ELEMENTS

KANSAS CITY REGIONAL BY-PRODUCT SYNERGY INITIATIVE
FEASIBILITY STUDY

Prepared for:
Mid-America Regional Council
Solid Waste Management District

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July 21, 2003

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EXECUTIVE SUMMARY

Background
In December 2002, the Mid-America Regional Council Solid Waste Management District (MARC SWMD) contracted with the Elements Division of BNIM Architects to undertake a six-month feasibility study of a By-Product Synergy (BPS) project in the Kansas City region. Interest in a Kansas City Regional BPS Initiative was first generated when Andrew Mangan, an originator of the BPS process, made a presentation to the Environmental Excellence Business Network (EEBN) of Kansas City in July 2002. To complete the feasibility study, a team was formed consisting of Andrew Mangan, the Elements Division of BNIM Architects, Bridging The Gap (BTG), and Franklin Associates.

The purpose of the feasibility study was to determine whether there is sufficient interest in the Kansas City region to embark on a By-Product Synergy Project. A BPS Project requires commitment, participation, communication, and information exchange from 10-20 diverse organizations over a yearlong process. The process enables the participants to discover possible synergies in material exchange and then to determine the feasibility of implementing those synergies. Although possible connections and synergies that may emerge during the process remain unknown in the feasibility stage, it is possible to determine in advance whether there is an appropriately diverse group of organizations that may be willing to participate in a BPS Project.

According to the Feasibility Study Contract and Scope of Work, the project team was to:
- Assess and recommend appropriate methodology for project implementation
- Determine the optimum geographic breadth for project implementation
- Engage select leaders in the community to determine potential project support
- Facilitate dialogue among project sponsors and potential participants on the merits of such a project, and
- Design a plan of action if project results indicated feasibility.

The effort was designed to provide the project sponsor with sufficient information to determine whether to support implementation of a Kansas City Regional By-Product Synergy Project and if determined to be feasible, design a plan of action.[1]

Scope of Work
The following task structure from the Scope of Work forms the structure of section 2.0 of this report:
2.1 Finalize Scope and Charter Team
2.2 Assess Methodology
2.3 Determine Geographic Breadth
2.4 Educate & Engage Select Kansas City Leadership
2.5 Facilitate Dialogue Among Sponsors & Potential Participants
2.6 Deliver Recommendations for Implementation
2.7 Project Management

Summary of Tasks

Task 2.1 Finalize scope and charter team
The project scope of work was formalized in the contract. The project team, made up of the four participating groups, was engaged. The team roles were established and are outlined in the report.

[1] Kansas City Regional By-Product Synergy Feasibility Study Scope of Work, December 2002.

An Advisory Committee of private and public sector representatives was formed at the beginning of the project. These representatives were a part of an existing byproduct synergy workgroup established after the July 2002 presentation made by Andrew Mangan. The project team communicated with the Advisory Committee in three facilitated dialogue sessions and through the distribution of minutes from those sessions. **Task 2.2 Assess methodology**
The project team reviewed and customized the methodologies used by Andrew Mangan in previous By-Product Synergy Projects for the Kansas City Region. The project team developed a financial model for use in implementing a Kansas City Regional BPS Initiative. The team established funding requirements as well as opportunities from both the public and private sectors. The methodology is established in the report.

Task 2.3 Determine geographic breadth
The project team examined the geographic region of Kansas City to determine an ideal target area from which to identify the diverse participants and potential sponsors for the project. The team explored key participants who might lie beyond the target area. The geographic breadth, determined to be the eight county MARC region, is described in the report. The target area proved to be adequate to generate the number diverse industries required to make a successful BPS project.

Tasks 2.4 and 2.5 Educate & engage select Kansas City leadership; facilitate dialog among sponsors and potential participants
The project team created and prioritized a database of potential participants to identify the potential early adopters for a Kansas City Regional By-Product Synergy Initiative. When the priority list was established, the team arranged meetings with key public and private sector leaders to educate the group about the merits of the project and to determine interest in the project concept. From these meetings and dialogs, the team determined whether the level of interest expressed would be sufficient to recommend launching a project in the Kansas City region. The results of these tasks are summarized here and in the report.

Private Sector
A database of regional industries with over 2000 entries was analyzed during a series of prioritization exercises until a list of approximately 200 organizations remained. From this list, a priority group of 34 potential early adopters was identified. The team relied on its own network and that of the Advisory Committee to find the right contact within each organization. Informational packets were distributed to all of the potential participants and meetings were arranged with those interested. At each meeting, company representatives were briefed on the BPS process, its goals, general financial and human resource requirements and the efforts of MARC SWMD with regard to the feasibility study. Each organization was asked if they would be interested in participation knowing that participation would require an executive commitment, a human resources commitment of one company representative with direct access to decision makers for about ten percent of staff time during the yearlong project, and a financial commitment estimated between $10,000 and $15,000.

Of the 34 potential participants contacted with project information, 22 private and public sector organizations expressed sufficient interest to justify further interaction during the implementation process. Twelve organizations expressed little or no interest at this time. Individual responses are characterized in the report.

In previously successful BPS projects, participants teamed with Andrew Mangan and a community organization to implement the By-Product Synergy process. The goal was to institutionalize the process through the local community organization to keep the effort active and growing into the future. Participants generally realized value through this collaboration and wanted to continue the relationship beyond the one-year process. In implementing a Kansas City Regional By-Product Synergy Initiative, the likely community organization partner is the Environmental Excellence Business Network (EEBN). EEBN is a local network of company representatives with a common goal to achieve sustainable, environmental solutions that protect natural resources and make good business sense. Many of the prospective organizations queried during the feasibility study are already EEBN members. Several organizations expressed interest in using this project to strengthen the EEBN. In addition,

support from EEBN through its parent organization, Bridging The Gap (BTG), was critical in generating interest for the project.

Public Sector
Several public entity representatives in the Kansas City region also attended the BPS presentation at the EEBN meeting in July 2002 and agreed to participate on an Advisory Committee for the feasibility study organized by MARC SWMD. These included representatives of the US Environmental Protection Agency Region 7 (EPA), MARC, Missouri Department of Natural Resources (MDNR), state governments of Kansas and Missouri, universities and local governments.. In seeking to determine the level of financial, policy and regulatory support possible for the implementation of a BPS project in the Kansas City region the team looked to the Advisory Committee for guidance throughout the process.

After consultation, the team established a priority list of public sector entities at the federal, state and local levels to approach for support. Twelve public sector organizations were contacted with project information and all of the groups expressed support for a regional BPS project.

EPA Deputy Regional Administrator, Bill Rice, expressed support for the concept and encouraged the Team to seek grant opportunities with the EPA. Based on initial interest expressed by private and public sector representatives, BTG submitted two proposals during the feasibility study process in order to meet grant application deadlines. One grant for $75,000 was approved and will help to cover the cost of the BPS implementation tasks including negotiating agreements with potential participants.

Andrew Mangan, Ed Van Leeuwen of Hallmark Cards, and Lisa Danbury of MARC SWMD presented the project information to the Environmental Improvement and Energy Resources Authority (EIERA) board in May 2003. A request was made for $50,000. The board expressed its support and encouraged the team to submit a proposal for consideration at the next board meeting scheduled for mid-August. BTG prepared and submitted the grant request at the $50,000 level. Board members also expressed interest in taking the concept to other urban centers in Missouri if it was proven successful in the Kansas City region.
Discussions were held throughout the feasibly study with the MARC SWMD representatives. Andrew Mangan made a presentation to the MARC SWMD board in May to explain the outcomes of the feasibility study. MARC SWMD has set aside $50,000 for market development initiatives, including support for implementation of a BPS Project pending the results of the feasibility study.

The team also explored the potential for a BPS Project to support the development of recycling-based markets as well as an eco-industrial park within the region. Andrew Mangan presented the BPS concept and details of the Kansas City feasibility process at the 2003 annual meeting of the Missouri Recycling Association (MORA) in May and generated additional statewide interest in the project. Meetings were also arranged with the City of Sugar Creek and with a local developer to discuss the potential for a future eco-industrial park to play a role in the BPS process. The By-Product Synergy process was subsequently recommended in a proposal to the City for the development of an eco-industrial park.

Task 2.6 Recommendations for Implementation
The MARC region has a sufficient number of interested and diverse industries to launch a successful Kansas City Regional By-Product Synergy Initiative based on initial responses from the private sector organizations contacted during the feasibility study process. Responses from the public sector institutions approached indicate sufficient support at a federal, state and local governmental level to recommend proceeding with implementation of a BPS project in the fall of 2003.

Implementation
The MARC SWMD representatives expressed strong support for the Environmental Business Network of Kansas City and BridgingThe Gap to serve as the project managers for the implementation of the BPS project.

This recommendation is consistent with recommendations from the private sector as well as Andrew Mangan's experience with previous successful BPS projects. It is the recommendation of this report that EEBN and Bridging The Gap serve as project managers for implementation while Andrew Mangan, Franklin Associates and the Elements Division of BNIM continue to serve the team in a variety of advisory and technical roles outlined in the report.

The next steps for implementation will be to finalize a Participant Agreement, to negotiate agreements with potential participants, and to secure public sector funding. It is the recommendation of this report that these tasks begin immediately with the assistance of Bridging The Gap and include the BPS project team once operational funds are secured.

1. Seek the support and guidance of the Environmental Excellence Business Network to finalize the participation fee structure and implement the work plan, timeline and budget.

2. Customize Participant Agreements for the Kansas City region based on agreements used successfully in past BPS projects. Andrew Mangan can provide EEBN with guidance to establish a Kansas City Participation Agreement. EEBN should also consult with a few key potential participants for feedback on a template format.

3. Arrange private meetings with each potential participant to negotiate a participation agreement. The EEBN network and Bridging The Gap staff are available to take the lead on this process before momentum and interest in the project is lost from the feasibility outreach process. Andrew Mangan can provide guidance on the negotiation process.

4. Submit grant proposals for funding to support the project's operational tasks. Bridging The Gap will provide full proposals to: US EPA to secure the $75,000 grant funds; EIERA to secure $50,000; andMARC SWMD to secure up to $50,000. These funds are critical to the success of the project.

Funding

The BPS process has a standard set of tasks and costs, which vary somewhat depending on local conditions. In this case, the project cost has been estimated at $300,000. This would cover the projected cost to gather data from ten participating companies or entities, analyze the data to uncover possible synergies, guide each project participant through the facilitated brainstorming sessions, identify potential synergies and help prioritize synergies based on feasibility, barriers and strategies for implementation. If more than ten companies are recruited additional participation fees or grant funds would be used to cover the additional costs.

If the full funding is not achieved within a reasonable timeframe, the project scope will be reassessed and presented to participating companies and organizations to determine their interest in proceeding. This timeframe is anticipated to end December 1, 2003. Under such an outcome, the project tasks, and potentially the project team would have to be modified.

In order to achieve the level of funding needed to launch the BPS project, all public and private sector funding sources identified in this feasibility study need to be secured. The project is feasible provided a combination of public and private organizations agrees to participate and contribute project fees and grants that total $300,000.

An incentive structure has been built into previous BPS projects to reward the project implementation team for successfully implemented synergies while simultaneously providing participating organizations with additional assurance that their specific goals will be achieved. Incentive structures used in previous BPS projects have included a scale of fees and shared percentages derived from successfully implemented synergies. In the Kansas City case the feasibility study finds that companies would not likely participate at fee levels higher than $15,000

with a small percentage of savings. It is also desirable in Kansas City to share a percentage of the incentive structure with EEBN for implementation beyond the first year.

The incentive structure can be presented in two ways: as a percent of the value of implemented synergies over a period of time or as a formula tied to specific waste reduction goals for individual organizations. The most successful projects have designated a local community partner as the party responsible for tracking the incentive process and sharing in the returns with the project implementation team. In the Kansas City Regional By-Product Synergy Initiative, it is recommended that EEBN play that role.

Project Steering Committee
The number of city, county and state entities interested in the waste diversion, reuse and recycling aspects of the BPS project is notable. Given this and the general interest in community issues by the EEBN members, the Kansas City Regional BPS Initiative should have a Steering Committee that will help to address broad community recycling issues as well as the specific reuse synergies of the company participants. By-product synergies for glass and other municipal streams as well as opportunities for market development will be brought into the project discussion through its public sector participants.

There is also a need throughout the project to assure an open and yet confidential process in which companies can freely and openly talk about their waste and reuse issues without concern of possible sanction. The facilitated dialog throughout the project must be limited to those entities that are project participants bound by confidentiality. On the other hand, public sector sponsors not participating at the synergy table should have an effective way to monitor the project's progress. Regular project reports are one way of achieving this, but in addition it is the recommendation of this report is to establish a formal Steering Committee made up of representatives of the public sector funding agencies, project participants, and the EEBN project team. The Steering Committee would meet regularly during the project to hear of developments, troubleshoot problems and stay in touch with progress.

Task 2.7
The feasibility study was managed by Andrew Mangan of the US Council for Sustainable Development, who served as Project Manager, and the Elements Division of BNIM Architects, who served as Regional Project Coordinator. The feasibility study's six-month schedule is included in the report.

Recommendations & Conclusions
Based on initial responses from the public and private sector organizations contacted during the feasibility study process, as well as the analysis work summarized in this report, the project team concludes that the MARC region has a sufficient number of interested and diverse industries to launch a successful Kansas City Regional By-Product Synergy Initiative. The project team recommends proceeding with implementation of a BPS project in the fall of 2003.

1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION TO BY-PRODUCT SYNERGY

Kansas City Regional By-Product Synergy Initiative

By-Product Synergy (BPS) is the practical application of industrial ecology in which organizations work together in a given region to match feedstock needs to unwanted by-products. Each regional project involves recruiting ten to twenty diverse organizations as fee-paying participants and engaging local, state and federal government agencies as supporters. Through the BPS process, individual companies are transformed into a cross-industry team focused on turning by-product material into product with value.

In December 2002, the Mid-America Regional Council Solid Waste Management District (MARC SWMD) in Kansas City invited Andrew Mangan of the US Business Council for Sustainable Development (US BCSD) and a team including the Elements consulting Division of BNIM Architects, Franklin Associates and Bridging The Gap to determine the feasibility of launching a By-Product Synergy project in the Kansas City region. The project team was charged with meeting select private and public sector leaders in the region to determine project support. In June, the team reported its findings and recommendations to MARC SWMD.

Concept

By-Product Synergy is the practice of matching under-valued waste or by-product streams with potential users, helping to create new revenues or savings for the organizations involved while simultaneously addressing social and environmental impacts. The US EPA and Business Council for Sustainable Development define the By-Product Synergy process as "The synergy among diverse industries, agriculture, and communities resulting in profitable conversion of by-products and wastes to resources promoting sustainability."

Purpose

BPS brings neighboring industrial companies and organizations together to exchange elemental information about their processes in order to create synergies. The synergies uncovered can produce added revenues, new business opportunities, cost-savings, and environmental and regulatory benefits to the group and to the region as a whole.

Process

The process begins by cataloging each organization's inflows and outflows in a confidential, uniform database that is analyzed for synergies by an experienced project team and through facilitated working sessions with the participants. Participants discover many valuable connections between themselves and other industries in the region. They create action plans for synergies judged commercially viable, and organize strategies for addressing technical, regulatory or other barriers. The group continues to convene for as long as participants are interested.

In the initial stages of a BPS project, participating organizations' engineers and operations staff are exposed to the production processes, raw material needs, and waste streams of one another's businesses and industries. Through extensive collaboration, coordinated and facilitated, these participating organizations discover innovative ways to integrate their operations that reduce pollution, and reduce material costs, improve internal processes and improve the bottom line.

The BPS process generally lasts for one year. In that time, potential synergies are identified, barriers are encountered, and opportunities are realized to convert by-products into raw materials for processes in other industry sectors. This collaborative business driven approach also enlists industry's capabilities in addressing waste and pollution issues. In return, regulators have shown a willingness to explore ways of permitting reuse options that can be shown to produce higher environmental results.

Benefits
The benefits of the process are the achievement of balanced social, economic and environmental goals such as:

- Reduced operating expense
- Reduced energy use
- Reduced emissions
- Waste transformed into product
- Surpassed regulatory targets
- Improved community relationships
- Improved productivity
- Improved profitability

Barriers
There are numerous barriers that may be encountered during the BPS process. Each synergy will have its own unique set of barriers to overcome. Often the barriers can be overcome through collaboration. While all the potential barriers that may arise cannot be predicted, the barriers most often experienced and overcome can be divided into five categories:

- ***Technical barriers -*** It is not surprising that there may be some technical barriers with the reuse of waste, especially if they are mixed with other materials. Overcoming technical barriers relies on cross-disciplinary collaboration to uncover beneficial solutions.
- ***Economic barriers*** - Even though a technical solution may exist, it is not always economically feasible to reuse waste among industries. The low cost for landfill disposal limits the reuse of otherwise reusable materials. When waste has to be transported long distances or an initial capital investment is necessary to convert the waste into reusable feedstock, the economic advantages diminish. Some by-products and wastes do not have a good market value, which makes investments for recovery unattractive. To overcome this barrier, the waste reuse opportunities pursued are often those that involve minimal transportation and minimal reprocessing.
- ***Regulatory barriers and liability*** - Regulatory barriers to waste reuse include the definition and classification of materials, the need for a separate regulatory framework for waste, and liability issues. Definition and classification of materials by regulatory organizations subjects materials to state and national laws. The vague and varying definitions and classifications of waste material make it difficult to convince businesses to reuse waste generated by another organization. Once something is defined as a waste, it is subject to a unique set of regulations governing its transportation and disposal. Regulations often do not allow for re-use, thus it is a cumbersome process for an industry to gain permission to adopt approaches other than those outlined within given regulations. It is not always clear who is liable for the reuse of the by-product - the producer or the consumer. This means both parties in a by-product synergy transaction must take a calculated risk based on incomplete information. Regulatory barriers are overcome through strategic partnerships formed with regulating organizations.
- ***Perception and reputation*** - Even when all technical, economical and regulatory issues have been resolved organizations sometimes remain reluctant to reuse waste. The reluctance is due to perception of how using "waste" may effect the organization's reputation. Reusing a waste when making a high-quality product seems risky. Waste has a negative connotation and that alone makes people reluctant. When the waste material fulfils all the technical requirements from the specification this barrier can sometimes be overcome. The BPS process involves sharing technical knowledge of all participants' manufacturing processes.
- ***Lack of Incentives -*** A major barrier to waste reuse is the lack of incentive for companies to develop sophisticated reuse programs. Particularly in locations where disposing of waste streams can be done at extremely low cost; it is hard to justify the expense of reuse. To overcome this barrier the BPS process operates at two levels simultaneously: BPS looks for investments that would turn wastes into profit streams and BPS looks for new ways of working with regulators to create incentives. The value proposition calls on customers to agree that many unexplored cross-industry reuse opportunities exist that have not been

identified because organizations are focused on their core competencies. Organizations do not typically take the time to look across the fence at other possibilities demonstrated by neighboring industries. By-Product Synergy provides an efficient process for finding synergies, opportunities, and incentives at a reasonable cost.

Regulatory Issues

From the earliest days of work on By-Product Synergy in 1995, the United States Environmental Protection Agency (EPA) has been a supporter, led by the Office of International Activities and Region VI (Texas). EPA has been willing to explore alternatives to regulations that block companies from developing environmentally beneficial synergetic activities. The EPA has also recognized potential for emission reductions resulting from synergies. In the New Jersey By-Product Synergy Initiative, the EPA and state regulators are working as a synergy review team looking for environmentally beneficial synergies. For these synergies baseline estimates of emissions without the synergy are being developed using site-specific data. The solid waste, energy and air emissions implications of the synergy will be projected and measured against the baseline to estimate incremental changes associated with implementing the synergy. Once the environmental impacts are quantified, a synergy review panel on a case-by-case basis will evaluate projects.

Keys to Success

There are three keys to a successful By-Product Synergy process. The first is diversity. The participants brought together in these projects represent a wide variety of industries and organizations, which broaden the markets in which participants find business opportunities.

The second is communication. The BPS project provides a forum in which participants are comfortable sharing ideas. The process stimulates creative thinking to look beyond company fence-lines for opportunities.

The third is partnerships. By leveraging the relationships with technical consultants, regulatory agencies, research organizations, and participating organizations, the barriers to implementing synergies are overcome. Participants in the project are also encouraged to explore opportunities for synergies with companies in other BPS projects.

2.0 KANSAS CITY REGIONAL BY-PRODUCT SYNERGY INITIATIVE FEASIBILITY STUDY

The Mid-America Regional Council Solid Waste Management District (MARC SWMD) engaged the Project Team to determine the feasibility of successfully conducting a By-Product Synergy project in the Kansas City bi-state region and if determined to be feasible, design a plan of action.

Goals
The goal of the feasibility study was to determine if the By-Product Synergy process is feasible in the Kansas City region. To determine this, the Team:

- Assessed BPS and other methodologies
- Determined the optimal geographic breadth of the project
- Engaged select leaders in the community to determine the potential for project support
- Sought local, state and federal government project understanding and support
- Facilitated a dialog among project sponsors and the potential participants on the merits of the project
- Sought to provide sponsors with sufficient information to determine the feasibility of launching a Kansas City Regional By-Product Synergy Initiative
- Designed a plan of action

The over-arching goals for the By-Product Synergy Initiative are to:

- Create a culture of possibility for regional industry, business and government
- Reduce waste and develop regional markets
- Improve partnerships among the regional communities
- Improve the economic sustainability of regional business & industry

2.1 TEAM ROLES

Project Team
The following Project Team was formed to conduct the feasibility study:

Andrew Mangan (US BCSD) served as Project Manager and brought the BPS process, content, historical context and existing project material to the other team members and the community.

The Elements Division of BNIM Architects served as Regional Project Coordinator and helped with project management, communication, budgeting and reporting.

Franklin Associates served as Technical Advisor and coordinated the database of potential industrial partners in the Kansas City region. They provided an analytical perspective and helped with community outreach.

Bridging The Gap served as Community Advisor, and took the lead on community outreach for both private and public sectors. They helped to effectively communicate the concept to the public.

MARC SWMD and Advisory Committee
The Project Team relied on MARC SWMD leadership and the Advisory Committee for guidance throughout the study and reported to them formally three times during the process. The Advisory Committee was asked to assist in identifying potential project partners and in making personal contacts at potential partners' organizations.

2.2 METHODOLOGY

By-Product Synergy Methodology
The core of a successful By-Product Synergy project will be the recruitment of ten to twenty organizations in the region willing to pay to participate in the full BPS project. Once recruited, these business units will be brought together for a series of structured brainstorming sessions during a nine-month timeframe. Each participant organization will provide materials balance information for a confidential database that will be analyzed for synergies between organizations. Executives, managers, and technical personnel from these companies will participate in a series of facilitated meetings in order to identify opportunities for By-Product Synergies and to explore ways to implement and benefit from such synergies. Participants will analyze the extent to which the waste products or by-products of one industry can be used as raw materials or ingredients by other industries.

Simultaneously, public sector support will be sought out and developed. Regulatory and operational agencies at the local, state, and federal levels will be invited to participate as sponsors of the project and as regulatory reviewers of possible synergies that may be blocked due to specific regulations. Appropriate research institutions and community organizations may be invited to participate to broaden project support and capability.

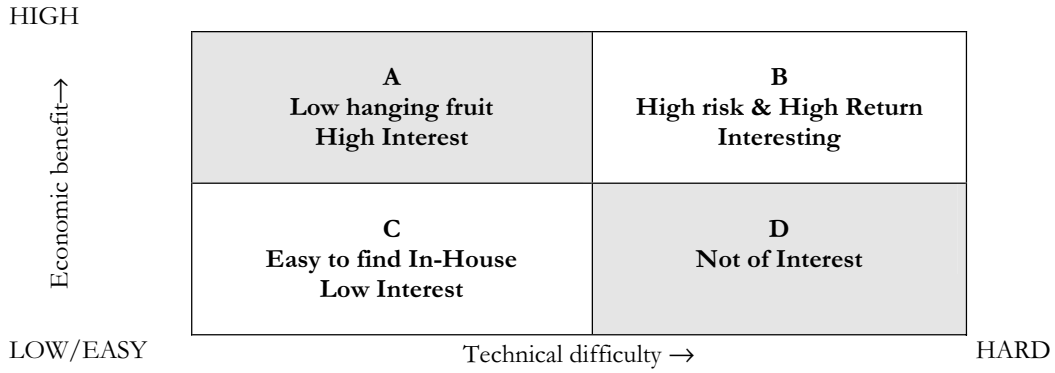
Participation Fees
Participating organizations will be asked to contribute to the total costs of the one year facilitation process through a combination of participation fees and shared percentages of cost savings or incremental revenue realized by the organization as a result of the project. During the initial year of the project, the facilitation team will work to identify public sector support from various sources to supplement contributions from the private sector.

By-Product Synergy Project Deliverables
The Project Team will provide the following to participant organizations:

- *Education and Awareness*—Facilitators will communicate the By-Product Synergy concept to the organization's executives and operational managers in a series of meetings & site visits.
- *Data Collection*— Facilitators will provide a uniform methodology and tools for the collection of material balance information by the organization. Facilitators may assist the efforts of the organization to gather this information by visiting their facilities and asking questions during the data gathering process. It is the organization's responsibility to collect and submit data on the schedule and in the format designated by the facilitation team.
- *Analysis*—Facilitators will provide technical assistance to evaluate the information provided by the participant organizations, to make suggestions about potential synergies and to offer guidance. The facilitation will provide reports and presentations on various possibilities and opportunities.
- *Facilitated Working Sessions*—Facilitators will organize and conduct a series of group working sessions for the purpose of analyzing materials data, exploring potential synergies and evaluating possibilities for implementation. The facilitation team will assist participant organizations with plans for implementing selected synergies.
- *Evaluation*—Facilitators will assist participant organizations and project sponsors with suggestions for measuring the benefits of the synergies implemented.

Investment Potential

Addressing technical and economic barriers is critical to achieving successful synergies. Market segmentation on these two barriers can be analyzed by using a matrix with technical difficulty on one axis and potential economic return on the other. By doing so, waste can be sorted into four prioritization categories. A high economic return is important to motivate organizations to pursue the waste reuse opportunities in spite of regulatory difficulties.



Each quadrant of the diagram represents a different market segment:

- Quadrant D = By-product reuse with high technical difficulty and low economical return is not of interest to most, although sometimes an unexpected synergy can be found.
- Quadrant C = By-product reuse with low technical difficulty and low economic return is generally of low interest. These solutions are generally found in-house.
- Quadrant B = High technical difficulty combined with high economic potential (caused by e.g. high disposal costs or a high intrinsic value) is an interesting category for knowledge-based processes like BPS.
- Quadrant A = High economic return combined with low technical difficulty (low hanging fruit) is interesting for everyone.

A unique advantage of the By-Product Synergy process and the collaboration among a regional group of organizations is the potential for cross-industry breakthroughs. What may pose a technological barrier to one business may be readily addressed at a lower cost by another industry with a particular expertise. What one business may regard as a high risk synergy may be a low risk synergy to another organization if the risk is one that they address in the ordinary course of their operations. BPS permits the matrix to be viewed both on an individual basis and on a collaborative basis.

2.3 GEOGRAPHIC BREADTH

In initiating this discussion the team used a layering or overlay approach to identifying the core area for the Kansas City Regional By-Product Synergy Initiative. The core area was identified as the MARC eight county region and was extended outward based on an analysis of each of several overlays, which are as follows:

- Political Overlay
- Economic/Industry Overlay
- Agricultural Overlay
- Transportation Overlay
- Environmental Overlay
- Waste Disposal/Recycling Overlay

Geographic Overlays

Political Overlay:

Although there are many factors that serve to divide the Greater Kansas City Metropolitan Area, it is clear that in most respects the region is strikingly interdependent. The existing Bi-State Tax is a powerful advocate for this recognition. MARC, as a quasi-governmental/non-profit entity straddles this political/governance reality and serves eight counties covering two states (Missouri-Jackson, Cass, Clay, Platte and Ray: Kansas-Wyandotte, Johnson and Leavenworth). Local elected officials within these counties as well as national congressional representatives often have more in common with one another across state lines than with their counterparts in more rural portions of their respective states. Beyond these eight counties, however, most of the political interdependence becomes less apparent, there is less collaboration and the dialogue moves more to urban/rural or statewide focus.

Economic/Industry Overlay

Briefly summarized it appears that Jackson County has by far the largest industrial base followed by Wyandotte County, which has a number of large industrial based employers. Johnson County is third among MARC counties based on industrial employers. Beyond these three counties and within the eight county MARC region there is much less manufacturing activity. Specific industries can be identified that reside outside the MARC region that can be targeted but their inclusion will arise from their specific industry rather than from their political or geographic identities. Henry, Saline and Buchanan counties will each have some industry that fits in this category.

Agricultural Overlay

BPS may find potential raw materials or possibilities for farming applications waste in the agricultural sector. By examining the acres of cropland in each of the eight MARC counties as a starting point for this overlay there may be synergies found. The overlay will also be expanded to look at immediately adjacent counties. Although this information clearly would not guide the process, it may serve the project to include some representation from a knowledgeable agricultural representative who could participate.

Transportation Overlay

Here BPS may consider the identification of principal "users" of the major industrial and agricultural transportation systems that serve the MARC region. Although this would not necessarily extend the focus area, it may lead to industries or even political connections that should be recognized and informed of the process and ways that they may be included in its use. Example participants might include principal shippers by barge on the Missouri River. Materials or perhaps waste that is shipped through the MARC region may offer potential product synergies. Rail and overland transportation systems should also be considered.

Environmental Overlay
The ecological footprint is a symbolic way of looking at the amount of natural capital that is required to support the consumption of an individual (or in this example, of a population base). The Kansas City ecological footprint is equivalent in size to a 326 mile-diameter circle and is 100 times the size of its physical or land area footprint. This distance would reach Lincoln, Jefferson City and Topeka and almost touch Omaha, Wichita and Des Moines.

The region lies within the very expansive Missouri River Watershed, which is actually broken into several smaller watersheds. Nationwide there are 2,262 identified watersheds. The Lower Missouri-Crooked and the Lower Kansas watersheds are among 38 listed as having serious water quality problems. This suggests both the sources of water and the downstream recipients of water from this region are affected. Struggles among states, the Corps of Engineers and private interests continue to plague the use of the Missouri River and both the Missouri and the Kaw (Kansas) rivers regularly appear on the nations most endangered lists by American Rivers (a national conservation organization). For the purposes of this project it does not seem appropriate to further expand the geographical emphasis of BPS as a result of these watershed issues, but clearly it seems appropriate to recognize and regard them as possible connectors within the process. Industries presently using the rivers as main arteries of disposal may be particularly interested in exploring alternatives that lesson their impact and thus their own regulation.

Air quality issues in metropolitan Kansas City have resulted in the formation of the Air Quality Forum, which includes representatives from the eight counties, businesses, and environmental groups that target these concerns. The American Lung Association gave the region an "F" grade for the number of days ozone levels were at unhealthy levels between 1997 and 1999.The region technically meets all other current air quality standards but is likely to fall into "Non-Attainment" status in the near future. The fact that the Air Quality Forum already mirrors the MARC geographical region suggests that this is a workable standard for incorporating these issues in the BPS efforts.

Termed "urban sprawl," the development of the metropolitan area has been primarily outward rather than upward or through infill of declining areas. Between 1982 and 1997 the regions population increased by 17% but the amount of developed land increased at twice that rate with undeveloped acreage declining by 159,000 acres. Although urban sprawl impacts everything in and about the quality of life in the region it appears that its impact on BPS lies primarily in the inclusion of outlying areas that have "spotty" industrial development rather than permitting BPS to focus exclusively on a limited and more intensely developed area. This is adequately addressed by treating the MARC eight counties as the focus area for the BPS study.

Waste Disposal/Recycling Overlay
Waste disposal in the region primarily occurs at landfill sites that are located within the eight county MARC area on both sides of the state line. Disposal from some of the outlying counties does occur beyond the MARC county boundaries but is minimal compared to the total waste generation/disposal figures for the region.

Recycling as a means of solid waste management continues to grow in the region but not as rapidly as overall waste disposal. However, unlike waste disposal, only a small portion of recycled materials remains within the area for reprocessing or reuse. Most collected materials are shipped by rail or truck to distant sites for processing. Although this does not suggest an expansion of the size of the BPS geographical focus area, it does suggest that an understanding of the available materials may provide synergies for innovative business development and alternative uses for recycled materials already collected within the region.

Recommended Focus Area
The region already incorporated in MARC's service area includes eight counties and 114 cities, which comprise the bi-state metropolitan area. This area has clearly defined political leadership with elected officials from within the area serving as MARC's Board of Directors. Beyond this geographical area patterns of development, industry

and growth are more rural in nature and have fewer commonalities with the more populated urban region. The benefits of focusing on the MARC Region are as follows:

- An already clearly defined geographical area
- An infrastructure that has elected spokespersons and staff
- A need within the region for many of the benefits of the BPS Process
- Task forces and both formal and informal alliances already use this region as a focus for data collection, reporting and action
- The bi-state nature permits possible funding sources in both Kansas and Missouri and provides broader potential national political alliances (Kansas and Missouri congressional leaders)
- Many area businesses have locations in both Kansas and Missouri
- The media market for the region actually extends significantly beyond these boundaries but definitely includes this core as its most populous area.

Beyond the Focus Area

There are aspects of each of the described overlays that suggest areas of emphasis and/or specific representation from beyond the targeted geographical region.

- The largest employers and heaviest industry are located primarily within Jackson County. Wyandotte County is second with several large industrial employers and Johnson County is third. This suggests that even within the eight-county region our focus is mostly within three counties.
- The BPS effort would benefit from some contact with a person or organization with at least a general knowledge of employment and industry in the counties, which surround the MARC region. These specifically include the cities of Sedalia, St. Joseph, Clinton, Warrensburg, Topeka and Lawrence.
- Agricultural interests both within and immediately adjacent to the MARC region are a potential resource and a knowledgeable contact would be beneficial.
- Access to freight transportation and knowledge concerning freight regularly transported through the region or into the region could be beneficial to potential participants and a knowledgeable contact person would be beneficial.
- Within the MARC region the federal government is a very large employer. The BPS Team should consider the inclusion of perhaps a GSA purchasing representative as either a contact person or actual participant in the process.
- Although not mentioned above Whiteman Air Force Base adds to the impact of the Warrensburg area and may justify a specific contact person for the regions military bases.
- The BPS team could learn a great deal about targeted potential partners if a major solid waste management firm were to become a part of the team.

2.4 EDUCATE AND ENGAGE SELECT KANSAS CITY LEADERSHIP

BPS Project Implementation Process
Using a selection process outlined below, a number of diverse companies in the Kansas City region were approached about participating in a BPS project. The presentation explained the concept, the process and the potential value of By-Product Synergy. Each company received an information packet with a summary explanation, a video and a packet of case studies.

A BPS project typically involves 10-20 organizations from a variety of industrial sectors. The process begins by cataloging each organization's inflows and outflows in a confidential database. The facilitation team and participants analyze the database to uncover synergies. Participants discover the connections of value between themselves and other industries in the region. For each synergies judged commercially viable, an action plan is created and strategies are organized for addressing technical, regulatory or other barriers.

The engineers and operational staff from each participating organization are exposed to the production processes, raw material needs, and waste streams of other organizations within the boundaries of the confidentiality agreements. Through extensive collaboration, coordinated and facilitated, these participating organizations discover innovative ways to integrate their operations, cut pollution, reduce material costs, improve internal processes and improve their bottom line. The process establishes a culture of possibility.

The facilitated process lasts for one year. In that time, the most feasible synergies are identified, barriers are encountered and addressed, and action plans are created to realize the opportunities. In the second year, businesses begin to implement their action plans. Participants often continue to meet quarterly. The environmental and financial benefits are monitored and measured as they develop.

Project Goals
The goals for the By-Product Synergy implementation are to:
- Reduce waste and develop regional markets for items previously considered waste
- Reduce future landfill needs
- Preserve space for critical ecosystems
- Reduce air and water pollution
- Create a healthier community and environment
- Improve partnerships among the regional communities, industry, and government
- Create a shift in the thinking of regional industry so that they recognize waste as opportunity

Implementation Tasks & Schedule
Objective One: Recruit 10-20 participants in the geographic target area to participate in the BPS project
- *Task One:* Follow up with the organizations that expressed interest during the feasibility study and contact some of the other priority industries identified in the database
- *Task Two:* Discuss with each participant the benefits and costs of the project in educational meetings and private negotiations
- *Task Three:* Sign agreements with participants

Objective Two: Work with participants to collect process data for analysis
- *Task One:* Prepare a database to catalogue the principal inputs, outputs, and by-products of participants
- *Task Two:* Visit each participating site to collect necessary data
- *Task Three:* Compile information within the database for analysis
- *Task Four:* Establish a baseline for project evaluation

Objective Three: Identify and prioritize potential synergies

- *Task One:* Facilitate meetings with participants to brainstorm and identify potential synergies
- *Task Two:* Identify potential barriers involved with each synergy
- *Task Three:* Calculate the costs and benefits of each potential synergy including: implementation costs, long term expenses, emission reduction, discharge reduction, landfill volume reduction, and other environmental and health benefits
- *Task Four:* Prioritize synergies based on impact and feasibility

Objective Four: Prepare participants for synergy implementation

- *Task One:* Work with each participant to develop action plans and implementation strategies for their high priority synergies
- *Task Two:* Help participants identify additional information or resources needed to address lower priority synergies, including the possible addition of new partners
- *Task Three:* Work with participants to overcome barriers, bringing in additional technical or regulatory partners when needed

Objective Five: Implementation and Evaluation

- *Task One:* Assist participants in initial implementation
- *Task Two:* Monitor synergy benefits and compare to the baseline
- *Task Three:* Meet quarterly with participants to continue progress and focus
- *Task Four:* Report synergy benefits (actual and planned) on an annual basis
- Task Five: Report progress to project sponsors quarterly

	Time in Yearly Quarters							
Objectives/Milestones	**1st**	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**
1. Recruit 10-20 businesses	X							
2. Collect and analyze data		X						
3. Identify and prioritize synergies			X					
4. Prepare for synergy implementation				X				
5. Implementation and evaluation	X	X	X	X	X	X	X	X

BPS is an innovative process that helps organizations work together to reduce their environmental impacts while increasing efficiency. Organizations typically associate environmental projects with costs and regulations, but BPS helps participants begin to associate environmental projects with concepts such as revenue opportunity, increased efficiency, and partnership. This shift in thinking is a crucial step to motivate participants to take a leadership role in addressing sustainability.

The project targets the eight-county MARC jurisdiction by recruiting initial participants from within the District's boundaries. Basic data about the industries in the targeted area has already been collected to determine those organizations that are most likely to participate and generate synergies. The project targets industrial facilities and the utilities that serve them. Information gathered from past BPS projects has shown that certain sectors, such as energy, steel, and cement producers have a high likelihood of developing synergies. The project will include this type of historical information as one of the filters used to prioritize the targeted companies.

Industrial Profile – The Purpose of the Database
The Project Team built a database of the region's industrial sector to use in reviewing manufacturing diversity in the region. The database research provides background information on organizations and the region to facilitate the identification of potential participants. The database will continue to provide a framework for implementation.

Database Design Criteria
The Project Team gathered the organizational data necessary for narrowing the probability that a particular organization may be interested in participating in a BPS project. The criteria included:
- Type of industry
- Size of local facility
- Financial health of the company
- Industry affected by air/water quality regulations

Additionally, potential participants were identified if they had ties to the MARC SWMD network, voluntary environmental programs, or other programs that suggest the companies might be pre-disposed to join the project. The voluntary environmental programs included the Kansas City Environmental Excellence Business Network and the World Business Council for Sustainable Development.

Sources for the Data
Databases from the US EPA, MARC SWMD and other government and industry sources were helpful in collecting the information needed in this analysis. The data sources included:
- U.S. EPA Region 7 – database of approximately 2000 regional companies and Toxic Release Inventory data by facility
- KCMO Health Department – air permit data
- Johnson County Environmental Department – industrial pretreatment program data
- Kansas City Business Journal – Kansas City's largest employers
- World Business Council For Sustainable Development – membership list
- Certified Hazardous Materials Managers – membership list
- Environmental Excellence Business Network (EEBN) – membership and attendee lists
- Greater Kansas City Chamber of Commerce – membership directory
- Harris Infosource – Kansas and Missouri Directories of Manufacturers.

The EPA company database, constructed by Region 7 staff, incorporated NPDES listings[2] and the TRI database[3] for manufacturers in each county of the region. The Missouri Regulated Major Water User database was also included.

[2] Under the 1992 Clean Water Act, facilities that pipe wastewater into surface waters are required to obtain a National Pollution Discharge Elimination System (NPDES) permit either from the EPA or from the state if EPA has delegated authority to that state.
[3] The Toxics Release Inventory (TRI) provides information about the transfer and release of toxic chemicals from industrial manufacturing facilities. Facilities that must report to the EPA the transfer or release of their toxic chemicals are manufacturing facilities (those with a primary SIC code in the 20-39 range) with at least 10 workers that either manufacture or process more than 25,000 pounds or use more than 10,000 pounds during the year of any chemical on the TRI list of 350 toxic chemicals or chemical categories.

Parameters
The database parameters consist of general company data supplemented with information from the sources listed above. General company data included:

- Standard Industrial Classification (SIC) code
- Name and address of the organization
- State and county
- Contact name and title
- Phone number.

In addition, the following parameters were tracked for the companies in the database: Kansas City area employment, annual revenue, membership in local or world environmental organizations and priority industry rank. Andrew Mangan developed the industry priority ranking from experience on previous By-Product Synergy projects. Industries are ranked by their material and energy use, known synergies and other commercial opportunities outside the boundaries of that industry. The general financial ability of each industry to participate in a BPS project is also a factor. The Database is summarized in 4.0 Appendix – KCRBPS Database of Regional Industry.

The initial database provided by EPA included approximately 2000 regional organizations. The parameters mentioned above were used to reduce the number of organizations in the database to just over 200. The overlaying of the parameters provided selection of companies that would be most likely to participate. This overlay also showed that there would be a sufficient number of organizations in the industry that were also a high priority in terms of their potential for finding synergies. The diagram on the following page shows the industry sectors ranked according to historical priority and then shows the number of potential participants in each industrial sector from this region. The column at the right indicates that there is at least preliminary interest from many of these key industrial sectors.

By-Product Synergy Industry Evaluation by Standard Industrial Classification Code

SIC Code	Industrial Category	BPS Feasibility Project Rank (1)	Type of Industry Located in the MARC Region	Organization Listed on BPS Priority Industry Database (2)	Exhibited Positive Interest to BPS During Feasibility Study (3)
			(yes/no)	(yes/no)	(number of companies)
10	Metal Mining	1	no	na	
13	Oil and Gas Extraction	1	no	na	
14	Non-Fuel, Non-Metal Mining	1	yes	yes	1
26	Pulp and Paper	1	yes	yes	1
32	Stone, Clay, Glass and Concrete	1	yes	yes	1
33	Iron and Steel	1	yes	yes	2
33	Nonferrous Metals	1	yes	yes	
281	Inorganic Chemical	1	yes	yes	2
286	Organic Chemical	1	yes	yes	1
291	Petroleum Refining	1	no	yes	
491	Fossil Fuel Electric Power Generation	1	yes	yes	3
24	Lumber and Wood Products	2	yes	yes	
30	Rubber and Misc Plastic Products	2	yes	yes	
35	Machinery and Computer Equipment	2	yes	yes	
36	Electronic Equipment X computer	2	yes	yes	1
42	Ground Transportation	2	yes	yes	1
45	Air Transportation	2	yes	yes	
282	Plastic Resins and Man-made Fibers	2	yes	yes	
332	Metal Casting	2	yes	yes	
283	Pharmaceutical	3	yes	yes	1
371	Motor Vehicle Assembly	3	yes	yes	2
372	Aircraft and parts	3	yes	yes	
27	Printing	4	yes	yes	1
34	Metal Fabrication	4	yes	yes	
44	Water Transportation	4	yes	no	
20	Food & Kindred Products (Crop)	5	yes	yes	2
25	Wood Furniture and Fixtures	5	yes	no	
7216	Dry Cleaning	5	yes	no	
22	Textiles	6	no	na	
20	Food & Kindred Products (Livestock)	7	yes	yes	
373	Shipbuilding and Repair	7	yes	no	

(1) Based on other BPS projects, ranking shows best candidate industries for BPS implementation. Byproduct streams most desirable for synergies. 1 = highest rank; 7 is the least likely to be a BPS candidate.

(2) Priority Industry Database is included in the Appendices.

(3) Feasibility study approached a target group of companies based on KC area selection criteria. Companies representing the remaining SICs were not contacted during the feasibility study because they did not meet the initial selection criteria.

From the database of 200, a target group was selected based on specific team member knowledge. In some cases personal relationships already existed with company representatives. In other cases the companies were know to be environmentally proactive and/or active in the community. This target group of likely participants provided a baseline assessment for how the region might respond to the BPS concept. It was believed that contacting these organizations first would be a good indicator of feasibility for the project. It was also believed that if these target participants acted as the leaders and early adopters that other support would follow. The following is a list of organizations contacted and brief characterization of their individual responses:

Potential Participants Contacted

Potential Participants Visited for a Presentation

1. **Bayer Crop Science** - POSITIVE, (2/20 Bob Mann and Andrew Mangan) Bayer expressed interest in the project and planned to present it to the plant management team for decision. Representative indicated the plant might have a significant expansion in the near future, which may influence the decision on participating in the project. Representatives confirmed support to Otavio Silva, 6/20.
2. **Board of Public Utilities** - NEUTRAL, (2/18 Bob Berkebile and Andrew Mangan) BPU needed some hope of a payback. Representatives believed that $10K was a reasonable sum. The beneficial use of Type-F fly ash is priority for them. The possibility of using it as a fill in abandoned mines was discussed. The representatives expressed interested in MARC's view on this as subsidence strategy and in MARC's help in finding landowners.
3. **Ford Motor Company** - POSITIVE, (2/19 Bill Franklin & Andrew Mangan) Ford and Vivendi, Ford's waste contractor, expressed support and interest in participating. Ford representatives agreed to send information to Detroit to get corporate buy-in. Representatives said that $10K was easy to obtain but corporate would want to get involved. NEGATIVE, (4/2) Corporate responded that the plant could only participate if guaranteed a return on investment. POSITIVE (4/2) Vivendi continued to express interest.
4. **General Motors** - POSITIVE, (2/18 Bill Franklin and Andrew Mangan) GM expressed interest and support, and described various waste streams. Representatives agreed to send information to Detroit to get corporate buy-in. NEGATIVE, (3/28) Corporate expressed a desire to continue with their own in-house work similar to BPS and decided not to participate in the larger project at this time.
5. **Hallmark Cards Inc.** - POSITIVE, (Bob Mann met with Ed Van Leeuwen and other environmental officers 3/21) Hallmark responded favorably and is interested in participating.
6. **Harley Davidson Motor Company** - POSITIVE, (Bob Mann & Andrew Mangan) Harley plant manager expressed interest in the project concept, and referred to a recent conversation with a BMW executive on the East coast who was interested in working with Harley in a similar way. A letter of intent to attend May 8th informational meeting was received.
7. **Honeywell** – NEUTRAL, Andrew Mangan had a conversation with a Honeywell executive who expressed support for the project. NEGATIVE, The US Department of Energy manager, for whom Honeywell contracts, responded negatively. Andrew Mangan and Bob Berkebile intend to pursue US DOE through other contacts. The US DOE is co-funding a BPS project with Andrew Mangan in Texas. Bob Berkebile has a contact with the regional director in Chicago.
8. **JE Dunn Construction** – POSITIVE, (2/17 Bob Berkebile, Phaedra Svec & Andrew Mangan) JE Dunn representative agreed to take project information to senior executives to get a response. NEGATIVE, (3/15) Senior management declined to participate at this time. Bob Berkebile and Bob Mann intend to approach JE Dunn again in the future.
9. **Johnson County Wastewater Department** – POSITIVE, (4/23 Bill Franklin) The Administrator, Chief Engineer and Senior Engineer responded favorably to the concept. They attended the May informational meeting and contributed to the group discussion. Wastewater sludge is their principal concern.
10. **Kansas City Missouri Environmental Management Dept.** - POSITIVE, (Bob Mann & Andrew Mangan) Representatives expressed interest in and support for the project.

11. **Kansas City Power & Light** - POSITIVE, (2/19 Bob Mann and Andrew Mangan) KCPL is doing a number of things already with various fly ash streams. One specific sludge stream generated in large volumes was identified as a possible BPS candidate. Generally they are open to the concept if they can allocate the funds for the project.
12. **Lafarge Corporation Cement Group** - POSITIVE, (Bob Mann & Andrew Mangan) The Lafarge plant environmental director was interested in the project. He agreed to communicate the concept to senior management at the plant. Senior management expressed interest in the project, specifically in slag and alternative kiln fuels.
13. **Owens Corning Fiberglass** - POSITIVE, (2/19 Bob Mann and Andrew Mangan) Owens Corning representatives heard Andrew Mangan's EEBN presentation and indicated support for the concept. Owen's Corning has a zero waste goal and they are currently looking for a strategy to divert their waste from the landfill.
14. **Proctor & Gamble Manufacturing -** POSITIVE, (Bill Franklin and Andrew Mangan) P&G indicated the project had a direct connection with internal goals. In addition to the KC plant, representatives believe their other plants in the region may be interested in the project. Representatives agreed to share project information with corporate headquarters.
15. **The City of Sugar Creek, Missouri-** POSITIVE, (2/18 Jason McLennan & Andrew Mangan). A letter confirming their support was received following the meeting. Dan Cash outlined an eco-industrial park development plan for 120 acres on the former BP oil refinery site - shut down in 1982 after 80 years in operation. Dan Cash said Sugar Creek is interested in BPS because it fits into their strategy for the site. Dan suggested Lafarge, Zimmer Development and Little Blue Valley, Missouri Sewage District as possible BPS members.

Potential Participants Contacted by Letter and Introductory Packet:

1. **Bartlett Milling Company –** UNKNOWN**,** Representatives could not attend the informational meeting and interest is not known.
2. **Cargill Inc. –** POSITIVE, Representatives could not attend informational meeting but they would like future information.
3. **Colgate-Palmolive Company –** UNKNOWN**,** There was no response to the information packet.
4. **Danisc Culture USA Inc. –** POSITIVE, Representatives could not attend informational meeting but they would like future information.
5. **Galamet –** POSITIVE, Lisa Danbury met informally with a company representative. Although representatives could not attend the informational meeting, more information is requested.
6. **Good Year Tire & Rubber (Topeka) –** UNKNOWN**,** There was no response to the information packet.
7. **Hallmark Distribution Center –** POSITIVE, Representatives did attend the informational meeting and responded favorably.
8. **Harcos Chemicals Inc. –** UNKNOWN, Representatives could not attend the informational meeting and interest is not known.
9. **Kansas City Southern Railway Co. –** UNKNOWN**,** Representatives could not attend the informational meeting and interest is not known.
10. **Kaw River Shredding –** UNKNOWN, Representatives could not attend the informational meeting and interest is not known.
11. **Langley –** POSITIVE**,** Representatives did attend the informational meeting and responded favorably.
12. **Peterson Manufacturing –** UNKNOWN, Representatives could not attend the informational meeting and interest is not known.
13. **Printing and Imaging Association of Mid-America –** POSITIVE, Representatives could not attend informational meeting but they would like future information.
14. **Rineco -** POSITIVE, Representatives could not attend informational meeting but they would like future information.
15. **Thyssenkrupp Stahl Company -** POSITIVE, Representatives could not attend informational meeting but they would like future information.

16. **United States Gypsum Company -** POSITIVE, Representatives could not attend informational meeting but they would like future information, particularly financial information.
17. **VT Inc. -** UNKNOWN, Representatives could not attend the informational meeting and interest is not known.
18. **Weld Racing Inc. –** NEGATIVE, They were not interested at this time.
19. **West Star Energy –** UNKNOWN, There was no response to the information packet.

Potential Public Sector Sponsors Contacted

In addition to the potential participants, the team also met with public sector organizations to gain political, regulatory and financial support for the project. The following is a list of the organizations that were visited for a presentation:

1. MARC Solid Waste Management District Board
2. EPA Region 7 & EPA Headquarters
3. Department of Energy
4. Environmental Improvement and Energy Resources Authority (EIERA)
5. Missouri Department of Natural Resources
6. Kansas Department of Health & the Environment
7. Kansas City Commission on the Environment
8. Kansas City Chamber of Commerce
9. City of Kansas City, Missouri
10. Jackson County, Missouri
11. City of Sugar Creek, Missouri
12. Johnson County, Kansas

The City of Sugar Creek, Missouri

The City of Sugar Creek, located within the project's core geographic focus area, represents a special case in the context of this feasibility study. At the time of the Team's meeting with the City of Sugar Creek the City was finalizing arrangements to develop 120 acres of a former BP oil refinery site as an eco-industrial park. If achieved the park would serve as a site for new and existing industries to co-locate for the express purpose of reusing waste products between industries. If an orphan waste steam is identified during the BPS Process at the same time that a participant emerges to develop a market using that waste stream, then an eco-industrial park could provide a place to develop this synergy. Based on this concept the City of Sugar Creek could become an important participant in the Kansas City Regional By-Product Synergy Initiative. Participation in the BPS project would enhance the likelihood of finding such synergistic relationships.

In February, members of site team met with Dan Cash, director of economic development for Sugar Creek and the one responsible for developing the site for the City. Dan Cash explained that BP had conducted a site cleanup under the Resource and Conservation Recovery Act on the land and was finalizing a 99-year lease with the City of Sugar Creek for the property. Under the lease agreement, he anticipated receiving $11 million in development dollars from BP, which had also indicated it would build roads, and provide electricity and water connections for future developments on the site. Dan Cash said that the first 40 acres of the site were likely to include a community center and perhaps other similar structures. The remaining acreage did not yet have specific development plans established. The site is bordered on three sides by City boundaries and by the Missouri River on the fourth side. Lafarge Cement plant and other heavy industries are located nearby. In addition, the nearby Little Blue Valley Sewage District may be contemplating an $80 million expansion.

Dan Cash said the City had reached the decision to pursue the eco-park approach after seeking advice from a local developer, Hugh Zimmer. Given the age of the site (opened in 1904), community concerns and perceptions about possible contamination, Hugh Zimmer's recommendation was that Sugar Creek could not compete with other industrial parks in the region unless it was developed as an eco-industrial park.

Dan Cash raised a question about whether participation in the BPS project could help the City identify companies that might establish operations at the Sugar Creek eco-industrial site. By participating in the BPS project the City would be exposed to the reuse needs, technologies and possibilities that are uncovered during the process. The eco-industrial park would be part of a collaborative analysis of each synergy possibility and would have the opportunity to prioritize the possible synergies. Through this expository process, the chances of finding companies to co-locate at the Sugar Creek site would be significantly increased.

To support the efforts of the City of Sugar Creek, Bob Mann met with Hugh Zimmer to discuss the possibility of incorporating the BPS concept into his company's proposal to the City of Sugar Creek for the development of an eco-industrial park. Hugh Zimmer said he had already provided his input to the City of Sugar Creek on how to successfully develop the site, suggesting that it be developed as an eco-industrial park where companies would co-locate and use one another's waste streams as raw material inputs. He agreed to incorporate a recommendation to participate in the BPS project in his proposal to the City.

Potential Barriers
Mixed responses are typical during the BPS recruiting efforts. The concept is new and not yet clearly defined as a project in this region. Early adopters are generally those willing to take a risk in order to find what could be the next big opportunity. Many of the potential participants saw the potential of the concept and are the types of organizations with a history of leading by example.

One potential barrier to the project in Kansas City might be that many local plant officials do not have final authority and must defer to corporate headquarters. In some cases if the project facilitation team can arrange a follow up presentation directly with corporate headquarters, the initial negative responses can be overturned.

Another potential barrier is the state of the present economy. At the moment many organizations are in a conservative spending pattern and are looking for a guaranteed return on every investment. The nature of BPS cannot know in advance what the tangible returns might be. A few of the participants may not be interested in participating until the process uncovers a synergy related to their waste management goals. These organizations may be candidates to participate mid-process or in the second year.

Recruitment Process
The recruitment process will continue throughout the summer of 2003 and will be continuous throughout the project. In the feasibility study the team met with a priority list of companies that were thought likely to participate. Implementation will require an extension of this initial recruitment effort to broaden the range of participants and to follow up on initial responses. The additional list of companies that were contacted by mail and telephone received packets of information on the project. Those who expressed interest in learning more about the initiative need to have an initial presentation.

Recruitment is not easy. Organizations do not have direct motivation to participate in a project such as this through tax incentives or other benefits. Although positive interest has been expressed by potential participants, the project team will have to convince 10-20 companies that it is worth their time and resources to participate. The team is prepared to do this recruitment work with Otavio Silva of Bridging The Gap as the coordinator supported by Andrew Mangan, Bob Mann and the rest of the team as needed. Funding for this work is expected to come from a grant approved by the EPA.

2.5 FACILITATED DIALOG AMONG THE SPONSORS & POTENTIAL PARTICIPANTS

Discussion and analysis of the prospective project was facilitated through formal and informal communications among sponsors, potential participants, regulators, non-government organizations and academic communities to help develop a clear understanding among key participants. Members of the Environmental Excellence Business Network and its Steering Committee were helpful in assuring the inclusion of appropriate partners.

Three facilitated dialogue sessions were held during the course of the feasibility study. They were designed to educate the Advisory Committee members and to seek their input as the project progressed. Minutes of these meetings were recorded and submitted to MARC-SWMD. The meeting notes are attached as 5.0 Appendix.

Summary of Interested Participants

Through a combination of meetings, letters and information packets the Project Team identified a list of regional organizations that has expressed interest in participating in the Kansas City Regional By-Product Synergy Initiative. The following is a list of 22 organizations that expressed sufficient interest to further justify interaction during the implementation process:

1. Bayer Crop Science
2. Cargill Inc.
3. Danisc Culture USA Inc.
4. Ford Motor Company
5. Galamet
6. Hallmark Cards Inc.
7. Harley Davidson Motor Company
8. Honeywell
9. Johnson County Wastewater Dept.
10. Kansas City Missouri Water Dept.
11. Kansas City Missouri Environmental Management Dept.
12. Kansas City Power & Light
13. Kaw River Shredding
14. Lafarge Corporation Cement Group
15. Langley
16. Owens Corning Fiberglass
17. Printing and Imaging Association of Mid-America
18. Proctor & Gamble Manufacturing
19. Rineco
20. The City of Sugar Creek Planning/Community Development
21. Thyssenkrupp Stahl Company
22. United States Gypsum Company

Summary of Grant Applications

In addition to gauging private sector interest, the Project Team identified and briefed a select number of public sector leaders seeking financial, regulatory and policy support for the project. Several asked the Team to prepare grant applications for the project. The applicant and grant amounts are listed below.

- US Environmental Protection Agency Region 7, Technology Innovations, Bridging The Gap, $75,000 This grant has been awarded.
- US Environmental Protection Agency Region 7, Regional Geographic Initiative, Bridging The Gap, $100,000 This grant will not be awarded because of the successful award of the Technology Innovations grant.
- Environmental Improvement and Energy Resources Authority (EIERA), Bridging The Gap, $50,000
- MARC Solid Waste Management District, to be determined.

2.6 RECOMMENDATIONS AND CONCLUSIONS

Summary of Project Feasibility
The Project Team has come to the following conclusions:

- There is a need for the BPS project in this community.
- The geographic breadth is adequate to generate sufficient diversity of industries.
- There is sufficient private sector interest in the project.
- There is sufficient political and governmental support for the project.
- The project is feasible as long as a sufficient number of the potential participants become fee-paying participants and a number of the public sector grants are realized.

The Project Team has the following recommendations:

- The implementation phase should be initiated by EEBN and Bridging The Gap.
- A percentage of the revenues or savings realized throughout the process should be set aside to support EEBN and the project in its second year and beyond.
- The project should pursue public funding.
- The agreements with private entities should be drafted as soon as possible to avoid a loss of momentum.
- Target for the project kick-off should be fall of 2003.

Recommended Team Roles for Implementation:
The project team suggests the following roles and responsibilities during the implementation process:

EEBN and Bridging The Gap will serve as project managers for the implementation process. They will handle the communications, reporting, logistics, budgeting and billing. Otavio Silva will coordinate the recruitment process throughout the summer and will serve as project manager for the implementation phase. Bob Mann will serve as the primary facilitator for the group meetings with participants.

Andrew Mangan will bring the history of previous BPS projects to the Kansas City project. He will serve as a technical advisor to the team and assist with the facilitated dialog sessions.

The Elements Division of BNIM will design the collaborative environment and presentation content required for successful facilitated dialog sessions. Elements will help to educate participants about sustainable design and holistic thinking.

Franklin Associates will serve as technical advisors, analysts, and data collection coordinators. They will participate in the facilitated dialog sessions. They will also coordinate any outside technical consultants that may be required during synergy identification.

MARC SWMD will serve as the public sector liaisons bringing the goals of the district to the project participants as well as carrying the concerns of the participants to the sponsors in the district.

Estimated Project Implementation Timeline

The following is a timetable for the 9-12 months facilitated process:

Task	Oct 03	Nov	Dec	Jan 04	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Facilitated Meetings												
Data Collection												
Prioritization												
Synergy Implementation												
Working Groups												
Overcoming Barriers												
Action Plans												

2.7 FEASIBILITY STUDY PROJECT MANAGEMENT STRATEGY

The Project Manager was responsible for the overall management and reporting of the BPS project, working directly with the Regional Project Coordinator. The Project Manager and Project Coordinator ensured the project was conducted according to the contract agreement. These two lead communications with the MARC SWMD Advisory Committee and were responsible for providing monthly status reports summarizing performance.

3.0 FEASIBILITY STUDY SCHEDULE AND MILESTONES

The feasibility study was completed in a six-month time frame. See the following schedule for a review of the timeline for the feasibility study.

Task	Dec '02	Jan '03	Feb	Mar	Apr	May	Jun
Build BPS Team							
Assess Methodology							
Determine Breadth							
Educate and Engage							
Facilitate Dialogue				Dialogue		Dialogue	
Recommendations							
Project Management							

4.0 APPENDIX - KCRBPS DATABASE OF REGIONAL INDUSTRY

The complete database used to create the priority list of potential project participants has been attached. The database includes the 200 priority industries. A second tab within the worksheet serves as a key for the priority ranking numbers in the database.

5.0 APPENDIX – MEETING NOTES

The meeting notes for the three facilitated dialog sessions during the feasibility study are attached. The meetings were held on January 23rd, March 7th, and May 8th, 2003. They are 5.1, 5.2 and 5.3 respectively. Three attachments that were presented with the to the May 8th meeting are also attached. The first, 5.4, is a letter of support from the EPA. The second 5.5, is a record of a brainstorming exercise. The third, 5.6 is the meeting attendance sheet.

4.0 APPENDIX - KCRBPS DATABASE OF REGIONAL INDUSTRY

MARC Region
Sorted by Company Name

	SIC	PRIMARY_NAME	CITY	COUNTY_	ADDRESS	STATE_	ZIP CODE	SIC Prioritization	WBCSD member	EEBN	Top Manuf	Number Employees	2001 revenues	Contact	Title	phone	email	comments
Sheet Metal Work	3444	ACCESS INDUSTRIES	KANSAS CITY	JA	8045 INDIANA	MO	64132	9				200	10-24.9m					
Elevators & Moving Stairways	3534	ACCESS INDUSTRIES INC	GRANDVIEW	JA	4001 EAST 138TH STREET	MO	64030	7				350						
Molded,Extruded,Lath-Cut	3061	ACOUSTISEAL INC	KANSAS CITY	JA	8485 PROSPECT AVENUE	MO	641322376	7				330						
Flat Glass	3211	AFG INDUSTRIES INC	SPRING HILL	JO	20400 N. WEBSTER	KS	66083	6				300	50-99.9m					
Printed Circuit Boards	3672	ALLIED SIGNAL AVIONICS INC	OLATHE	JO	400 NORTH ROGERS ROAD	KS	660621294	7										
Airports, Flying Fields & Term. Svcs	4581	AMERICAN AIRLINES INC	KANSAS CITY	PL	9200 NORTHWEST 112TH STRMO		64153	7				3200						
Food Preparations NEC	2099	AMERICAN INGREDIENTS CO	KANSAS CITY	JA	3947 BROADWAY	MO	64111	10				75						
Food Preparations NEC	2099	AMERICAN INGREDIENTS CO.	GRANDVIEW	JA	13830 BOTTS ROAD	MO	640300740	10				90						
Asphalt Paving Mixtures & Blocks	2951	APAC MISSOURI INC.	HARRISONVILL	CA	19100 E 231ST ST	MO	64701					75	8.42b					
Sausages & Other Prepared Meat	2013	ARMOUR SWIFT ECKRICH INC	KANSAS CITY	WY	4612 SPEAKER ROAD	KS	66106	12				500	100-499.9m					
Conveyors & Conveying Equipment	3535	AUTOMATIC SYSTEMS INC	KANSAS CITY	JA	9230 E. 47TH ST.	MO	64133	7				250	24-49.9m					
Pharmaceutical Preparations	2834	AVENTIS PHARMACEUTICALS INC	KANSAS CITY	JA	10236 MARION PARK DRIVE	MO	641370000	8	X		X	800	500-999.9m					
Aluminum cans	3411	Ball Metal Beverage Container Corp.	KANSAS CITY	JA	1800 Reynolds Avenue	MO	64120	6				205	50-99.9m					
Commercial Printing: Lithograph	2752	BANTA PUBLICATIONS	LIBERTY	CL	3401 HEARTLAND DRIVE	MO	64068	9				450	50-99.9m					
Flour & Other Grain Mill Products	2041	BARTLETT AND COMPANY	KANSAS CITY	JA	4800 MAIN SUITE 600	MO	64112					600	800M	John Gillcristz	President	816-753-6300	www.bartlettandco.com	
Printing Ink	2893	BASF CORP.	KANSAS CITY	JA	1130 ELMWOOD AVE.	MO	64127		X									
Top, Body,Upholstery,Repair & Paint	7532	BASF CORPORATION INMONT DIVISION	RIVERSIDE	PL	500 NW BUSINESS PARK LANIMO		64150		X									
Drugs,Proprietaries,Druggists Sundries	5122	BAYER CORP	KANSAS CITY	WY	5101 SPEAKER ROAD	KS	66106		X		X		NA					
Crop Planting,Culti,Protect. & Dusting	721	BAYER CORP. AGRI. DIV.	STILWELL	JO	17745 S METCALF	KS	660850000		X	M	X		NA					
Industrial Inorganic Chemicals, NEC	2819	BAYER CORP. AGRICULTURE DIV.	KANSAS CITY	JA	8400 HAWTHORN ROAD	MO	641202301	6	X	M	X	1100	NA	Mark Tice		(816) 242-2244 (816) 242-2000	mark.tice@bayercropscience.com	
Pharmaceutical Preparations	2834	BAYER CORP. Intervet, Inc.	SHAWNEE	JO	12707 W 63RD ST, UNIT A	KS	662161846	8	X	M	X	450	100-499.9mm					
Electric Services	4911	BOARD OF PUBLIC UTILITIES	KANSAS CITY	WY	540 Minnesota	KS	66102	6						Bill Kamm	Director of production Su	(913) 573-6802	bkamm@bpu.com	Leah Ellis Environmental Scientist (913) 573-9828 300 N. 65th St Kansas City ,KS 66102 leae@bpu.com
Electric Services	4911	BOARD OF PUBLIC UTILITIES KAW	KANSAS CITY	WY	2015 KANSAS AVE	KS	66105	6										
Sewerage Systems	4952	BONNER SPRINGS WWTP	BONNER SPRI	WY	12021 KAW DRIVE	KS	66111											
Water Supply	4941	BPU - (KC)NEARMAN WATER TREATM	KANSAS CITY	WY	700 MINNESOTA AVE	KS	66101											
Setup Paperboard Boxes	2652	BURD & FLETCHER	INDEPENDENC	JA	5151 EAST GEOSPACE	MO	64056	6				100	10-24.9m					
Printing service	2759	BURD & FLETCHER	INDEPENDENC	JA	3000 EAST GEOSPACE	MO	64056	6				125	10-24.9m					
Diesel locomotive repair service	4789	BURLINGTON NORTHERN SANTA FE RAIL Y/	KANSAS CITY	WY	2201 ARGENTINE BOULEVARD	KS	66106	7				500	50-99.9m					
Farm Machinery & Equipment	3523	BUTLER MANUFACTURING CO.	KANSAS CITY	JA	7400 EAST 13TH STREET	MO	64126	7			X		897 mill					
Soybean Oil Mills	2075	CARGILL INC	KANSAS CITY	JA	2306 ROCHESTER STREET	MO	641201546	10	X			40	50-99.9m	Robert Boardman	Kansas City Plant Mana	816-245-0500		Joseph Botos, VP Environment Health & Safety. 15407 McGinty Road West, P.O. Box 9300 MS 56, Minneapolis, MN 55440-9300
Prepar. Feeds & Ingred-Animal & Fowl	2048	CARGILL INC ANIMAL NUTRITION DIVISION, N	KANSAS CITY	WY	44 EWING ST.	KS	66118	10	X			50	25-49.9m					
Flour & Other Grain Mill Products	2041	CARGILL INC FLOUR MLG DIV	KANSAS CITY	JA	1550 WEST 29TH STREET	MO	64108	10	X									
Mineral Wool	3296	CERTAINTEED CORP.	KANSAS CITY	WY	103 FUNSTON RD.	KS	66115	6				500	50-99.9m					
Electrometallurgical Prod, X Steel	3313	CLAY & BAILEY MANUFACTURING CO.	KANSAS CITY	JA	6401 EAST 40TH ST	MO	64129	6				100	10-24.9m					
Bottled & Canned Soft Drinks,Carb.Wtr	2086	COCA COLA BOTTLING CO. MID AMERICA	LENEXA	JO	9000 MARSHALL DRIVE	KS	66215	10	X			200	14.8b corp wide					
Soaps & Other Detergents,X Sp Clean	2841	COLGATE PALMOLIVE CO.	KANSAS CITY	WY	1806 KANSAS AVE	KS	661051124	6			X	500	9.4 bill	Kevin Dirks	Environmental Engineer	913-371-3232		
Plastics Bottles	3085	CONSTAR PLASTICS	KANSAS CITY	WY	801 SOUTH 7TH STREET	KS	66105	7				100	10-24.9m					
Plastics Foam Products	3086	CONTOUR PRODUCTS INC	KANSAS CITY	WY	4001 KAW DRIVE	KS	66102	7				100						
Plastics Mtl,Syn.Resins,Nonvul.Elasto.	2821	COOK COMPOSITES & POLYMERS CO.	N KANSAS CIT	CL	820 EAST 14TH AVENUE	MO	64116	7			X	214	35.4 mill					
Meat Packing Plants	2011	COOK FAMILY FOODS	KANSAS CITY	JA	13825 WYANDOTTE	MO	64145	12				250						
Food Preparations NEC	2099	DANISCO CULTOR USA INC	NEW CENTURY	JO	201 NEW CENTURY PKWY	KS	660310026	10	X			150		Shirley McCann	Safety & Regulatory	913-764-8100 x 1177		Joe Mulligan Quality System Manager 913-764-8100 x 1331
Conveyors & Conveying Equipment	3535	DEARBORN MID WEST CONVEYOR CO.	KANSAS CITY	WY	2601 MID-WEST DR	KS	661110000	7				207	24-49.9m					
Storage Batteries	3691	DELPHI AUTOMOTIVE SYSTEMS CORP.	OLATHE	JO	400 WEST DENNIS AVENUE	KS	66061	7				440	100-499.9mm					
Construction Mach. & Equipment	3531	DIAMANT BOART INC	OLATHE	JO	17400 W. 119TH ST.	KS	66061	7				200						
printed pressure sensitive labels	7389	Dot Label Inc	GARDNER	JO	147 Cherokee St							100	5-9.9mm					
Motors & Generators	3621	EMERSON VENTILATION PRODUCTS; Emerso	LENEXA	JO	10048 INDUSTRIAL BLVD	KS	66215	7				145						

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	SIC	PRIMARY_NAME	CITY	COUNTY_	ADDRESS	STATE_	ZIP CODE	SIC Prioritization	WBCSD member	EEBN	Top Manuf	Number Employees	2001 revenues	Contact	Title	phone	email	comments
Storage Batteries	3691	EXIDE TECHNOLOGIES INC, GNB Brand Prodi	KANSAS CITY	WY	3001 FAIRFAX TRAFFICWAY	KS	66115	7				240	50-99.9m					
Paint,Varnish,Lacquers,Enamel, Prod	2851	EXXON CO. SW GREASE BUSINESS Exxon M	OLATHE	JO	1400 S HARRISON	KS	66061					154	50-99.9mm					
Semiconductors & Related Devices	3674	FABTECH INC	LEES SUMMIT	JA	777 NORTHWEST BLUE PARK	MO	640865709	7				155	50-99.9m					
Spec. Clean,Polish, & Sanitation Prep.	2842	FAULTLESS STARCH BON AMI CO.	KANSAS CITY	JA	1025 W. 8TH STREET	MO	641011200					180						
Spec. Clean,Polish, & Sanitation Prep.	2842	FAULTLESS STARCH BON AMI CO.	KANSAS CITY	JA	1009 W 8th st	MO	641011207					80	24-49.9m					
Fabricated Metal Products NEC	3499	FIKE METAL PRODUCTS CORP.	BLUE SPRINGS	JA	704 SOUTH 10TH STREET	MO	64014	9				250	130m					
Roasted Coffee	2095	FOLGERS COFFEE CO.	KANSAS CITY	JA	701 BROADWAY	MO	64141	10		A		275	100-499.9m					
Motor Vehicles & Pass. Car Bodies	3711	FORD MOTOR CO. KANSAS CITY ASSEMBLY	KANSAS CITY	JA	PO BOX 11009 ANTIOCH STAT	MO	641195253	8	X		X	6000	1-9.9b	Ghani Baig	Environmental Plant Eng	816-459-1427		Steve Johnson Onyx (send information to Steve through Ghani) sajohnson@superiorserv.com
Hardware, NEC	3429	FOUNDATION WORKSHOP INC	GRANDVIEW	JA	12600 3RD ST	MO	64030	9				115						
Phosphorus	2819	FMC/ASTARIS	LAWRENCE	DG	440 NORTH 9TH ST	KS	66044							Shane Munsch		785-749-8160		
Hand-Edge Tools,X Mach Tools,Saws	3423	FREDERICK MANUFACTURING CORP.	KANSAS CITY	JA	4840 EAST 12TH STREET	MO	64127	9				150	10-24.9m					
Plastics, Foil, & Coated Paper Bags	2673	FRONTIER BAG INC	KANSAS CITY	JA	5720 EAST 150 HIGHWAY	MO	64146	6				55	5-9.9m					
Auto shredding	3341	GALAMET INC	KANSAS CITY	JA	3005 MANCHESTER TRFY	MO	64129-1304	6						Marienne Galamba-Brown	Marketing	816-861-2700		
Motor Vehicles & Pass. Car Bodies	3711	GARSITE INC	KANSAS CITY	WY	539 S. 10TH	KS	66105	8				95						
Automotive Stamping	3465	GASKET ENGINEERNG CO INC	KANSAS CITY	JA	4500 E 75TH TERR	MO	64132	9				100	10-24.9m					
Flour & Other Grain Mill Products	2041	GENERAL MILLS OPERATIONS	KANSAS CITY	JA	2917 GUINOTTE AVENUE	MO	64120	10				200	100-499.9m					
Motor Vehicles & Pass. Car Bodies	3711	GENERAL MOTORS CORP. FAIRFAX PLANT	KANSAS CITY	WY	3201 FAIRFAX TRAFFICWAY	KS	66115	8	X	M	X	4200	NA	Kevin Brown	Sr. Environmental Engin	913-573-7355		
Corrugated & Solid Fiber Boxes	2653	GEORGIA PACIFIC CORP.	KANSAS CITY	CL	8600 NE 38TH STREET	MO	64161	6				150	25-49.9m					
pressure sensitive screen printed signs	2752	Gill Studios Inc	Lenexa	JO	10800 Lackman Rd	KS	66219				X	500	50 mill					
Rubber & Plastic Hose & Belting	3052	GILMOUR MANUFACTURING	EXCELSIOR SP	CL	140 CORUM RD	MO	64024	7				175	25-49.9m					
aircraft deicers	3537	GLOBAL GROUND SUPPORT	OLATHE	JO	540 EAST HIGHWAY 56	KS	66061	7				72	10-24.9mm					
Rubber Products	3011	GOODYEAR TIRE AND RUBBER	TOPEKA	SN	2000 NW WEST 24TH	KS	66608-1956	7						Alan Stueve	Director	785-295-7111		
vinyl shelf, bar code labels	2671	Graphic Technology Inc	New Century	JO	301 Gardner Dr	KS	66031				X	185	68 mill					
Misc Fabricated Wire Products	3496	GREAT WESTERN MANUFACTURING CO. INC	LEAVENWORTH	LV	2017 S. 4TH ST.	KS	66048	7				110	10-24.9m					
Fiber Cans,Tubes,Drums,&Sim Prod.	2655	GREIF BROTHERS CORP.	KANSAS CITY	WY	3341 N.7TH STREET TRFWY	KS	66115	6				25	1-4.9m					
Steel Foundries, NEC	3325	GRIFFIN WHEEL CO. KANSAS CITY PLANT	KANSAS CITY	WY	7111 GRIFFIN RD.	KS	66111	7				180						
Aircraft Parts & Aux. Equipment, NEC	3728	GROWTH INDUSTRIES INC	GRANDVIEW	JA	12523 3RD ST	MO	64030	8				100						
Greeting Cards	2771	HALLMARK CARDS INC	KANSAS CITY	JA	2501 MCGEE	MO	64108	9		M	X	5900	4 bill	Edward VanLeeuwen	Environmental Issues M	816-274-4047		
Greeting Cards	2772	HALLMARK CARDS INC	LAWRENCE	DG	PO BOX 99 MD 173	KS	66044-0099	9						Susan Rodgers	Environmental Administr	785-843-9050 x 115		
Water Supply	4941	HANSEN WATER TREATMENT PLANT	KANSAS CITY	WY	7601 HOLLIDAY DRIVE	KS	66106											
Industrial Inorganic Chemicals, NEC	2819	HARCROS CHEMICALS INC KANSAS CITY	KANSAS CITY	WY	5200 SPEAKER ROAD	KS	66106	6				150	25-49.9m	Kevin Mirner	President	913-321-3131		assistant - Susan
Industrial Tow Tractors & Forklift Parts	3537	HARLAN TRACTOR CORP	KANSAS CITY	WY	27 STANLEY RD	KS	66115	7				150	24-49.9m					
Motorcycles, Bicycles & Parts	3751	HARLEY DAVIDSON MOTOR COMPANY	KANSAS CITY	PL	11401 NORTH CONGRESS AVI	MO	64153	8			X	947	3.4 bill	Bruce Bowers		816-842-7655		
Commercial Printing: Lithograph	2752	HARMONY PRINTING & LITHOGRAPHY	LIBERTY	CL	1200 EAST 210 HIGHWAY	MO	64068	9				100	10-24.9m					
Industrial Process furnaces and ovens	3567	HEATRON INCORPORATED	LEAVENWORTH	LV	3000 WILSON AVENUE	KS	66048	7				200	25-49.9m					
Commercial Printing: Lithograph	2752	HENRY WURST INC.	NORTH KANSA	CL	1331 SALINE ST	MO	64116	9				334	107.5m					
Air-Cond & Warm Air Heating Equip	3585	HOBART CORP.	KANSAS CITY	WY	401 FUNSTON ROAD	KS	66115	7				200	25-49.9m					
Electronic Components NEC (weapon compo	3679	HONEYWELL FEDERAL MANUF & TECHNO; LI	KANSAS CITY	JA	2000 EAST 95TH STREET	MO	64131	7			X	3000	406 mill	Bob Beauchamp	Manager for Environmen	816-997-3586		
Search,Detect,Navig,Guid Sys & Instru	3812	HONYEWELL INTL. INC.	OLATHE	JO	23500 WEST 105TH STREET	KS	66061			M	X	1300	100-499.9mm					
Manufacturing Industries, NEC	3999	HOWELL MOULDINGS	NEW CENTURY	JO	201 OVERLAND PARK PL.	KS	66031					70	5-9.9mm					
Sanitary Food Containers, X Folding	2656	Huhtamaki SEALRIGHT PACKAGING CO.	DE SOTO	JO	9201 PACKAGING DRIVE	KS	66018	6				300	NA					
Corrugated & Solid Fiber Boxes	2653	INLAND CONTAINER CORP.	KANSAS CITY	WY	2101 KANSAS AVE.	KS	66105	6				110	10-24.9m					
Construction Mach. & Equipment	3531	INTERCONTINENTAL ENGR. & MFG	RIVERSIDE	PL	1000 NORTHWEST INTERCON	MO	64151	7				90						
Corrugated & Solid Fiber Boxes	2653	INTERNATIONAL PAPER CO.	KANSAS CITY	WY	401 KINDELBERGER ROAD	KS	66115	6	X			100	10-24.9m					
Corrugated & Solid Fiber Boxes	2653	INTERNATIONAL PAPER CORP.	KANSAS CITY	JA	4343 CLARY BOULEVARD	MO	64130	6	X			100	10-24.9m					

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	SIC	PRIMARY_NAME	CITY	COUNTY_	ADDRESS	STATE_	ZIP CODE	SIC Prioritization	WBCSD member	EEBN	Top Manuf	Number Employees	2001 revenues	Contact	Title	phone	email	comments
Bread, Cake, & related Products	2051	INTERSTATE BAKERIES CORP.	KANSAS CITY	JA	12 E ARMOUR BOULEVARD	MO	64111	10			X	115	3.5 bill					
Bread, Cake, & related Products	2051	INTERSTATE BRANDS CORP.	LENEXA	JO	8960 MARSHALL DRIVE	KS	66215	10				200	3.5b corporate wide					
Printing Ink	2893	INX INTERNATIONAL INK CO.	EDWARDSVILL	WY	2647 S 96TH ST	KS	66111-0000					80	25-49.9					
Spec. Clean,Polish, & Sanitation Prep.	2842	ITW DYMON	OLATHE	JO	805 EAST OLD 56 HIGHWAY	KS	66061-0000					100	9.29b corp wide					
Construction	1522	JE DUNN	KANSAS CITY	JA	929 HOLMES	MO	64106-2682							Dirk Schafer	Sr. VP	816-391-2678		assistant - Dorothy
		JOHNSON COUNTY WASTEWATER	SHAWNEE MIS	JO	73110W 130TH SUITE 100	KS	66213							Douglas Smith	Wastewater Administratc	913-681-3200 x 2114		John Metzler Chief Engineer x 2107
		JOHNSON COUNTY WATER DISTRICT 1	LENEXA	JO	10747 RENNER BLVD	KS	66219							Michael Armstrong		913-895-5513		assistant - Jill
		JOHNSON COUNTY ENVIRONMENTAL DEPT	LENEXA	JO	11180 THOMPSON AVE SOUTH	KS	66219							Cindy Kemper	Director	913-492-0402		
Conveyors & Conveying Equipment	3535	K C I INC	KANSAS CITY	JA	1639 GUINOTTE	MO	641201497	7				150	10-24.9m					
Abrasive Products	3291	KANSAS CITY ABRASIVE CO. INC	KANSAS CITY	WY	3140 DODGE ROAD	KS	661151287	6				23	1-4.9m					
Electric Services	4911	KANSAS CITY KANSAS BOARD OF PUBLIC U	KANSAS CITY	WY	7TH AND MINNESOTA AVE	KS	66101	6										
		KANSAS CITY MISSOURI ENVIRONMENTAL M	KANSAS CITY	JA	324 EAST 11TH ST, 18TH FLOO	MO	64106							John Stufflebean	Director	816-513-3484		Larry Falkin Assistant Director for Environmental Compliance 816-513-3600 x 33456
		KANSAS CITY MISSOURI WATER DEPT	KANSAS CITY	JA	414 EAST 12TH ST	MO	64106							Frank Pogge	Director	816-513-1400	water@kcmo.org	
Water Supply	4941	KANSAS CITY MISSOURI WTP	KANSAS CITY	CL	1 NW BRIARCLIFF RD	MO	64116					100						
Electric Services	4911	KANSAS CITY POWER & LIGHT CO	KANSAS CITY	JA	115 GRAND AVE	MO	64106	6				40						
Electric Services	4911	KANSAS CITY POWER & LIGHT CO	OVERLAND PA	JO	8730 NIEMAN	KS	66214	6										
Electric Services	4911	KANSAS CITY POWER & LIGHT CO.	KANSAS CITY	JA	8700 HAWTHORNE ROAD	MO	641202303	6				184		Frederick Gustin	Generation By-Products	816-556-2108		John Horn Sr. Environmental Specialist 816-556-2207 PO BOX 418679 KC, MO 64141-9679
Electric Services	4911	KANSAS CITY POWER & LIGHT-NE STA	KANSAS CITY	JA	920 NORTH OLIVE STREET	MO	64120	6				6						
Electric Services	4911	KANSAS CITY POWER AND LIGHT	KANSAS CITY	JA	4400 EAST FRONT STREET	MO	64141	6		M		389						
Railroads-Line Haul Operating	4011	KANSAS CITY SOUTHERN RAILWAY CO.	KANSAS CITY	JA	427 WEST 12TH ST	MO	64105	7				100	575.8m	Chet Culley	General Director	816-983-1303		
Sewerage Systems	4952	KANSAS CITY TTP #20	KANSAS CITY	WY	2443 SOUTH 88TH STREET	KS	66111											
Sewerage Systems	4952	KANSAS CITY WATER POLLUTION CONTROL	EDWARDSVILL	WY	2443 S. 88TH ST.	KS	66113											
Sewerage Systems	4952	KANSAS CITY WATER POLLUTION CONTROL	KANSAS CITY	WY	50 MARKET STREET	KS	66117											
Sewerage Systems	4952	KANSAS CITY-CITY OF TRT PL #14	KANSAS CITY	WY	700 MINNESOTA AVE	KS	66101											
Metal	7389	KAW RIVER SHREDDING	KANSAS CITY	WY	1153 SOUTH 12TH ST	KS	66105							Jim Porter	Director of Ferrous Proc	913-621-2711		
Airports, Flying Fields & Term. Svcs	4581	KCI AIRPORT KCMO AVIATION DEPARTMENT	KANSAS CITY	PL	601 BRASILIA AVE	MO	64153	7				419						
Cookies & Crackers	2052	KEEBLER FOODS CO.	KANSAS CITY	WY	801 SUNSHINE RD.	KS	66115	10				720	100-499.9m					
Steam,Gas,Hydr-Turbines & Gen.Sets	3511	LABCONCO CORP.	KANSAS CITY	JA	8811 PROSPECT AVENUE	MO	64132	7				175	34.84m					
Metals recycler	7389	LANGLEY	KANSAS CITY	JA	2557 STADIUM DRIVE	MO	64129							Blaine Liebig	VP	816-924-8452		
Crushed & Broken Limestone	1422	LAFARGE CORP CEMENT GROUP	SUGAR CREEK	JA	2200 NORTH COURTNEY RD	MO	64050	6	X	M		30	5-9.9m	Steve Kidwell	Environmental Engineer	816-257-5179	Steve.kidwell@lafarge-na.com	
	1422	LAFARGE NORTH AMERICA INC	LEE'S SUMMIT	JA	600 S.W. JEFFERSON ST. SUITE 302		64063	6						David Watson	Alternative Fuels and Ma	816-251-2120		
		Lake City Army Ammunition Plant	INDEPENDENC	JA	P.O. BOX 1000	MO	64051-1000											
Commercial Printing: Lithograph	2752	LIFE TOUCH PUBLICATIONS	KANSAS CITY	PLATTE	10800 N. Ambassador Drive	MO	64153					255	50-99.9					
Minerals & Earths,Ground or Treated	3295	LITE WEIGHT PRODUCTS INC	KANSAS CITY	WY	1706 KANSAS AVE.	KS	66110	6				5	50-999k					
Com,Ind,Institut,Electric Lighting Fixture	3646	LSI MIDWEST LIGHTING INC, LSI Industries	KANSAS CITY	WY	100 FUNSTON RD.	KS	66115	7				200	25-49.9m					
Aluminum Die-Castings	3363	LYONS DIECASTING CO	BUCKNER	JA	2300 N HOLLY RD	MO	64016	6				65	5-9.9m					
Unsupported Plastics Film & Sheet	3081	MARLEY COOLING TOWER CO.	OLATHE	JO	MARLEY & LONE ELM RDS.	KS	66061	7			X	125, 220	10-24.9, 25-49.9mm					
Distilled & Blended Liquors	2085	MCCORMICK DISTILLING COMPANY INC	WESTON	PL	1 MCCORMICK LN.	MO	64098	10				120	50-99.9m					
Tires & Inner Tubes	3011	MICHELIN AIRCRAFT TIRE	KANSAS CITY	PL	8121 NORTHWEST 97TH TERR	MO	64153	7	X?			100	10-24.9m					
Plastics Products, NEC	3089	MID AMERICA PLASTICS INC, Mid America Pro	GARDNER	JO	800 N CENTER	KS	66030	7				120	10-24.9m					
Concrete Block & Brick	3271	MIDWEST BLOCK AND BRICK	KANSAS CITY	JA	4104 EAST 12TH TERRACE	MO	64127	6				30	1-4.9m					
Misc. Fabricated Wire Products	3496	MIDWEST HANGER CO.	KANSAS CITY	JA	4312 CLARY BLVD.	MO	64130	9				100						
Printed Circuit Boards	3672	Midwestern Electronics Inc	OLATHE	JO	540 NORTH ROGERS ROAD							210						
Sheet Metal Work	3444	MILBANK MANUFACTURING CO.	KANSAS CITY	JA	4801 DERAMUS AVENUE	MO	641200028	9				310						
Plastics Products, NEC	3089	MISSION PLASTICS NORTH	GRANDVIEW	JA	4202 E. 135TH ST.	MO	64030	7				140	10-24.9m					

MARC Region
Sorted by Company Name

	SIC	PRIMARY_NAME	CITY	COUNTY_	ADDRESS	STATE_	ZIP CODE	SIC Prioritization	WBCSD member	EEBN	Top Manuf	Number Employees	2001 revenues	Contact	Title	phone	email	comments
Plastics Products, NEC	3089	MODERN ALPHA PLASTICS	INDEPENDENC	JA	1206 S POWELL	MO	64056	7				80	10-24.9m					
Aluminum Extruded Products	3354	Mr. LONGARM INC	GREENWOOD	JA	400 WALNUT ST.	MO	640349678	7				150	25-49.9m					
2ndary Smelt & Refine Nonferro Metal	3341	NATIONAL COMPRESSED STEEL CORP.	KANSAS CITY	WY	1015 S. PACKARD	KS	66117	6				45	25-49.9m					
Wet Corn Milling	2046	NATIONAL STARCH & CHEMICAL CO.	NORTH KANSA	CL	1001 BEDFORD AVENUE	MO	641164115	10				194	100-499.9m					
Printing Ink	2893	NAZDAR SHAWNEE	SHAWNEE	JO	8501 HEDGE LANE TERRACE	KS	662273290					140						
Electric Services	4911	NEARMAN CREEK POWER STATION	KANSAS CITY	WY	4240 NORTH 55TH STTREET	KS	66104	6										
Commercial Printing: Lithograph	2752	ODELL PUBLISHING CO. INC.	LIBERTY	CL	3200 HEARTLAND DRIVE	MO	64068	9				100	10-24.9m					
Paint,Varnish,Lacquers,Enamel, Prod	2851	ORBSEAL LLC	RICHMOND	RA	201 E HWY 10	MO	64085					320	100-499.9m					
Mineral Wool	3296	OWENS CORNING FIBERGLASS	KANSAS CITY	WY	300 SUNSHINE RD.	KS	66115	6		A		600	100-499.9m	Sherri Zeller	Environmental leader	913-281-9535		
Asphalt Felts & Coatings	2952	OWENS CORNING FIBERGLASS	NO KANSAS CI	CL	825 ARMOUR RD	MO	64116			A								
Plastics Bottles	3085	OWENS-BROCKWAY PLASTICS	KANSAS CITY	PL	1253 MURRY ST	MO	64116	7										
Uncoated Paper and Multiwall Bags	2674	Percy Kent Bag Company	KANSAS CITY	JA	5910 Winner Road	MO	64125	6				180	25-49.9m					
Industrial Inorganic Chemicals, NEC	2819	PERMATEX INC	KANSAS CITY	WY	3255 HARVESTER ROAD	KS	66115	6				45	10-24.9m					
Glass Products Made Of Purc.Glass	3231	PETERSON MANUFACTURING CO.	GRANDVIEW	JA	4200 EAST 135TH STREET	MO	64030	6		A	X	600	224 mill	Mark Kanenbley	Environmental Engineer	816-765-2000 x 317		assistant - Lisa
Plastics Products, NEC	3089	PLASTIC ENTERPRISES CO INC	LEE'S SUMMIT	JA	401 SE THOMPSON DRIVE	MO	64082	7				160	10-24.9m					
Plastics, Foil, & Coated Paper Bags	2673	PLASTIC PACKAGING CORP.	KANSAS CITY	WY	750 SOUTH 65TH STREET	KS	66111	6				150	25-49.9m					
Plastics Products, NEC	3089	PLASTICS SALES & MFG CO	KANSAS CITY	JA	3124 GILLHAM PLAZA	MO	64109	7				130						
Plastics Products, NEC	3089	POLYTAINERS INC	LEES SUMMIT	JA	1400 NE DOUGLAS	MO	64086	7				200	25-49.9m					
Industrial Inorganic Chemicals, NEC	2819	PQ CORP.	KANSAS CITY	WY	1700 KANSAS AVE.	KS	66105	6				78	25-49.9m					
Electroplating,Polish,Anodiz,Coloring	3471	PRAXAIR SURFACE TECHNOLOGIES INC.	N KANSAS CIT	CL	1234 ATLANTIC ST.	MO	64116	9				350	50-99.9m					
		PRINTING AND IMAGING ASSOCIATION OF M	DALLAS		910 WEST MOCKINGBIRD LAN	TX	75247							Matt Kaarlela	Environmental Specialist	800-788-2040	mattk@piamidam.org	assistant - Joe (association of small printers)
Soaps & Other Detergents,X Sp Clean	2841	PROCTER & GAMBLE MANUFACTURING CO.	KANSAS CITY	WY	1900 KANSAS AVE.	KS	661051196		X		X	300	100-499.9m	Kennedy Germain	Site Manager	913-573-0925	germain.ka@pg.com	
Chemicals & Chem. Prepar. NEC	2899	PURITAN BENNETT AERO SYS CO. B/E Aeros	LENEXA	JO	10800 PFLUMM RD	KS	662150000					200	25-49.9m					
Wood Kitchen Cabinets	2434	QUALITY WOOD PRODUCTS	KANSAS CITY	JA	7400 EAST 12TH STREET	MO	64126	9				273	10-24.9m					
Electric Services	4911	QUINDARO POWER STATION	KANSAS CITY	WY	3601 NORTH 12TH STREET	KS	66104	6										
		RINECO	BENTON		PO BOX 729	AR	72018							Wes Holland	Territory Manager	800-377-4692 x 343		assistant - Tammy
Fabricated Metal Products NEC	3499	R M F STEEL PRODUCTS	GRANDVIEW	JA	4417 EAST 119TH STREET	MO	64030	9				80						
Fluid Milk	2026	ROBERTS DAIRY	KANSAS CITY	JA	3805 SOUTH EMANUEL CLEAV	MO	64128	12				250	50-99.9m					
General Industrial Mach & Equipment	3569	ROLL O MATIC CORP, ROM Corp	BELTON	CA	6800 E 163RD ST	MO	640125463	7				125	10-24.9m					
fabricated structural metal	3441	ROYAL TRACTOR CO. Royal Material handling	NEW CENTURY	JO	100 MISSION WOODS ROAD	KS	66031	7				105	10-24.9mm					
Printing Ink	2893	SERICOL INC	KANSAS CITY	PL	20 WEST 14TH AVENUE	MO	64116					70	10-24.9m					
Bottled & Canned Soft Drinks,Carb.Wtr	2086	SHASTA BEVERAGE CO	LENEXA	JO	9901 WIDMER	KS	66215	10				100	25-49.9mm					
Conveyors & Conveying Equipment	3535	SHICK TUBE VEYOR CORP	KANSAS CITY	JA	4346 CLARY BLVD	MO	64130	7				150	10-24.9m					
2ndary Smelt & Refine Nonferro Metal	3341	SHOSTAK IRON & METAL CO.	KANSAS CITY	WY	700 KINDELBERGER ROAD	KS	66115	6				20	1-4.9m					
Medicinal Chemicals &Botanical Prod.	2833	SIKA CORP	GRANDVIEW	JA	14201 BOTTS RD	MO	64030	8				315	100-499.9m					
water & waste water treatment & transfer equ	3589	SMITH & LOVELESS INC, Fast Systems	LENEXA	JO	14040 SANTA FE TRAIL DRIVE	KS	66215	7				300						
Corrugated & Solid Fiber Boxes	2653	Smurfit-STONE CONTAINER CORP.	BLUE SPRINGS	JA	100 SOUTHWEST SOUTH AVE	MO	64014	6				150	25-49.9m					
Petroleum Refining	2911	SOUTHWEST PETRO-CHEM	OLATHE	JO	1400 S HARRISON	KS	66061	6										
Motor Vehicle Parts & Accessories	3714	STANDARD MOTOR PRODUCTS INC	EDWARDSVILL	WY	845 S. 9TH STREET	KS	66113	8				240	24-49.9m					
Uncoated Paper and Multiwall Bags	2674	STONE CONTAINER CORP.	KANSAS CITY	JA	3244 GARDNER	MO	64120	6				300						
Corrugated & Solid Fiber Boxes	2653	STONE CONTAINER CORP.	LIBERTY	CL	933 SOUTH KENT STREET	MO	64068	6				180	25-49.9m					
		SUGAR CREEK, CITY OF	SUGAR CREEK	JA	103 S. STERLING	MO	64102							Daniel Cash	Planning/Community Development			
Envelopes	2677	TENSION ENVELOPE CORP.	KANSAS CITY	JA	819 E 19TH STREET	MO	64108	6			X	410	204 mill					
Envelopes	2677	TENSION ENVELOPE CORP.	KANSAS CITY	JA	1911 E. 18TH ST.	MO	64127	6			X	410	204 mill					
Foundry	3365	THYSSENKRUPP STAHL COMANY	KINGSVILLE		111 EAST PACIFIC POBOX 6	MO	64601	6						Matt McConville	Safety Director			

MARC Region
Sorted by Company Name

SIC	PRIMARY_NAME	CITY	COUNTY_	ADDRESS	STATE_	ZIP CODE	SIC Prioritization	WBCSD member	EEBN	Top Manuf	Number Employees	2001 revenues	Contact	Title	phone	email	comments
Paint,Varnish,Lacquers,Enamel, Prod	2851 TNEMEC CO. INC.	NORTH KANSA	CL	123 WEST 23RD AVENUE	MO	641163094				X	155	50-99.9m					
Electronic Coils, Transform, Oth.Induct	3677 TOROTEL PRODUCTS INC	GRANDVIEW	JA	13402 SOUTH 71 HIGHWAY	MO	64030	7				90	10-24.9m					
Newspaper: Publishing & Printing	2711 TOWNSEND COMMUNICATIONS	KANSAS CITY	CL	7007 NE PARVIN RD	MO	64117	9				200						
Paperboard Mills	2631 U S GYPSUM CO.	NORTH KANSA	CL	1115 ARMOUR RD	MO	64116	6						David Bitzan	Engineering Manager	816-471-4298 x 249		
Natural, Processed & Imitation Cheese	2022 Unilever Best Foods, CONOPCO INC DBA LIPT INDEPENDENC		JA	13000 E. 35TH ST.	MO	64055	12				90	50-99.9m					
Edible Fats & Oils, NEC	2079 Unilever Bestfoods	NEW CENTURY	JO	27080 W. 159TH ST.	KS	66031	10				240	100-499.9mm					
Platemaking & Related Services	2796 UNIVERSAL ENGRAVING INC	OVERLAND PA	JO	9090 NIEMAN RD.	KS	66214	9				120	10.2m corp wide					
Wood Preserving	2491 UNIVERSAL FOREST PROD WEST DIV	HARRISONVILL	CA	2600 PRECISION DRIVE	MO	64701	7				50	10-24.9m					
Paint,Varnish,Lacquers,Enamel, Prod	2851 VALSPAR INDUSTRIES	NORTH KANSA	CL	1136 FAYETTE	MO	64116					120	25-49.9m					
Asphalt Paving Mixtures & Blocks	2951 VANCE BROTHERS INC	KANSAS CITY	JA	5201 BRIGHTON	MO	64130					160						
Plastics Products, NEC	3089 VARIFORM INC.	KEARNEY	CL	303 WEST MAJOR STREET	MO	64060	7				275	1.92b					
Electronic Components NEC	3679 VECTRON INTL OLATHE	OLATHE	JO	620 N LINDENWOOD	KS	66062	7				145	25-49.9m					
Metal Stamping, NEC	3469 VITA CRAFT CORP.	SHAWNEE	JO	11100 W. 58TH ST.	KS	662032238	9				80	10-24.9					
Sheet Metal Work	3444 WEBCO MANUFACTURING INC	OLATHE	JO	15610 SOUTH KEELER TERRA	KS	66062	9				100	10-24.9m					
Fabricated Metal Products NEC	3499 WELD RACING	KANSAS CITY	JA	933 MULBERRY STREET	MO	64101	9				4000	34m	Richard Weld	President	816-421-8040		assistant - Karleen
Stl Wrks,Blast Furn,Coke Ov.Roll Mills	3312 WELD WHEEL INDUSTRIES INC	KANSAS CITY	JA	1245 CRYSTAL AVENUE	MO	641262335	6										
	4911 WEST STAR ENERGY	TOPEKA	SN	122 SW 2ND ST	KS	66603	6						Brad Loveliff	Conservation Manager	785-575-8115		
Sheet Metal Work	3444 WESTERN FORMS INC	KANSAS CITY	JA	6200 EQUITABLE	MO	64120	9				100	10-34.9m					
Corrugated & Solid Fiber Boxes	2653 WILLAMETTE INDUSTRIES KC CORRUGATED	KANSAS CITY	WY	530 SUNSHINE ROAD	KS	66110	6				114	10-24.9m					
Stl Wrks,Blast Furn,Coke Ov.Roll Mills	3312 WIRE ROPE CORP.OF AMERICA INC	KANSAS CITY	JA	2100 MANCHESTER AVE.	MO	64126	6				176						
Plastics Foam Products	3086 WOODBRIDGE CORPORATION KC FOAM	RIVERSIDE	PL	555 NORTHWEST PLATTE VAL	MO	641509792	7				150	25-49.9m					

5.0 APPENDIX – MEETING NOTES

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MEMORANDUM

Project	Kansas City By-Product Synergy Feasibility Study	Date	23 January 2003
Project No.	02140	Prepared by	Phaedra Svec
File No.		Cc	Lisa Danbury

RE: THE BY-PRODUCT SYNERGY FEASIBILITY STUDY FOR THE KANSAS CITY REGION

PARTICPANTS:
Elements Team: **Andrew Mangan**, Bob Berkebile, **Jason McLennan**, **Phaedra Svec**, **William Franklin**, **Shelly Schneider**, Bev Sauer, **Bob Mann**, Stacia Stelk, **Otavio Silva** and Kay Johnston

MARC Team & the Advisory Committee: Al Figuly, Andrew Bracker, Bob Aston, **Dan Cash**, David Brewer, **David Flora**, **Ed Van Leeuwen**, **James Joerke**, Joe Gonzales, Katy Miley, **Kent Foerster**, **Kristin Allan**, **Lisa Danbury**, **Nadja Kcrpilow**, **Nils Gore, Peter Schemitz**, Ron Rybarczyk, Ron Stone, **Scott Cahall**, Steve Kidwell, and **Tom Jacobs**

Note: **Bold text** above signifies attendance at the Jan 23rd meeting

The meeting began with round table introductions and an overview of the By-Product Synergy Process. The presentation outline included:

- The By-Product Synergy (BPS) concept, purpose, benefits, barriers, keys to success, and process were presented.
- An example of BPS in Tampico Mexico was briefly summarized.
- The Feasibility Study for BPS in Kansas City was discussed in terms of: goals, team structure, tasks, schedule and milestones.
- The process for determining the geographic breadth of the project was outlined. Using the area within the six country region of MARC has many advantages. The project would be initially focused on the three counties where industry is most concentrated and then spread out to key industries within the 6 county region and beyond. The geographic overlays derive a strategy for identifying the key industries that may add diversity to the project.
- Key areas where political support will be sought were outlined.
- An industry profile database was presented including the: purpose, design criteria, sources of information, parameters, and prioritization used to narrow the database from 2000 businesses to 185 businesses.
- The Advisory Committee's role was outlined.

The presentation was followed by discussion:

- Cahall resonated with the idea of connecting to a knowledge base about the freight and transportation through the region . He suggested we look at Kansas City Southern and some of the waste handlers to determine what they know about waste in the region.
- Schemitz made the group aware of a project between the Missouri Department of Agriculture and the Missouri Department of Natural Resources to collaborate on bio-fuel uses in the region.

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- Flora suggested that he had a joint contact for several of the regional military bases, particularly Ft. Riley.
- Danbury shared a recent discovery that Butterball Turkey (near Joplin, MO) may be working on an initiative to produce bio-fuel and ash as marketable by-products.
- Schemitz reminded the group of the benefit of using this project to help in the work of re-connecting some of the suburban industries on the fringe of the region back to the urban core.
- There was discussion about flyash and the complexities of using that by-product within the region.
- Allan shared with the team that in Missouri there is more demand for tires than there is supply in the waste stream.
- Flora reminded the team of Kansas City's unique underground storage resource.

The participants were asked to assist with the database development and review a list of 185 area industries. Each participant was asked to mark and return the form with the following information:

- Participants name and email contact information at the top of the sheet
- Star the companies where the participant may have a contact
- Follow up and share that contact with: Shelly H. Schneider, (913) 649-2225 x 224, sschneider@fal.com

The following calendar was presented for the By-Product Synergy Feasibility Study:

Task	Dec '02	Jan '03	Feb	Mar	Apr	May	Jun
Build BPS Team							
Assess Methodology							
Determine Breadth							
Educate and Engage							
Facilitate Dialogue				Dialogue		Dialogue	
Recommendations							
Project Management							

The next meetings among Elements, MARC, and the Advisory Committee will be:
March 7th, 2003 from 8:30 am -11:00 am
May 8th, 2003 from 9:00 am – 12:00 noon

Both meetings will be held at the Missouri Department of Conservation Discovery Center Urban Conservation Campus at 4750 Troost Ave in the Lewis & Clark Multi-purpose room.

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MEETING NOTES

Project	Kansas City Regional By-Product Synergy Initiative Feasibility Study	Date	15 March 2003
Project No.	02140	Prepared by	Phaedra Svec
File No.	02140/Letters/Meeting Notes	Cc	Lisa Danbury

RE: MEETING MARCH 7TH 2003 AT THE MDC DISCOVERY CENTER

PARTICPANTS:
Elements Team: **Andrew Mangan**, Bob Berkebile, Jason McLennan, **Phaedra Svec**, **William Franklin**, **Shelly Schneider**, Bev Sauer, **Bob Mann**, Stacia Stelk, **Otavio Silva** and Kay Johnston

MARC Team & the Advisory Committee: Al Figuly, Andrew Bracker, Bob Aston, Dan Cash, **David Brewer**, David Flora, **Ed Van Leeuwen**, James Joerke, Joe Gonzales, Katy Miley, Kent Foerster, **Kristin Allan**, **Lisa Danbury**, **Nadja Karpilow**, Nils Gore, **Peter Shemitz**, Ron Rybarczyk, **Ron Stone**, **Scott Cahail**, Steve Kidwell, **Kimberly Foster, Fred Gustin**, and **Tom Jacobs**

Note: **Bold text** above signifies attendance at the March 7th meeting

The meeting began with round table introductions and an brief review of the By-Product Synergy Process. The presentation outline included:
- Concept evolution
- An update on recent federal support for the project
- Project process timeline
- Commitment requirements from the private sector
- Review of the promotional video and handout packet

The presentation was followed by an update on the companies contacted in February:

COMPANY NAME	REACTION	NOTE
BOARD OF PUBLIC UTILITIES	NEUTRAL	Have Class F Flyash
FORD MOTOR CO. KANSAS CITY ASSEMBLY PLANT	POSITIVE	Interested pending support from national headquarters
GENERAL MOTORS CORP.	POSITIVE	Interested pending support from national headquarters
HARLEY DAVIDSON MOTOR COMPANY	POSITIVE	Interested in presenting to their national headquarters as well.
KANSAS CITY POWER & LIGHT CO.	POSITIVE	Attended meeting in support
THE CITY OF KC MO	POSITIVE	Water is an important issue
LAFARGE CORPORATION	POSITIVE	By-Product reuse is a job title in their operations

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OWENS CORNING	POSITIVE	
PROCTER & GAMBLE MANUFACTURING CO.	POSITIVE	Have other Midwestern plants that may be interested in participating.
SUGAR CREEK	POSITIVE	Has plans for an eco-industrial park
US EPA	POSITIVE	There are potential grant opportunities before July 1st.
JE DUNN	NEUTRAL	
BAYER CORP AGRICULTURE DIVISION	CONTACTED	
	CONTACTED	
CARGILL INC	CONTACTED	
HALLMARK CARDS INC	CONTACTED	Has paper that is currently being recycled and plastic and polyester waste
HONEYWELL FEDERAL MANUF & TECHNO; US DOE	CONTACTED	
LAKE CITY ARMY AMMUNITION FACILITY	TO CONTACT	
BARTLET & COMPANY		
BURLINGTON NORTHERN SANTA FE RAIL YARD	TO CONTACT	
BRITISH PETROLEUM	TO CONTACT	
COLGATE PALMOLIVE CO.	TO CONTACT	
CARGILL INC	TO CONTACT	
DANISCO CULTOR USA	TO CONTACT	
EIERA	TO CONTACT	Board meeting in May
HARCROS CHEMICALS INC.	TO CONTACT	
GOODYEAR	TO CONTACT	
THE CITY OF KC KS	TO CONTACT	
KANSAS CITY SOUTHERN RAILWAY CO.	TO CONTACT	
PETERSON MANUFACTURING	TO CONTACT	
WELD WHEEL INDUSTRIES INC	TO CONTACT	
WHITEMAN AIR FORCE BASE	TO CONTACT	
AIRPORTS & AVIATION DEPARTMENT	TO CONTACT	
US DEPARTMENT OF ENERGY	TO CONTACT	
VAN TUYL	TO CONTACT	
ZIMMER CORPORATION	TO CONTACT	

The update was followed by discussion:

- Mangan described the overall responses from organizations contacted as positive. The concept has been effectively communicated and the organizations seem willing to participate. The general progress toward recruiting 15-20 organizations is going well.
- Mangan explained that the team is asking for an indication of interest from organizations contacted in advance of a May 8 organizational meeting. Project participants and specifics will be presented at the meeting.
- Letters of invitation to the May 8 meeting will be sent to a broad range of potential participant companies.

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- All participating companies will be asked to actively participate in the process and provide a participation fee. The team will have more information about the specifics of the project by the May meeting.
- Mangan answered several questions:
  - It is not necessary to have a waste steam in conventional terms in order to participate. An empty rail car could be seen as waste. Other companies may want to sponsor the project in the hope of discovering economic development opportunities.
  - The project will begin in September if the feasibility study proves the project is possible.
  - The Elements team is in the process of forming an independent LLC corporation that will collect the fees and facilitate the project.
  - The project fees will cover the data collection & analysis process, administration, facilitation and communication. The Elements team will work individually with each business as well as coordinate the larger group. The roles for each of the Elements members will be greater explained in the May meeting.
  - The budget for Phase 2 is under development and will be discussed in greater detail at the May meeting.
  - The team is actively seeking funding support from the public sector to provide half of the project fees from public funding.
  - Once the project begins, the number of participants may grow. The geographic boundaries may also change as needed to include valuable resources outside of the focus area. However, the group will always need to remain an efficient size for efficient transportation and to form trusted partnerships. 100 miles is a typical, practical radius.
- Van Leeuwen suggested that the Quality Control departments within companies might make good contacts because their performance is measured based on reducing waste or making waste more valuable.
- Shemitz announced that there is a Quality Control conference coming up in Kansas City in May.
- Allan recalled that a regional Procter and Gamble facility once offered incentives to smaller companies that could make use of the dust waste from diaper production. Discovering incentives such as this may be helpful to the project as it progresses.
- Calhail asked about whether or not the team had information about the Riverside Levy, and the development of the River Front Heritage Trail.
- Jacobs asked if the Midwest Research Institute would be a helpful consultant. The team responded that it may be preferable to wait to bring them in until a specific need is identified by one of the participating companies.
- Shemitz offered to share a potential contact for hydrogen expertise: Dr. Roger E. Billings, Pres., 401 W. Grand, Gallatin, MO 64640, 660-663-3000, 3736 F, billings@wband.com.
- Danbury knows of an Economic Development Corporation that may have contacts at Cargill.
- Allan may also have a contact at Cargill.
- DNR has some national connections at Honeywell.
- Mangan is using national connections to reach the Army.
- Jacobs has contacts at Kansas City Southern
- Danbury suggested contacting Yellow Freight and the City of North Kansas City.
- Shemitz suggested that the City of KCMO is looking carefully at transportation issues and that transportation solutions will be an interesting and helpful element to this project.
- Allan speculated that if the Kansas City Initiative is successful that other communities around the midwest will be interested in starting their own BPS projects.
- Gustin asked if the team had contacted any of the universities to determine if they are doing research projects that may relate to the work of the project. The team responded the KU is part of the advisory committee.

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- Mangan announced that BPS will be highlighted at the US EPA Resource Conservation and Recovery Act (RCRA) conference in Washington in August, the MORA conference in May, and the International Association for Industrial Ecology conference in June/July.
- Mangan announced a DOE grant request that is available for consortia to assess carbon sequestration techniques. Jacobs recalled that a Wisconsin prairie restoration group is going for the grant with MARC and the University of Missouri.
- Shemitz reminded the team that Missouri is focusing heavily on bio-mass solutions.
- Gustin suggested that CO_2 credits may one day be a tradable commodity if pollution can be avoided.
- Allan remembers an insulation company (PK Insulation?) that uses paper waste to create kitty litter.
- Allan believes that the EREIA is still going to be interested in this program. They often give grants to small businesses that need to invest in equipment in order to minimize or reuse waste.
- Van Leeuwen suggested the team contact the Printing Industry of America using him as a reference.
- Danbury suggested that the team continue to search for a local foundry – perhaps by seeking out a professional group like the American Foundry Recycling Group.
- Gustin suggested that the team contact the Kansas & Missouri Departments of Solid Waste to obtain calculations of Missouri wastes by volume and weight. The response from the participants was that in this region paper is the biggest waste by volume and food is the biggest waste by weight.
- Jacobs & Danbury volunteered to make a short list of local economic development groups who might benefit from learning about the BPS Process.
- Mangan asked for contacts with the Kansas and Missouri Departments of Transporation.

The participants were asked to continue to assist with the database development. Each participant was asked to share any contact information for companies that have not yet been contacted.

The following calendar has not been altered for the By-Product Synergy Feasibility Study:

Task	Dec '02	Jan '03	Feb	Mar	Apr	May	Jun
Build BPS Team							
Assess Methodology							
Determine Breadth							
Educate and Engage							
Facilitate Dialogue				Dialogue		Dialogue	
Recommendations							
Project Management							

The next meeting among Elements, MARC, the Advisory Committee, and potential participants in project will be:
May 8th, 2003 from 9:00 am – 12:00 noon

The meetings will be held at the Missouri Department of Conservation Discovery Center
Urban Conservation Campus at 4750 Troost Ave.

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MEETING NOTES

Project	Kansas City Regional By-Product Synergy Initiative Feasibility Study	Date	08 May 2003
Project No.	02140	Prepared by	Shelly Schneider
File No.	F://02140/Letters/Meeting Notes	Cc	Lisa Danbury

RE: MEETING MAY 8TH 2003 AT THE MDC DISCOVERY CENTER

PARTICPANTS:
Elements Team:
Andrew Mangan, Bob Berkebile, **Jason McLennan**, **Phaedra Svec**, **William Franklin**, **Shelly Schneider**, **Bev Sauer, Bob Mann**, Stacia Stelk, **Otavio Silva** and Kay Johnston

MARC Team & the Advisory Committee:
Al Figuly, Andrew Bracker, **Bob Aston**, Dan Cash, **David Brewer**, David Flora, **Ed Van Leeuwen**, James Joerke, Joe Gonzales, Katy Miley, Kent Foerster, Kristin Allan, **Lisa Danbury**, **Nadja Karpilow**, **Nils Gore**, Peter Shemitz, Ron Rybarczyk, **Ron Stone**, **Scott Cahail**, Steve Kidwell, Kimberly Foster, **Fred Gustin**, and Tom Jacobs

Other Attendees:

Kevin Anderson	**Missouri Organic Recycling**
Rick Robson	**Hallmark Cards**
Larry Falkin	**City of KCMO Environmental Management**
Doug Smith	**Johnson County Wastewater**
John O Neil	**Johnson County Wastewater**
Susan Rodgers	**Hallmark Cards**
Mark Hague	**EPA**
Betsey Betrus	**Johnson County Environmental Department**
Bruce Bowers	**ENVision Group representing Harley Davidson**
Blaine Liebig	**Langley Recycling**

Note: **Bold text** above signifies attendance at the May 8th meeting

The meeting began with introductions and a brief review of the By-Product Synergy Process. The presentation outline included:

- Summary and Results of the Feasibility Process
- Beyond the Feasibility Study
- BPS Brainstorming Session
- Question & Answers

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The following summary includes the following update of participant interested in the project:

COMPANY NAME	REACTION	BPS CONCEPT PRESENTED THROUGH SITE VISIT
BAYER CROP SCIENCE	POSITIVE	YES
BOARD OF PUBLIC UTILITIES	POSITIVE	YES
FORD MOTOR CO. KANSAS CITY ASSEMBLY PLANT	POSITIVE	YES
HALLMARK CARDS INC.	POSITIVE	YES
HALLMARK DISTRIBUTION CENTER	POSITIVE	YES
HARLEY DAVIDSON MOTOR COMPANY	POSITIVE	YES
HONEYWELL	POSITIVE	YES
KANSAS CITY MISSOURI WATER DEPARTMENT	POSITIVE	YES
KANSAS CITY MISSOURI ENVIRONMENTAL MANAGEMENT DEPARTMENT	POSITIVE	YES
KANSAS CITY POWER & LIGHT CO.	POSITIVE	YES
LAFARGE CORPORATION	POSITIVE	YES
OWENS CORNING	POSITIVE	YES
PROCTER & GAMBLE MANUFACTURING CO.	POSITIVE	YES
SUGAR CREEK CITY PLANNING/COMMUNITY DEVELOPMENT	POSITIVE	YES

COMPANY NAME	REACTION	BPS CONCEPT PRESENTED WITH AN INFORMATION PACKET
CARGILL INC	POSITIVE	YES
DANISCO CULTOR USA	POSITIVE	YES
GALAMET INC	POSITIVE	YES
KAW RIVER SHREDDING	POSITIVE	YES
LANGLEY	POSITIVE	YES
PRINTING AND IMAGING ASSOCIATION	POSITIVE	YES
THYSSENKRUP STAHL COMPANY	POSITIVE	YES
UNITED STATES GYPSUM COMPANY	POSITIVE	YES
RINECO	POSITIVE	YES

Mark Hague, representing US EPA Region 7, expressed support for the BPS process. Mr. Hague read a letter from Bill Rice, Deputy Regional Administrator Region 7, who also expressed support for the project. Letter is attached.

The formal presentation was followed by an interactive brainstorming session:

- Mangan asked attending company representatives to share their process input, product, and by-product streams. Svec input the data into an Excel spreadsheet projected to an overhead screen attached to the minutes.
- Mangan explained that the brainstorming session was an example of the type of data and participation the attending companies could expect to contribute in a second phase.
- Mangan answered several questions:

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- The quantity of industrial by-products generation in the KC region has not been established. This would be part of Phase II.
- The team is aware of grant funding deadlines and has taken steps to be considered in the current EPA funding cycle.
- The Phase II budget would change if more than 10 companies chose to participate.
- Since the $150,000 in grant money will be a fixed amount and we have projected that amount is necessary for 10 companies, additional companies will not reduce the projected cost per company proportionally. Some efficiency might be realized; therefore the budget would be reviewed.
- Several filters were applied to the initial database of approximately 2000 companies to determine the mix of companies approached to participate. As Phase II starts, new companies may be identified and asked to participate.
- Government entities are key players in the BPS process. To ensure a free and open flow of information during Phase II, only participating companies will be in attendance to protect confidentiality.
- If fewer companies agree to participate than can support the project, the project will be stopped.
- After the yearlong study, a task group will be needed to ensure the continuation of the BPS process. For the KC region, EEBN would be the most appropriate group to fill this function.

- Several concerns were voiced about the fee structure. It was suggested that part of the residual be used to fund EEBN's efforts to monitor and promote the continuation of the BPS process.
- There was a discussion concerning the different budget cycles used by the attending companies. Phase II would be structured to take this into account.
- The project team will be calling on potential participants this summer to answer specific concerns and secure signed contracts for Phase II.
- September 2003 is the anticipated start date for Phase II.
- Mangan announced that BPS will be highlighted at the US EPA Resource Conservation and Recovery Act (RCRA) conference in Washington in August, the MORA conference in May, and the International Association for Industrial Ecology conference in June/July.

The following calendar has not been altered for the By-Product Synergy Feasibility Study:

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Recommendations							
Project Management							

The Elements Team will provide a final report to MARC prior to the deadline in June 30th.

May 1, 2003

Mr. Scott Cahail, Chairman
MARC Solid Waste Management District
600 Broadway, Suite 300
Kansas City, MO 64106

RE: By-product Synergy

Dear Mr. Cahail:

I am sorry that I will not be able to be with you at the time of the May 8th meeting with regional businesses and governments to discuss the Regional By-product Synergy project. Mark Hague, Director of our Program Operations and Integration staff will represent me at the meeting. Our Air, RCRA and Toxics Director, Art Spratlin, will try to join the meeting after he completes a speaking engagement. Andy Mangan, Bob Mann and Bill Franklin presented the project to me and others in the region in February. We are intrigued with the possibilities of this concept for our region.

Members of EPA Region 7 staff have been actively involved in this project since its inception, and I want to assure you and participating businesses that we regard this as an innovative and important step in waste and pollution reduction. It could lead to significant environmental and economic benefits to business and the community.

We will continue to work cooperatively with you in the development and implementation of the Regional By-product Synergy project in whatever ways possible. We are delighted that MARC and the Environmental Excellence Business network are taking a leading role in bringing this effort to the region.

Sincerely,

William W. Rice
Deputy Regional Administrator

Products

Product	Customers
Cards	Public
Wrapping Paper -foil	Public
PP Ribbon	Public
Paper Plates & Cups	Public
Steel	Mills Foundaries
Aluminum	Mills Foundaries
Copper/Brass	Mills Foundaries
Electricity	Public
Motorcycles	Public
Engines	Public
Wastewater Treatment	Residential Commercial Industrial
Water	Public
Trash Collection	Public
Compost	
Mulch	

Inputs

Inputs	Source	High or Low Cost
Paper all types	Virgin & Recycled	High
Foil	Local companies	?
Inks	Local companies	High
Flitter	New Jersey	?
PP for ribbon	Chemical Company	Medium
Glues	Made in Topeka	Low
Electricity	Local	High
Water	Local	Medium
Brush Debris	Regional	Low
Food Waste	Regional	Low
Yard Waste	Regional	Low
Coal	Western US	High
Gas	Pipe	High
Oil	Various	High
Lime	Missouri	Medium
Limestone	Missouri	Low
Water	Rivers & Lakes	No Cost
Water	Rivers & Lakes	
Chlorine	?	High
Bio Diesel Motor Fuel	Local	High
Electricity		High
Water		High
Process Chemicals		High
Sewage	Local	Low

By-Products

By-Product	Disposition	Expense, Revenue, or No Cost
Flyash	50% sold	Revenue
Bottom Ash	Raw Cement Feed Stock	Neutral
Dry Scrubber Ash	Fill Mines under Sugar Creek	Expense
Wet scrubber Sludge	Landfilled (300,000 tons)	Expense
Metals	Recycled	Neutral
Leaf & Brush	Missouri Organics	Expense
Plastics	Recycled	Neutral
Paper	Recycled	Neutral
Glass	Recycled	Neutral
Mixed Trash	Landfilled	Expense
Plastics	Landfilled & Some Recycling	Expense
Tires	shredding or landfill	Expense
Glass	landfill	Expense
Oils	Landfill	Expense
Wood	Landfill	Expense
Paper	Recycled	Revenue
Foil	Landfill (50,000lbs/month)	Expense
Ribbon	Recycled (15,000 lbs/month)	Revenue
Wood Pallets	Reused & Recycled	Expense
Waste Ink	Disposed for fuel blending	Expense
Biosolids	Landfilled (33 wet tons/day)	Expense
Paint Solvents	Alternate Fuel	Expense
Waste Water Sludge	Landfill	Expense

Kansas City Regional By-Product Synergy Initiative

Sign In Sheet

Project: Kansas City Regional By-Product Synergy Initiative
Project: 02140

Date: 08 May 2003
Time: 9:00am -12:00pm

Location: Missouri Dept. of Conservation's Discovery Center

Name	Firm	Phone	Email
Kevin Anderson	Missouri Organic	816-483-0908	Kevin@missouriorganic.com
Rick Robson	Hallmark Cards	816-274-3748	rrobso1@hallmark.com
Nadja Karplow	MARC	816.474.4240	Karplow@marc.org
Larry Falkin	KCMO	816-513-3456	Larry_Falkin@KCMO.ORG
DOUG SMITH	JO. CO. WASTEWATER	913.681.3200 X2114	DL SMITH @ JCW.ORG
John O'Neil	JoCo Wastewater	913-432-3521 x4304	John.O'Neil@JoCoks.com
Ronald B. Stonier	EPA	913/551-7158	STONE, RONALD @EPA.GOV
Bob Aston	EPA	913/551-7392	aston.robert@epa.gov
NILS GORE	K.U.	785.331.4520	NGORE@KU.EDU
Susan Rodgers	Hallmark	785 843 9050	srodge1@hallmark.com
MARK HAGUE	U.S. EPA	913-551-7546	hague.mark@epa.gov
Betsy Betros	JoCo Comty Environm. Dept	913-492-0402	betsy.betros@JoCoKS.com
Bruce Bowers	Envision Group, LLC (Hawley-Davidson)	(816)[illegible]42-7655	esail@earthlink.net
FRED GUSTIN	KCPL	(816) 536-2108	fred.gustin@KCPL.com
BLAINE LIEBIG	LANGLEY RECYCLING	816-924-8452	BLAINELIEBIG@LANGLEYRECYCLING.COM
Scott Cahail	KCMO	816-513-3468	Scott-cahail@kcmo.org

Kansas City Regional By-Product Synergy Initiative
Sign In Sheet

Project: Kansas City Regional By-Product Synergy Initiative
Project: 02140

Date: 08 May 2003
Time: 9:00am -12:00pm

Location: Missouri Dept. of Conservation's Discovery Center

Name	Firm	Phone	Email
Ed VAN LEEUWEN	HALLMARK	274-4047	EVANLE1@HALLMARK.COM
Lisa Danbury	MARC	816-474-4240	ldanbury@marc.org
David Brewer	SCS Engineers	816-941-7510	dbrewer@scsengineers.com