a recommended monitoring mechanism. This Action Plan is presented in Section 5.

Implementation activities that take place after adoption of the final ISWMP Update are recommended to be accompanied by continued monitoring of results. Based on the results, adjustments will be made, as required, to the goals, strategies, and activities to keep them consistent with current conditions and opportunities.

1.2.1 Goals, Objectives, and Needs

An initial part of the planning process was to update the goals and objectives contained in the 1994 ISWMP. This was necessary to recognize existing systems, facilities, and programs as well as the progress that has been achieved since 1994. Throughout the planning process, the goals and objectives were periodically refined to reflect the planning effort. It is intended that the goals and objectives contained in this ISWMP Update will evolve as planning efforts continue and as the elements of the 2012 Plan are implemented. The updated goals and objectives developed for the ISWMP Update are provided in Section 1.3.

The Needs Assessment focused on the following:

- Defining the current solid waste management practices
- Describing currently available diversion systems, facilities, and programs
- Quantifying waste generation, material diversion, and disposal
- Assessing future disposal capacity needs

The results of this Needs Assessment are summarized in Section 2, System Evaluation and Needs Assessment.

1.2.2 Technical Evaluations

In undertaking this ISWMP Update, the SW Steering Committee identified a number of issues that needed to be addressed or evaluated further. Then HDR conducted technical evaluations and prepared a series of technical memoranda to identify options and alternatives, address issues, and provide recommendations for further consideration and inclusion in this ISWMP Update. As noted in Section 1.2, the technical memoranda generally focused on specific topics relevant to current and future needs of the Planning Area. In addition, the technical memoranda enhance or expand upon topics previously addressed in the 1994 ISWMP. The topics of these technical memoranda are as follows:

- Solid Waste Management Program Funding – Describes current program costs, current funding mechanisms, and funding options for existing, new, and expanded programs in the future.
- Waste Tracking – Identifies major sources of information available on waste generation, diversion, and disposal by waste types; gaps in data and sources that may provide such data; and options to obtain currently missing or limited data on waste generation, diversion, and disposal by waste types.
- Zero Waste and Waste Minimization – Defines and identifies major strategies and program options that are commonly used or considered for waste minimization.
- Energy Recovery – Program Options Assessment – Provides a general summary of current technologies and identifies the key factors that would need to be considered to make such a technological approach viable.
- Public Education and Policy Initiatives – Provides an overview of various options and actions related to public education and identifies policy initiatives that may be necessary to achieve the goals and objectives identified in this ISWMP Update.
- Market Analysis – Identifies and assesses the adequacy of the existing markets, current market prices, and gaps in market for potentially recovered or diverted materials. The marketable energy from waste or landfill gas combustion and the byproducts from C/D activities were not addressed in this memorandum.

The results of these technical evaluations are summarized in Section 3, Waste Management Alternatives, and the technical memoranda are provided in Appendix B.

1.2.3 Strategy Development

In consideration of the updated goals and objectives, revised assessment of needs, and evaluated technical matters related to this ISWMP Update, Section 4, Strategy Development, was prepared. The Strategy Development section addresses optional programs and general strategies that might be included in the final plan development. These options were prepared in a format that allowed for inclusion in the final plan. The purpose of the Strategy Development section was to present strategies that will progressively move the integrated solid waste management system along the waste management hierarchy from current diversion and disposal practices toward increasing

degrees of diversion (waste minimization, reuse, recycling/composting) and environmental stewardship, based on considerations of technological and economic factors. The strategies incorporated new and expanded programs that attempt to realistically match opportunities for diversion with attainable recovery percentages and available or developable material markets.

1.3 Goals and Objectives

The 1994 ISWMP recognized that to move forward in achieving goals and objectives and to provide comprehensive integrated solid waste management programs, it would be necessary to address various environmental, technical, economic, and socio-political constraints. Since the development of the 1994 ISWMP, the management system has matured and greater diversion of waste is being achieved through various public and private initiatives. Those changes, along with the pending expiration of the planning timeline identified in the 1994 ISWMP, have been key drivers in preparing this ISWMP Update.

Consistent with the 1994 ISWMP, the ISWMP Update attempts to consider the following fundamental objectives and criteria in assessing and identifying options for the future:

- Environmental soundness
- Technical feasibility
- Economic viability
- Socio-political acceptability

Based on a review of the goals and objectives contained in Section 1 of the 1994 ISWMP, the SW Steering Committee updated the goals to serve as guidance for this ISWMP Update. Goals and objectives were grouped into the following categories:

- General
- Organizational Framework
- Source Reduction
- Recycling
- Composting and Organic Waste Management
- Landfills (MSW Disposal Areas)
- Waste Transfer and Processing Facilities
- Other and Special Wastes
- Waste Combustion or Thermal-Chemical Conversion

The updated goals and objectives are presented in Sections 1.3.1 through 1.3.9.

1.3.1 General

- G1. Meet the requirements of Nebraska's Integrated Solid Waste Management Act (the Act) (Nebr. Rev. Statutes Chapter 13, Sections 13-2001 to 13-2043):
 - 1-1 Continue to pursue source reduction, recycling, and composting programs to meet the waste diversion goals in the Act.
 - 1-2 Establish and maintain community education programs to inform the community of the ISWMP Update and the available waste management programs.
- G2. Continue to evaluate available waste management options for the Planning Area through an objective assessment process:
 - 2-1 Based on subsequent evaluation, select solid waste management systems, facilities, or programs that are environmentally sound; that is, provide a net environmental enhancement when compared to current methods.
 - 2-2 Based on subsequent evaluation, select solid waste management systems, facilities, or programs that are technically feasible; that is, operate successfully on a full-scale and environmentally sustainable basis.
 - 2-3 Based on subsequent evaluation, select solid waste management systems, facilities, or programs that are economically viable; that is, provide a level of environmental benefits with sustainable funding mechanisms and that are affordable to the communities served.
 - 2-4 Based on subsequent evaluation, select new solid waste management systems, facilities, or programs that are socio-politically acceptable; that is, meet federal, state, and local regulatory requirements while being responsive to the expectations of the general public.

1.3.2 Organizational Framework

- G3. Maintain control and reduce the risks to local governments:
 - 3-1 Support public-private partnerships that provide a shared control for providing solid waste management systems, facilities, and programs.
 - 3-2 Look for regional opportunities for units of government to cooperatively provide solid waste management systems, facilities, or programs for the various Planning Area members.
 - 3-3 Utilize existing and available resources and web-based linkages to enhance communication of common solid waste management needs and possible solutions.
 - 3-4 Evaluate appropriate regulations or organizational structures to allow units of government to better regulate and control imports and exports of solid waste from the Planning Area so as to capture and utilize the

resource value of solid waste to provide sustainable, integrated, resource conservation and management systems.

- G4. Fund solid waste management facilities and programs to assure that they are sustainable:
- 4-1 Pursue legislative changes to allow individual waste generators to be charged for the cost of programs and services provided in a manner that allows waste generators to see the value of conservation, reduction, management costs, and outcomes.
 - 4-2 Evaluate funding mechanisms whereby the public pays for the level of service that they use in order to encourage more responsible waste management practices.

1.3.3 Source Reduction

- G5. Reduce the quantity of waste generated that would otherwise require management through recycling, composting, combustion, or landfilling:
- 5-1 Enhance the community education programs in the Planning Area to encourage waste reduction by residential, commercial, industrial, and institutional solid waste generators.
 - 5-2 Enhance the community education programs in the Planning Area to encourage the reduction in use of potentially toxic materials.
 - 5-3 Evaluate economic incentives/disincentives to encourage waste reduction by residential, commercial, industrial, and institutional solid waste generators.
 - 5-4 Evaluate options for expanding reuse programs to divert materials from the solid waste management facilities in an environmentally safe manner, including information clearinghouse(s) or association with existing or new waste exchange(s).
 - 5-5 Support private-sector programs to divert or reduce the generation of materials that would otherwise cost to be collected, processed, recycled/composted, or disposed.

1.3.4 Recycling

- G6. Recover marketable materials from the waste stream for reuse:
- 6-1 Enhance existing community education programs in the Planning Area to encourage the recovery and recycling of marketable materials by residential, commercial, industrial, and institutional solid waste generators.
 - 6-2 Support and encourage convenient recyclable collection mechanisms or programs for residential, commercial, industrial, and institutional solid waste generators, taking into account the differences in urban, suburban, and rural residential population densities and commercial levels of activity.

- 6-3 Support the consolidation, processing, and transport of recovered materials to enhance their marketability.
- 6-4 Continue to support UnderTheSink for the management of HHWs.
- 6-5 Evaluate opportunities to cost-effectively expand UnderTheSink to further increase the quantity of hazardous materials diverted from solid waste disposal areas (landfills).
- 6-6 Encourage local and regional reuse of recovered materials.
- 6-7 Evaluate changes to purchasing policies, building codes, and material purchase specifications used in Planning Area governmental procurement programs to encourage waste reduction, recycling, and the use of recycled materials in an environmentally sound manner.

1.3.5 Composting and Organic Waste Management

- G7. Reduce the volume of the organic portion of the solid waste stream:
 - 7-1 Support community education programs to encourage diversion of the organic portion of the solid waste stream through residential and commercial composting activities.
 - 7-2 Utilize public education programs to encourage reduction in the quantity of yard waste requiring collection and management through "Don't Bag It," "Let it Be," or similar programs.
 - 7-3 Create public education guidance documents to enhance current educational programs that encourage and educate the public on environmentally sound backyard composting practices, including composting of yard waste, food waste, and other potentially putrescible materials.
 - 7-4 Encourage diversion of residential and commercial landscape waste through mulch and compost programs.
 - 7-5 Evaluate options to provide a regional composting facility(ies) for yard waste.
 - 7-6 Evaluate future composting of organic waste, including compost markets.
- G8. Support expanded uses for compost and wood mulch products to improve the stormwater run-off quality, increase infiltration (reduce run-off), and improve soil conditions in the urban environment.
 - 8-1 Evaluate changes to purchasing policies, building codes, and material purchase specifications used in Planning Area governmental procurement programs to encourage the use of compost products in an environmentally sound manner.

1.3.6 Landfills (Municipal Solid Waste Disposal Areas)

- G9. Continue to provide a minimum of 20 years of landfill capacity in the Planning Area with an MSW disposal area that meets the requirements of Resource Conservation and Recovery Act ("RCRA") Subtitle D and Nebraska Department of Environmental Quality ("NDEQ") Title 132 regulations:
 - 9-1 Continue to support the contract operations of the Pheasant Point Landfill to provide a minimum of 20 years of disposal capacity in the Planning Area.
 - 9-2 Monitor changing regulations related to materials such as biosolids and CCR to determine whether they will affect the remaining life of the Pheasant Point Landfill.

1.3.7 Waste Transfer and Processing Facilities

- G10. Provide for efficient transportation and handling of solid waste, recovered materials, processed recyclables, compostable materials, and compost products:
 - 10-1 Evaluate the need for additional transfer station(s) or a combination of solid waste transfer stations and recyclables processing facilities to reduce GHG emissions and cost-effectively transport materials generated and managed within the Planning Area.
 - 10-2 Establish transfer station and processing facility zoning, construction and operations regulations that would be applicable to facilities sited in the Planning Area to improve transportation efficiency and reduce the environmental impacts of these facilities.
 - 10-3 Establish transfer station and processing facility regulations related to monitoring and reporting to ensure waste and recyclable materials are managed in an environmentally sound manner and to evaluate the sustainability of such facilities.
 - 10-4 Establish transfer station and processing facility zoning and permitting requirements that require applicants to demonstrate that such facilities are necessary and are consistent with Planning Area goals and program requirements to maintain sustainable programs.

1.3.8 Other and Special Wastes

- G11. Reduce the volume of other and special wastes, including HHW, C/D debris, metals/appliances, electronics waste ("e-waste"), bulky materials, and used motor oil, which currently require disposal:
 - 11-1 Evaluate enhanced community education programs to encourage separation of potentially hazardous and difficult-to-manage materials in the residential, commercial, industrial, and institutional solid waste streams.

- 11-2 Encourage the use of substitute products (e.g., less toxic material, multi-use containers) and provide guidance on recycling and the proper disposal options available.
- 11-3 Look for opportunities to provide mechanisms or support private initiatives to provide mechanisms for management of other and special wastes where such mechanisms are not currently available and are deemed appropriate to divert such waste from the mixed municipal waste stream.
- 11-4 Support privately sponsored programs for the reuse, recycling, or diversion of special wastes and/or other wastes through information on website(s), information clearinghouse(s), or association with existing or new waste exchange(s).
- 11-5 Encourage product stewardship for difficult-to-recycle products at the retail or wholesale level.

1.3.9 Waste Combustion or Thermal-Chemical Conversion

- G12. Continue to monitor the key elements necessary to implement cost-effective energy recovery, volume reduction, and stabilization of solid waste through combustion and other thermal-chemical conversion technologies:
 - 12-1 Monitor criteria necessary for development of viable and sustainable energy recovery technologies and pursue proven economically and environmentally sound opportunities based on criteria identified in this 2012 Plan.