BUILDING SPACES & COMMUNITIES:
THE PROCESS OF IMPROVING KANSAS CITY'S RECYCLING SYSTEM WITH COMMUNITY INPUT

by

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A REPORT

submitted in partial fulfillment of the requirements for the degree

MASTER OF LANDSCAPE ARCHITECTURE

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The Process Of Improving Kansas City's Recycling System With Community Input

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Masters Report submitted in partial fulfillment of the requirements for the degree of:
Master of Landscape Architecture (MLA)

Major Professor: Jason Brody, Ph.D.
Supervisory Committee: Vladimir Krstic and Laurence Clement

Kansas State University
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ABSTRACT

Kansas City has the opportunity to expand its recycling programs and infrastructure through a participatory design process conducted at the Kansas City Design Center (KCDC). Because participatory design techniques can allow researchers to include members of the community in the planning process, project outcomes can generally be more successful. In the example of the recycling and composting project led by students at the KCDC, an advisory committee made of professionals and members of the community represented many stakeholder interests. Because of the wide array of feedback from the community, the process of design for the studio was not linear, but rather, it transformed over a period of research, design, further research, and redesign. The students first approached local recycling issues within the scope of a document written for grant funding. However as students responded to feedback from the advisory committee, the final proposals were altered to better address truer community needs. Other aspects for how to communicate and respond to critical feedback was also realized. This report aims to discover how participatory design aided this project and made its outcomes and delivery more agreeable to the larger population.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ADA: Americans with Disabilities Act

IRB: Institutional Review Board

KCDC: Kansas City Design Center

MARC: Mid America Regional Council

MRF: material recovery facility

LIST OF NOMENCLATURE

Advisory committee: a panel of people who are invited to collaborate on a project because of thier expertise or experience related to a topic at hand

Advisory council: see *advisory committee* definition

Co-design: the process of including multiple people, entities, or communities during the design of a project

Community engagement: see *co-design* definition

Participatory design: see *co-design* definition

Project: the collaborative process and outcomes of the Kansas City Design Center's studio, which conducted work on downtown recycling (otherwise referred to as "the Downtown recycling project")

Report: the individual research, analysis, and conclusions about community engagement discussed in this document

LIST OF PRIMARY DATA

Use of Primary Data

The conversations which took place at interviews and meetings are some of the primary data used in this research. The conversations were transcribed into text and organized in the appendices in the following way, which is referenced throughout this report.

Appendix 1: Advisory Committee Interviews

1.1: Environmental Protection Agency Representative. Interview. February 2, 2016.

1.2: Gibson, Lydia. Interview. February 18, 2016.

1.3: Jacobs, T. Karpilow, N. McDaniel, L. Interview. February 11, 2016.

1.4: Leonce, Marleen. Interview. March 7, 2016.

1.5: Riot, Kristin. Interview. February 26, 2016.

Appendix 2: Student Interviews

2.1: Santoro, Amanda. Interview. February 16, 2016.

2.2: Savage, Joel. Interview. March 1, 2016.

2.3: Tapia, Sean. Interview. February 21, 2016.

Appendix 3: Advisory Committee Meeting Notes

3.1: Advisory Committee. Meeting notes. September 9, 2015.

3.2: Advisory Committee Meeting. Meeting notes. October 16, 2015.

3.3: Advisory Committee Meeting. Meeting notes. February 8, 2016.

3.4: Advisory Committee Meeting. Meeting notes. March 10, 2016.

Appendix 4: Professional Review Meeting Notes

4.1: Professional Review Group. Meeting notes. October 28, 2015.

4.2: Professional Review Group. Meeting notes. December 11, 2015.

4.3: Professional Review Group. Meeting notes. March 9, 2016.

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I would like to acknowledge the guidance of my major professor, Jason Brody; my secondary professor, Vladimir Krstic; and my tertiary professor, Laurence Clement. Their consistent feedback allowed me to write with more confidence and clarity as I developed my ideas throughout the studio project and my report.

The voluntary participation of our advisory committee and professional reviewers throughout the studio's numerous meetings was also essential in the development of this report. I must acknowledge their individual willingness to show up, provide insightful feedback to the students, and stay committed in the studio project's success. I asked seven advisory committee members that I interview them for this report, and seven accepted. Their dedicated involvement allowed me to make stronger conclusions to this report.

The candid photographs that appear throughout this document exist thanks to Sarah Kraly, the KCDC's full-time project manager. While many of us were busy chatting with reviewers, presenting, or taking notes, Sarah was there to snap a few photos, which add context to this text.

My classmates of architects, landscape architects, and planners at the Kansas City Design Center also allowed me to develop my thoughts for this report. Without their constant hard work, I would have no group project from which to learn about community engagement. I would also have had far less enthusiasm for my work without their everyday encouragement and motivation.

DEDICATION

I dedicate this report to my family. My family has always been my primary motivation for doing my best. They were behind me throughout all of my years of school, and they still believe in me today. I truly believe that an education is the best gift that anyone can give, so thank you, Mom and Dad.

INTRODUCTION | 01

REPORT INTRODUCTION

Kansas City's recycling system has much room for growth and improvement. However with so many facets to the issue of recycling downtown, members of the community with specific insight and firsthand experience are best equipped to lead a team of designers and planners towards successful design solutions that specifically address the City's needs.

Community engagement has thus strongly contributed to and can continue to contribute to the Downtown recycling project, as it is implemented in Kansas City. The amount of input gathered from the advisory committee and other stakeholder groups guided the student project in a number of ways. The students learned to productively make sense of the feedback, channeling it into a clear vision framework with specific design strategies. The class often balanced the feedback they were given with the need to be creative and think nonrestrictively in new ways. All the while, the advisory committee kept the design explorations grounded in the realities of Kansas City and guided students to think about the true needs of the community and industry.

This report draws on the processes and outcomes of this collaborative study to understand what community engagement does for this project and those similar to it. As the project continues to move forward, future decision-makers may take what was learned from this process to better allow for public and private buy-in and encourage individual willingness to change. The outcomes of this research may assist the future community engagement aspects and physical implementation of the recycling program downtown.

Figure 1.1: Conversations with Advisory Committee Members (Kraly 2015)

BACKGROUND | 02

KCDC AND THE DOWNTOWN RECYCLING PROJECT

Design Collaborations and Public Partnerships at the KCDC

Located in downtown Kansas City, the Kansas City Design Center (KCDC) is a nonprofit program for students of architecture, landscape architecture, and planning at the University of Kansas and Kansas State University. Its mission is to "promote excellence in the design of Kansas City's built environment." This is done through educational programs in which "faculty and students form partnerships with local client groups and stakeholders to develop design concepts and implementation proposals addressing major architectural, urban design, and urban planning issues throughout metropolitan Kansas City. According the KCDC's website, collaborations with "community organizations, stakeholders and residents, local governments, and design professionals [have promoted] excellence in urban design and the built environment (*About KCDC* 2016)."

Project Grant Purpose

The Mid-America Regional Council Solid Waste Management District offered grant funding during the fall of 2015 to the KCDC in exchange for work that could improve the recycling program in the Greater Downtown Area of Kansas City. Work was done in collaboration with an advisory council and includes research and analysis, a programming and vision plan, site studies, and system component designs. This stakeholder group represented the voices of many people with invested interests in the project's outcomes.

The grant completed by the KCDC set out to address the need for a "comprehensive, appealing and convenient recycling system," which could be used as "an instrument of betterment of the quality of urban environment." Although the original grant proposal set forth requirements to guide the project scope, the wording was sometimes open to allow for flexible interpretations.

Studio Project Purpose

The specific vision, mission, and goals that were created by the students during the studio project drew from the original grant proposal, but were written to reflect the truer needs of an improved recycling system in downtown Kansas City (see Figure 2.1). After the main dilemmas were identified in the research and verified by the advisory committee, the studio moved forward to address the dilemmas and in the project proposals.

VISION

Our vision is to create a livable downtown Kansas City through a thriving material waste system known for efficient, data driven, innovative design.

MISSION

The mission is to build a positive public partnership by selectively investing in recycling and composting infrastructure downtown in order to improve participation and overall diversion rates, and contribute to a more convenient and amenity rich lifestyle in KC. This Proposed Framework will enhance public and private access, and waste system efficiency through the use of smart waste infrastructure, consisting of data-driven tools and innovative collection methods.

GOALS

- Generate awareness and city pride for recycling
- Create multi-family & commercial recycling infrastructure
- Improve recycling convenience through accessibility
- Measure and publicize city goal progress regularly
- Increase participation through public education
- Create design standards for the overall system

Figure 2.1: Vision Mission and Goals (KCDC 2016)

Figure 2.2: Advisory Committee Meetings (Kraly 2015)

PARTICIPATORY DESIGN PROCESSES

Community Engagement Theory

A number of authors generally agree that when members of the community are included in the process of design, community members will be more pleased with the outcomes, which also are more successful. According to literature, when a design approach allows a designer to participate with the community, better design strategies prioritize user function and better design outcomes result (Hester 1974; King 1989; Marcus 2008; Sanoff 2008).

Community Engagement Practice

In the case of Kansas City, Missouri, community engagement could play a key role in the future of recycling and composting improvement plans. Although Kansas City could invest in an improved solid waste management system and policies, it is imperative that local attitudes support recycling behaviors and city investments. Before agreeing to such investments, residents, government officials, businesses, waste management companies and other stakeholders may find it helpful to know that their concerns were represented during the design process. Recycling in Kansas City could be improved with the a collaborative research and design process between the community, local leaders, and urban designers that allows for creative thinking and larger community buy-in.

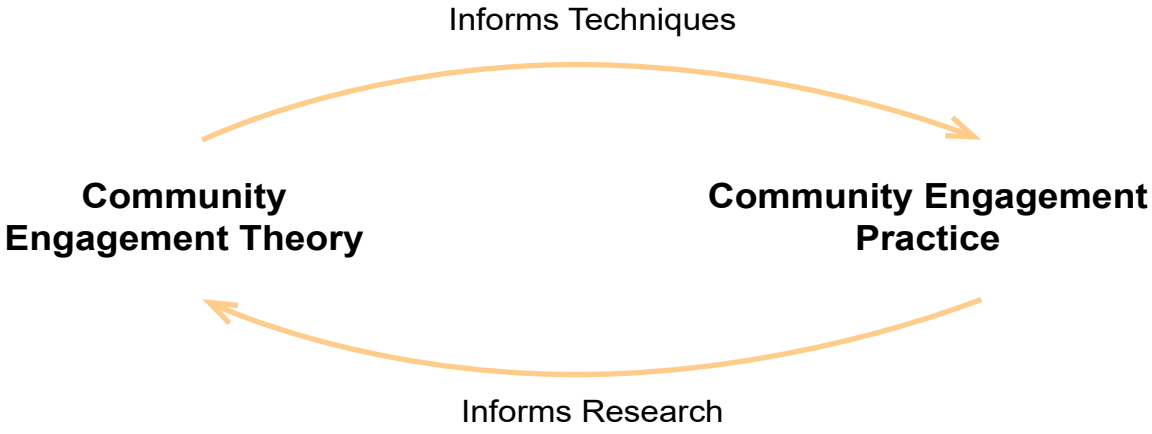


Figure 2.3: Community Engagement in Theory and Practice (Heermann 2016)

Figure 2.4: Community Meeting Presentation (Kraly 2015)

DOWNTOWN RECYCLING PROJECT DILEMMAS

Education

Individual unwillingness to take part in publicly provided recycling services may stem from a lack of education. According to a recent study, 22% of Kansas City residents, or 102,080 people, do not recycle weekly although they do receive city-provided services to do so. Many do not recycle because of common misconceptions or because they do not have convenient access (Kansas City Planning and Development 2015). For example, many do not understand the need to recycle or how and what to recycle (SCS Engineers 2008).

Expanded educational efforts may also increase people's willingness to compost. Education about proper composting processes could address common misconceptions that keep people from participating. Many people are often concerned about potential odors or pests associated with composting. If done correctly, the collection of organic food waste can be fairly safe and clean, contrary to what many may think (SCS Engineers 2008).

The strategies proposed by the studio offer possible ways to make recycling and composting more comprehensible. Education is an important element of the proposed open space and linkage strategies. Education about recycling and composting can take the form of not only outreach programs but also artwork, visual prompts, or various amenities in public space.

Efficiency

Inefficiencies found in the regional study relate to waste collection and transportation. For example, multiple haulers drive many of the same routes to collect along similar waste streams from neighboring properties. If more recyclable waste streams are further separated to collect individual recyclable or compostable materials, then additional trucks may be on the roads and driving similar routes. Instead, waste could be collected at centralized locations and shared by multiple land uses clustered in a dense area. Many business or residential complexes downtown currently own individual bins for trash and recyclables. If organic, glass, plastic, or paper are collected in single streams, countless more bins may fill alleys and service areas. Waste haulers may be required to make many more routes and stops if multiple buildings do not share central waste collection points. Service and function is an important element of the proposed privately shared collection points, which are explained in chapter three. Data collection may help efficiently predict the needs and trends of Kansas City's waste production, and integrated technology can make data collection easier. The city has already invested in GPS trackers, which have been documenting the routes of all city-funded haulers. Further technology investments in sensor equipment could notify haulers when bins are full to minimize collection routes. Possible technology and data collection scenarios are later addressed alongside proposed waste system improvements.

Accessibility

Although the city strives to provide trash and recycling opportunities to many residents, current collection services only reach 75% of Kansas City's population who live in single-family housing. The remaining 25% of residents, or 116,000 people, do not receive such services (Kansas City Planning and Development 2015). This makes recycling inconvenient for many. Later proposals in this document explore outcomes if the current collection system expands to accommodate more people.

The city has considered an organics collection program, which has not yet been implemented. According to a previous study, the program would only serve residents living

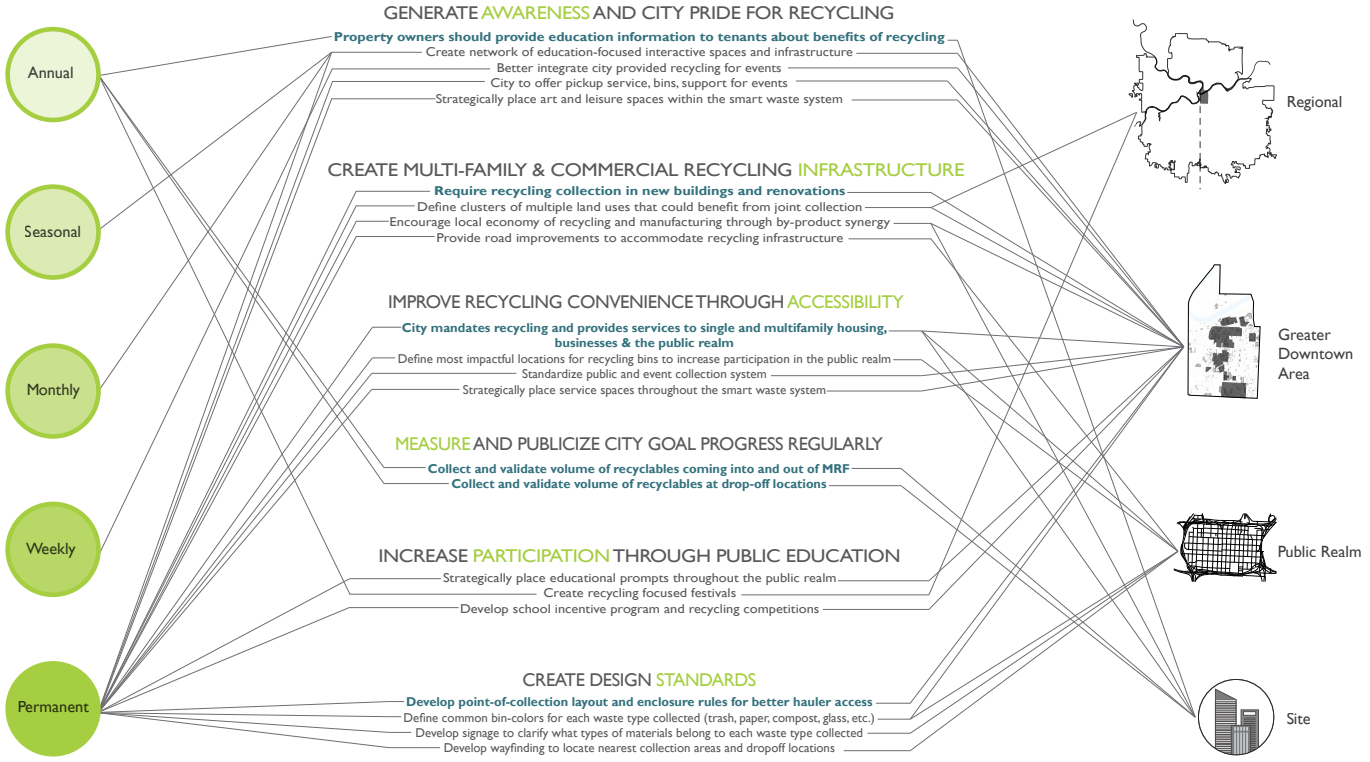


Figure 2.5: Project Goals The project goals created by the studio were framed to address the main dilemmas found in the research (KCDC 2015).

in single-family units (SCS Engineers 2008). Outcomes of a citywide organic waste program are later explored, with the intention that all residents are provided this service.

Large events intermittently contribute to a large portion of the City's waste; however, many events do not offer attendees accessible places to recycle or compost. Bridging the Gap has outlined several ways to plan a sustainable event, but few policies require recycling to be provided (Bridging the Gap). More waste produced at these events could be collected and diverted from landfills if the city asked all public events to promote more sustainable waste practices.

Well-designed public spaces can integrate recycling and composting, create healthier urban environments, and improve the quality of life for local residents (Hou 2010). However, the inventory of the Greater Downtown Area shows how access to recycling and composting is limited in public spaces. Recycling is rarely an option where trash bins are provided in the public right-of-way and parks, and organic food waste collection is never offered. The application of recycled materials also rarely exists. If a strategic plan for public space prioritizes sustainable waste practices and the application of sustainable materials, then recycling and composting behaviors may be encouraged.

DOWNTOWN RECYCLING PROJECT METHODS

Student Project Collaboration

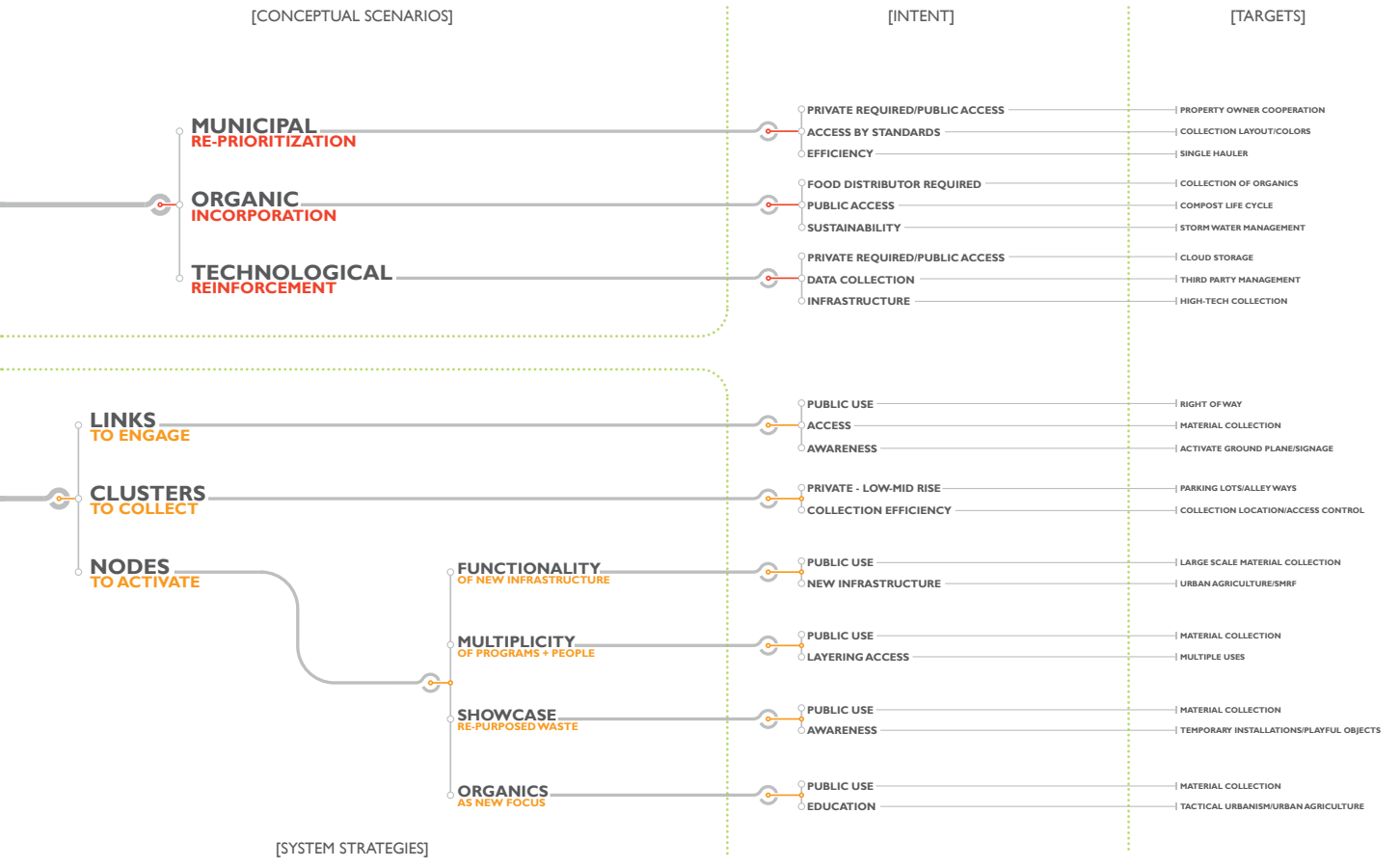
The entire Downtown recycling project was completed by eleven students over the first semester with an additional four students the second semester. However, the analysis and conclusions about community engagement during this project was conducted and written for this report individually, which includes the documentation of meeting notes and interviews as listed in the appendices. All figures created by any member of the class are referenced collectively as "KCDC 2015" or "KCDC 2016." Figures attributed to the author of this report are cited "Heermann 2016."

The findings of the collaborative project are discussed in the project development chapter of this report, while the individual student conclusions of community engagement are discussed in the conclusions chapter.

Project Vision Framework

The group project's vision framework, displayed on the right, was developed after substantial research and reflection had been done on recycling and composting in Kansas City. The framework was meant to guide the remainder of the research and design phases. The system strategies explain the later design strategies, which includes links, clusters, and nodes.

Figure 2.6: Project Vision Framework (KCDC 2015)


[CONCEPTUAL SCENARIOS]
[INTENT]
[TARGETS]
MUNICIPAL
RE-PRIORITIZATION
ORGANIC
INCORPORATION
TECHNOLOGICAL
REINFORCEMENT
PRIVATE REQUIRED/PUBLIC ACCESS
ACCESS BY STANDARDS
EFFICIENCY
FOOD DISTRIBUTOR REQUIRED
PUBLIC ACCESS
SUSTAINABILITY
PRIVATE REQUIRED/PUBLIC ACCESS
DATA COLLECTION
INFRASTRUCTURE
PROPERTY OWNER COOPERATION
COLLECTION LAYOUT/COLORS
SINGLE HAULER
COLLECTION OF ORGANICS
COMPOST LIFE CYCLE
STORM WATER MANAGEMENT
CLOUD STORAGE
THIRD PARTY MANAGEMENT
HIGH-TECH COLLECTION
LINKS
TO ENGAGE
CLUSTERS
TO COLLECT
NODES
TO ACTIVATE
FUNCTIONALITY
OF NEW INFRASTRUCTURE
MULTIPLICITY
OF PROGRAMS + PEOPLE
SHOWCASE
RE-PURPOSED WASTE
ORGANICS
AS NEW FOCUS
PUBLIC USE
ACCESS
AWARENESS
PRIVATE - LOW-MID RISE
COLLECTION EFFICIENCY
PUBLIC USE
NEW INFRASTRUCTURE
PUBLIC USE
LAYERING ACCESS
PUBLIC USE
AWARENESS
PUBLIC USE
EDUCATION
RIGHT OF WAY
MATERIAL COLLECTION
ACTIVATE GROUND PLANE/SIGNAGE
PARKING LOTS/ALLEY WAYS
COLLECTION LOCATION/ACCESS CONTROL
LARGE SCALE MATERIAL COLLECTION
URBAN AGRICULTURE/SMRF
MATERIAL COLLECTION
MULTIPLE USES
MATERIAL COLLECTION
TEMPORARY INSTALLATIONS/PLAYFUL OBJECTS
MATERIAL COLLECTION
TACTICAL URBANISM/URBAN AGRICULTURE
[SYSTEM STRATEGIES]

PARTICIPANTS WITH MANY PERSPECTIVES

Key Collaborators with Different Roles

Many people were involved in this downtown recycling project. Although primarily conducted by the students at the KCDC, it would not have been possible without the guidance from several people and organizations. With grant writing and funding support from the Mid-America Regional Council Solid Waste District (MARC), the KCDC progressed with help from an advisory committee, professional preview group, and the everyday residents, workers, and users of public space in Downtown Kansas City. Many people have a stake in this downtown project, and an attempt was made to consider the needs and opinions of all.

Each person or entity involved in the guidance of the project development played a slightly different but important role in the outcomes. Where some offered technical knowledge about the factors of waste management downtown, others provided broader thoughts about what the project could offer the entire metropolitan area or region. While some were more concerned with the feasibility and logistics, others were more interested in how the project could be shared with local leaders and the larger community to inspire change.

Advisory Committee

The advisory committee included eleven members and was invited to review the project and provide critical feedback and guidance on the studio's research and design. These reviews occurred at two meetings and an open-house event during the fall and again during the spring semester. The committee offered expert advice on sustainable design and planning and practical waste management techniques. They collectively represented various stakeholder opinions within the community.

Although some members on this list were not always available to meet and a few were invited midway though the project, this group is collectively represented by the following people and organizations:

- John Blessing, Deffenbaugh Industries
- Staff Representative from the Environmental Protection Agency
- Dominique Davison, Principle Architect, DRAW Architecture + Urban Design LLC
- Cassandra Ford, Business Recycling Program Manager, Bridging the Gap
- Lydia Gibson, Independent Planner and Recycling Consultant
- Scott Harris, Downtown Neighborhood Association
- Tom Jacobs, Environmental Program Director, MARC
- Nadja Karpilow, Solid Waste District Environmental Planner, MARC
- Marleen Leonce, City of Kansas City, MO - Solid Waste Division
- Lisa McDaniel, Solid Waste Program Manager, MARC
- Kristin Riott, Executive Director, Bridging The Gap

Professional Review Group

Several design professionals reviewed the studio work at two occasions in October and December of 2015. During the spring semester, the professional reviews and advisory committee meetings were merged, as both groups represented stakeholder concerns, whether from an expert waste management perspective, local neighborhood perspective, or an urban design perspective.

Participatory design processes can be done in a number of ways, with a number of outcomes, and for a number of reasons. The following research seeks to document the design responses to community input during the recycling and composting student project.

Figure 2.7: Key Collaborators Key participants in the project include the advisory committee and the professional review group who guided the work of the students at the Kansas City Design center (Heermann 2016).

Many Participants Creates a Dilemma

If participatory design improves community projects, a student project could be improved with the guidance of an advisory committee made of professionals and members of the community. However, there is difficulty for students, as designers, to make sense and make use of the array of feedback from a community with diverse experiences and perspectives.

FOCUSED LITERATURE REVIEW ON COMMUNITY ENGAGEMENT

Introduction

The following literature review summarizes the theory, recent history, methods, and limitations of participatory design, or community engagement during the design process. Some argue there is a stronger need for designers and planners to incorporate and understand community engagement (Marcus 2008; Sanoff 2008). Because of its positive impacts in the success of a project, participatory design is slowly becoming more common (Hester 1974; King 1989). Advocates of participatory design have documented successful examples of its use to promote the growing trend (Wener 2014).

Participatory Design Theory

Designers often describe participatory design as co-design or including the broader community in decision-making and management of future plans, rather than passive bystanders or recipients of the designs (King 1989, p.ix). When participatory design is related to "visioning, strategic planning, and deliberative democracy," it can be applied to not only community planning and design but also to other fields working with social capital (Sanoff 2008, p.57-59). There are many ways a community can be included in design approaches; however, proponents argue that there are important differences between design against people, for people, with people, and by people. True participatory design can be described as design with people, which fosters user involvement and allows less powerful people to be heard (Hester 1974, p.53-55).

To design successful places, the site's aesthetics and user needs should be considered. It is the designers' responsibility to thoroughly investigate basic user needs in a design process before a final plan is implemented (Marcus 2008). "Unique social variations," such as socio-economic status, life-cycle, gender, and ethnicity, make designing with communities a dynamic process (Hester 1975, p. 37-38). This process should incorporate community engagement techniques that allow members of the neighborhood area to voice their opinions and ideas. The techniques used may be influenced by social variations and may include surveys, advisory committees, design charrettes, or public hearings (Sanoff 2008, p.64). Other techniques, such as group brainstorming or drawing sessions have been found to "improve creativity" within the a design charrette (King 1989, p.8; Kirk 1988, p.85)

Growing Trend to Design with Communities

Participatory design is rooted in long-standing democratic traditions (Sanoff 2008, p.57). The trend for communities to share decision-making power has been growing and has been documented throughout the decades (King 1989, p.3). Randolph T. Hester, a professor in the Department of Landscape Architecture and Environmental Planning at the University of California at Berkeley, has written extensively on the subject for over forty years. He notes that although "citizen participation in city design did not come of age in the U.S. until the 1960's era of civil rights," a joint decision-making with the community has been a growing trend (Hester 2006, p.6"). Earlier in his career, he commented:

> "*There seems to be a movement in design toward neighborhood design 'with people.' The designer's responsibility is to facilitate design with people by fostering user involvement throughout the neighborhood design process* (Hester 1974, p. 52-53)."

The observation reveals a slow-growing movement for design focused on community engagement. Nearly thirty years later, Hester acknowledged design *with* people "requires more from the designer, not less," yet he still advocated for participatory design (Hester 2001, p. 35). If

community engagement during a design process requires more effort from designers, then there must be substantial benefit for design *with* people to be a chosen approach.

Community Engagement Through Observational Research

Examples of community engagement in the early stages of research can be drawn from writings about social observations. Walter Hood explains that to become familiar with how a site or system functions, the designer must observe how people currently use and behave. Behavior settings can point to "which physical elements and their function may be needed in the development of social infrastructure to sustain community life (Hood 2004, p.146)." Without sometimes knowing it, a community can lead an observant designer to understand how a community functions within a site or infrastructural system. The keen observer can later identify what the people enjoy and what is needed but may be missing.

Understanding the Community and Gaining Trust

When a designer enters a community to offer help as an outsider, he or she must become closely acquainted with the people through social interaction, just as the designer would become familiar with the site through observation. Rodger Fisher and William Ury, two professors in the field of negotiation, have written heavily on the mechanisms of social relations. Both parties within a negotiation must build a working relationship with the other to have mutual cooperation. "It is much easier to attribute diabolical intentions to an unknown abstraction called the 'other side' than someone you know personally (Fisher and Ury 1981, p. 37)." A community may perceive a leader as an outsider who will not understand them.

Hester has noted examples in his own experience when planners' good intentions have been misunderstood and used as a scapegoat for political frustrations (Hester 1975, p.23). A designer should become acquainted with the demographics and social spheres surrounding any project, just the same as he or she would when becoming acquainted with the topography or physical characteristics of a site. In this way, later confusion and trust-related problems between designer and community may be avoided.

Before radically suggesting a single solution, a thoughtful designer or planner may first offer a set of examples that other cities or neighborhoods have done to solve a similar issue. In this way, the strategies for possible outcomes can be eased into the conversation without directly saying it should happen in the situation at hand. "Reactions to the dummy proposals by specialists and clients will help to establish the terms for devising more serious possibilities." Such examples allow the designers to probe the audience's reactions without jumping into details (Hack and Canto 1984, p,179).

Gaining Support with a Clear Project Vision

Attitudes about a project can improve with the help of a clear vision plan and suggestions for possible actions. Hopkins notes that in the process of making plans with the community, decisions are made more easily when people are first led into a discussion with a clear vision. In one example, "a high-participation approach involving ten teams and over a thousand people resulted in little more than a great deal of interactive participation (Hopkins 2001, p.215)." A planning process can be good when the community is involved, but it can be better when an ideal outcomes are first brought to mind. Vision statements and goals can lead to better discussions about design solutions, but visions may also need

to be reframed until the solutions become apparent (Fisher and Ury 1981; Hopkins 2001, p.215).

Bringing the Right People Together and Creating More Buy-In Overtime

Without successful community engagement, poor urban planning can occur, creating a sense of separateness, rather than togetherness in the community (Hester 2016, p. 2). Such instances further divide people from their neighbors who may have different points of view yet good ideas for how to make better places to live (Wetli 2016). However, when people from different fields and backgrounds are invited to the table with an open and transparent process, more ideas can be shared, which may inspire more successful design outcomes (Barth 2016).

There are equally strong requirements in the participatory process besides having a strong plan. For a project to move forward, one needs to persuade "enough (and the right) people of the merit of changing their ways to fit the plan." A plan may require the help of many people to change their common behaviors or ways of thinking. In addition, the authors agree that it can be essential to collaboratively secure"the resources to accomplish common elements considered essential (Hack and Canto 1984, p.178)." It may sometimes by impossible for an individual or single entity to accomplish a large scale change alone. The planner in this case would need the backing of local community members to pull the project forward. Community engagement is the key to finding that local support, or buy-in.

A doctoral study conducted by David Barth, president of a large planning firm in Gainesville, Florida, found that situational leaders and increased opportunities for community engagement overtime lend to the success of a project. In the early phases, charismatic leaders can catalyze without the need for strong community backing. However during the implementation phase, a leader who "knows how to get things done" is much more vital along with greater public involvement (Barth 2016).

Limitations of Participatory Design

Though participatory design has advantages, it also has disadvantages Including more people in collective decision-making can increase the amount of different opinions and eventually slow down the process. In some cases, residents in an area being redeveloped may "view the design process as a means of developing neighborhood power to accomplish other ends (Hester 1975, p.2)." Political agendas, alienation, and costly setbacks can deter design solutions from being made (Sanoff 2008, p.59). Designers may deal with strongly-opinionated stakeholders and struggle to find what is the best for a site. Often, people simply want a chance to be heard, despite what may actually happen (Hopkins 2001, p.184).

Community input may increase how much of the designs later are implemented and used, but it may not improve the overall successfulness design. People may buy in to an idea if they believe they assisted in its formation, but does that mean the idea is better with their help? Lewis Hopkins, a leader in planning theory, suggests that there is a difference between the success of a plan and a plan's execution. Participatory design may bring forth key leaders to carry a planning project forward, but the quality of a plan cannot be measured simply by how much it is later used (Hopkins 2001, p.215).

Participatory design can also sometimes be conducted without the best intentions from the designer (King 1989, p.5). Although written nearly half a century ago, "A Ladder of Citizen Participation" shows how participatory design is

sometimes conducted with a manipulative intent to placate the public or sell them an idea by making them feel included. An eight-step ladder illustrates the levels of community participation from citizen power at the top, to tokenism in the middle, and nonparticipation at the bottom. Some public projects may only reach the lower rungs of nonparticipation, where project interaction is labeled as "education." Rather than discussions of project concerns, the public meeting becomes an educational information session, rather than a further exploration of design alternatives. Other times, participation is used to "learn how to defeat potential opponents rather than learn their views so as to change the content of proposed plans (Hopkins 2001, p.184)." Moving up the ladder, examples of public interaction become a truer partnership between designer and community (Arnstein, 1969, p.216-220).

Discussions during participatory design can become heated when the issues are held in extremely high regard by stakeholders. When the community discusses alternative solutions for controversial issues, such as the "allocation of funds, the setting of standards, or the siting of facilities," that affect many people, the decision-making process can be slowed and difficult to continue. For example, higher standards that protect the environment may negatively affect corporate businesses, who may object to those standards. However, consumer advocacy and public interest groups may challenge lower environmental standards. Lawrence Susskind and Jeffrey Cruikshank write about approaches to resolving public disputes.

> *"What counts most in evaluating the fairness of a negotiated outcome are the perceptions of the participants. The key question is, 'Were the people who managed the process responsive to the concerns of those affected by the final decision* (Susskind 1987, p.17)*?"*

The authors remind designers and policy-makers that although a negotiated outcome may not meet the true expectations of either group, they can aim to coordinate a positive negotiation.

Communication of Ideas

There are two parts to the narrative of any design, which are key to its success and are important for designers and planners to remember when bringing in stakeholders on a project. Primarily there is the story, or content of the work, such as the people, the locations, and the design itself. Second to the content is the presentation and the way in which the content of the plans are expressed. This can be done through graphic renderings, diagrams, and verbal presentations (Potteiger and Purinton 1998). The proposed plans are only as good as they way in which they are presented to stakeholders.

Open and clear communication during a design process can have negative implications if too much information is shared with community stakeholders (King 1989, p.5). If the community does not understand the ideas, they may reject a proposed design. Kevin Lynch warns designers to control which design idea alternatives are presented to the broader community before final decisions are made. "Confine choice to a few significant alternatives, all with clearly desirable features" so as not to overwhelm the audience with an endless possibility of designs and outcomes (Lynch 1976, p.115). Lynch also advises designers to treat the design presentation as a political act, relating what is communicated to "major interest groups (Lynch 1976, p. 100)." Careful community participation techniques should be considered.

Literature Review Summary

A growing trend in design with people has produced numerous examples of successful projects, which have included participatory design techniques (Wener 2014). Many attribute that success to observation, research, direct user involvement, and focused studies on user needs leading to a trusting relationship between designer and community (Hester 1974; King 1989; Marcus 2008; Sanoff 2008). A better understanding of how co-design affects a specific design process may reveal why a final design may be more successful and better meet the needs of that community.

Figure 2.8: Professional Review Feedback (Kraly 2015)

BACKGROUND SUMMARY

Participatory design processes can be discussed in theory, but they can also be observed in the practice of professional and academic work that invites members of a community to participate. The KCDC studio often collaborates in such community projects with the help of advisory committee meetings and other review sessions where professionals or anyone from the public is invited to give feedback. The Downtown recycling project which has taken place during the 2015 fall semester and the 2016 spring semester, is one example of this collaborative process. The studio allowed the local community to participate during the research and design phases, which created a more meaningful and inclusive project, but challenged students to filter the responses and create a clear vision plan that appeased everyone.

METHODOLOGY | 03

RESEARCH APPROACH

Research Question

What can community engagement add to the downtown recycling project at KCDC?

Research Proposition

Community engagement can help the students create a better project because the advisory committee and other reviewers have different points of view and more expertise knowledge about recycling downtown.

This report uses an observant participatory approach to study the processes and outcomes from this collaborative project to understand how community engagement can guide a project. Community engagement occurred during the KCDC's project development, but further community participation will be necessary beyond completions of the studio. For the project to be truly successful, a strong and careful effort should be made to include the broader community during the implementation of the plans.

Figure 3.1: Professional Review Meeting (Kraly 2015)

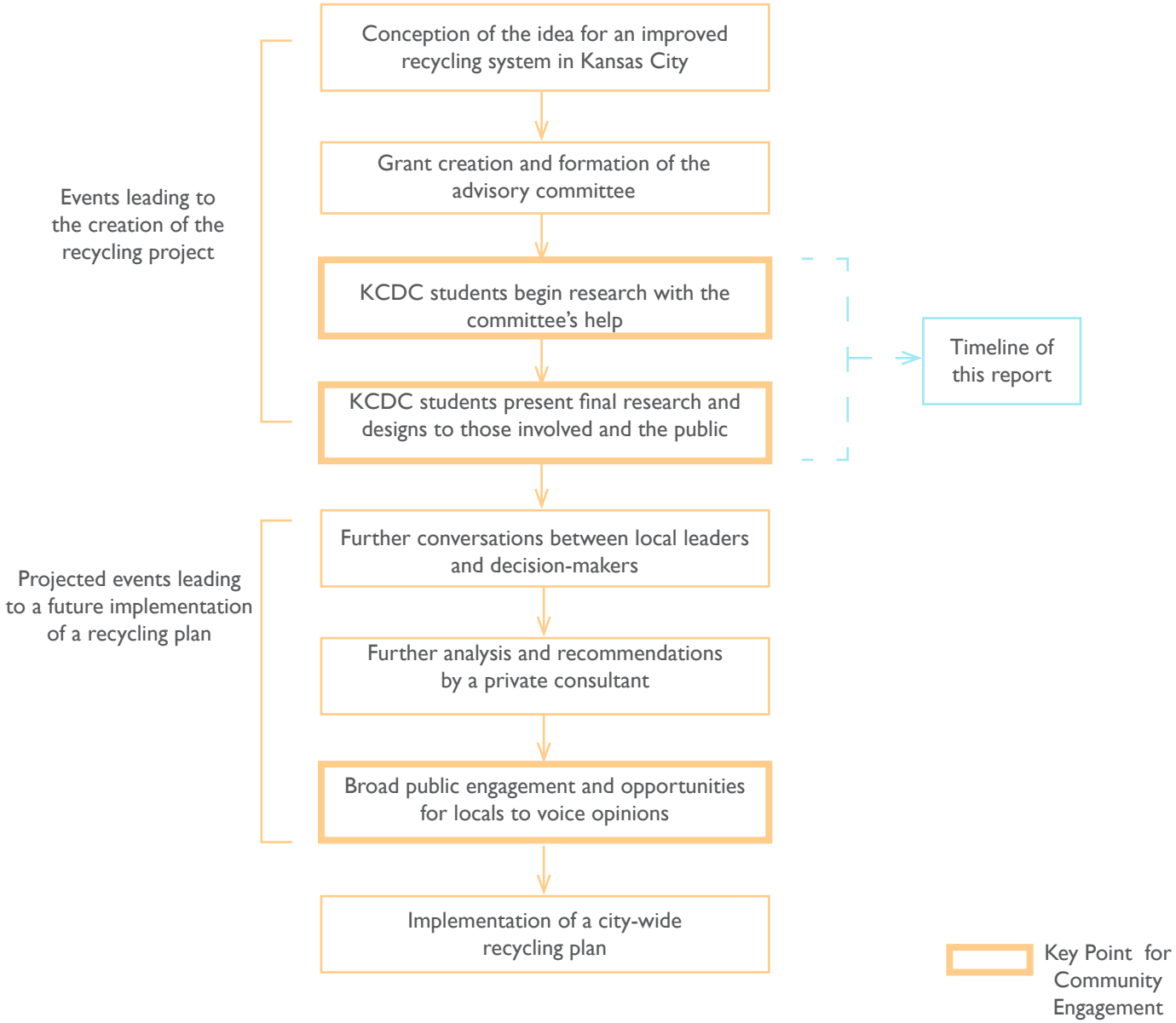


Figure 3.2: Current and Projected Project Development with the Points of Community Engagement (Heermann 2016)

PROCEDURES

Framework for this Report

First hand observations were made by acting as a fully participating member in this project. Studio decisions regarding the advice of the advisory committee or professional review group were noted when observed.

An analysis was also performed on the major topic discussions from the process of community engagement during this collaborative project. A content analysis was performed on discussions recorded in the meeting notes from each of the seven studio reviews and eight personal interviews to find these main discussion topics.

As the diagram on the right shows, takeaways were reflected upon using examples from the project, which were then used along with the literature review to make overall conclusions about community engagement.

IRB Requirements

A formal IRB application was submitted to Kansas State University's Institutional Review Board on January 27, 2016 and an approval letter was mailed.

Figure 3.3: Getting Feedback from the Community (Kraly 2015)

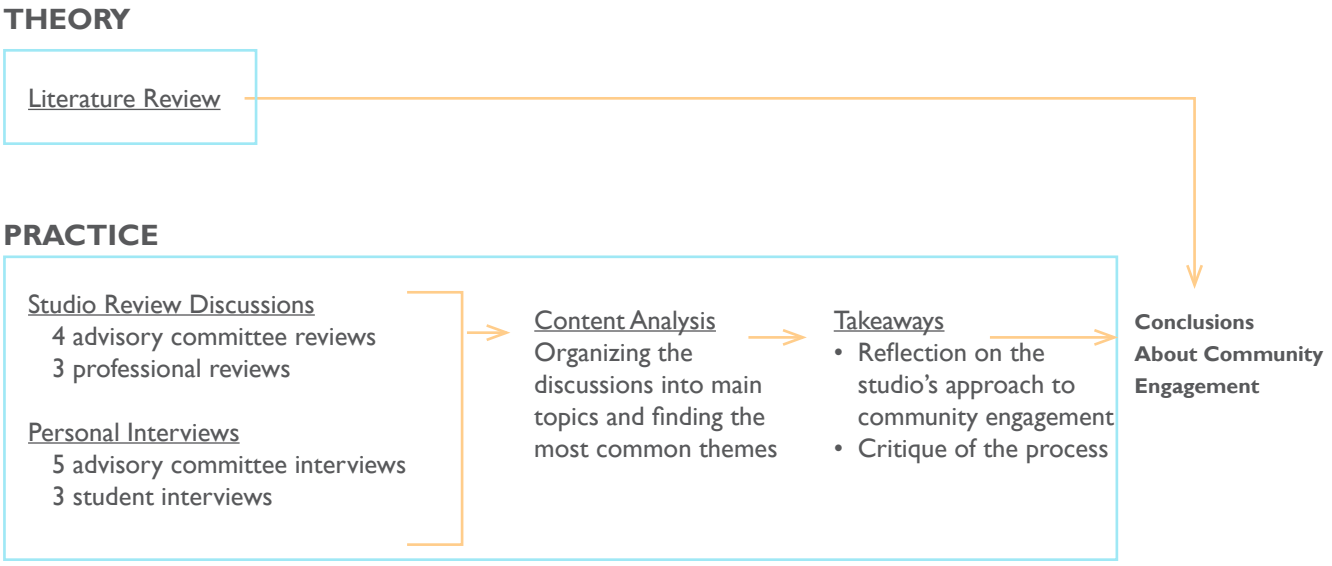


Figure 3.4: Methodology (Heermann 2016)

Advisory Committee and Professional Review Meetings

Four advisory committee meetings and three professional review meetings were held at periodic stages throughout the semester. The advisory committee provided expert advice in the realm of waste management in Kansas City and guided the students on the next steps in research and practical design. The professional reviews assisted the students by allowing them to think more creatively from an architectural design standpoint. The professionals also gave students feedback on how to tell the story of the design and sell the ideas to someone who may be less oriented to the topic of recycling. Detailed notes were taken on the discussions at each meeting. The notes were then organized into general topic categories for the content analysis to be done.

Advisory Committee Interviews

During the spring semester, individual members of the advisory committee were interviewed to gauge their attitudes about KCDC's studio work and progress. The interviews were conducted over a period of about 20-50 minutes, depending on the length of the responses. All interviews were recorded and conformed to the IRB agreements. The following is a list of questions that guided these interviews:

1. What is your role as a member of the Kansas City Design Center's advisory committee?
2. How would you briefly describe the project at KCDC to someone who doesn't yet know about it?
3. How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?
4. In your opinion, did the KCDC studio address the opinions that you or others may have voiced throughout the research and design process?
5. Could you give an example of when the studio did or did not address these opinions?
6. Do you believe the research or final designs will help future progress of Kansas City? If so, could you give an example for how they might be helpful?
7. Do you believe it was necessary for the students to work within the clearly defined scope of research and design first outlined in the grant funding application to the Mid America Regional Council Solid Waste Management Division?
8. Under what conditions do you believe it may have been helpful for the studio to stray from the grant description of the project?
9. Do you have any further opinions about the work or process of work done by the students with the advisory committee?

The answers given by members of the advisory committee helped prove how the students responded to the committee's guidance and altered the research focus to do so. The information gathered in these interviews also reveals their understanding and hopes for the outcome of the project.

Student Interviews

Students involved with the project throughout both semesters were later interviewed to compare these opinions of progress, shortcomings, and expectations with that of the advisory committee members. Three students, in the fields of architecture, landscape architecture, and planning were interviewed. The interviews were conducted over a period of about 5-20 minutes, depending on the length of the responses. All interviews were recorded and conformed to the IRB agreements. The following questions are similar to the questions asked of the advisory committee:

1. What role do you see the advisory council playing in our studio recycling/composting project, this semester and the last?
2. How would you briefly describe the project at KCDC to someone who doesn't know about it?
3. How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?
4. In your opinion, how important has it been for us as students to always address the opinions that were voiced from the advisory council?
5. Could you give an example of when the students did or did not address these opinions?

Responses to these questions revealed the student perspective that could be compared to the attitudes of the advisory council members. Once data was recorded from all interviews, a content analysis revealed what was most valued in the project by the design studio and the stakeholder or advisory council group.

Not all students were interviewed because even a small sample of the class could reflect most experiences of the class as a whole. Three students were selected to be interviewed, and each represented the different academic backgrounds of study within the studio, including architecture, landscape architecture, and regional community planning.

Selecting Adequate Sample Groups

Not all advisory committee members or students were interviewed, and no professional reviewers were interviewed.

Enough advisory members and students were selected to be interviewed so that a variety of perspectives could be understood. Each student represented a different field of study and academic perspective. Advisory committee members were selected who had participated in at least two review meetings with the students. They also were strategically selected for a variety of background knowledge.

No interviews were done with the professional reviewers. Although the feedback from the professionals in design field were helpful to the project, many did not consistently attend more than one review session. Many were also not intimately as familiar with the constraints of providing a recycling program in downtown Kansas City.

Limitations of Study

Although the information gathered, analyzed, and drawn upon can be helpful to gain an understanding on how community engagement occurred and shaped the project, there are limitations to the methodology that may skew the overall findings.

Not all comments that were made at each advisory committee and professional review meeting could be noted. Because no sound recordings were taken, there could have been additional remarks by the reviews that were not documented and therefore, were not reflected in the findings.

Not all people interviewed may have been willing to be completely forthcoming in their responses. The interviewee may have been more critical if another person not associated with the class interviewed him or her.

The conclusions drawn from the review discussions and the interviews can be taken in a number of ways. Because the information is analyzed qualitatively, the main findings were found by a process of selecting the most helpful or revealing points within the participatory design process.

TIMELINE OF PROJECT AND REPORT

Proposed Project Timeline

The project grant describes an anticipated workflow for the studio work from Fall 2015 through Spring 2016. This schedule allowed students to plan ahead for presentations with the advisory council and professional group.

Actual Project Timeline

The actual studio workflow followed a less linear process throughout the two semesters. Research and analysis were continuously done throughout nearly all of the project, and nearly all stages overlapped more than originally predicted. Deadlines were often extended to allow work to be reframed and further researched.

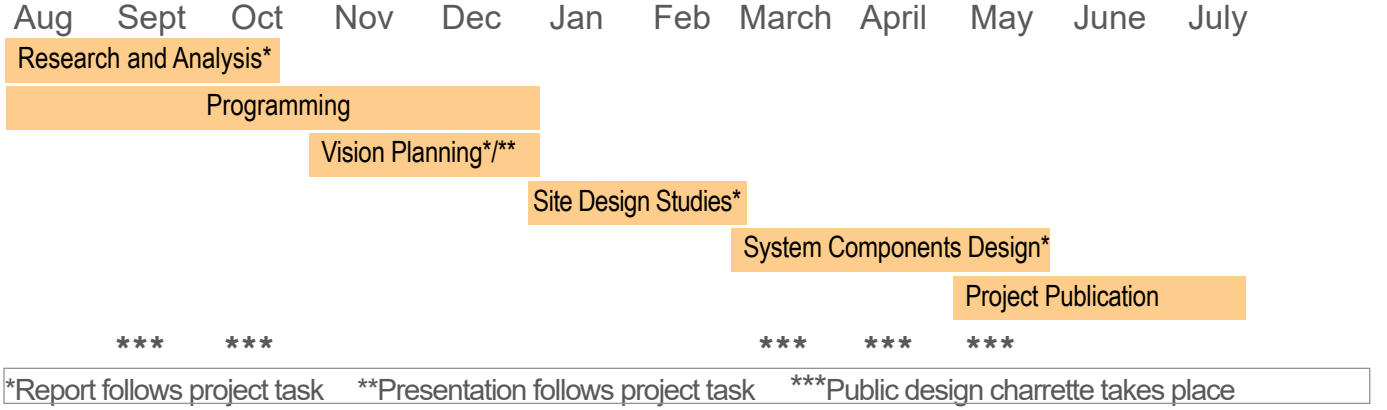


Figure 3.5: Proposed Project Timeline (Heermann 2016)

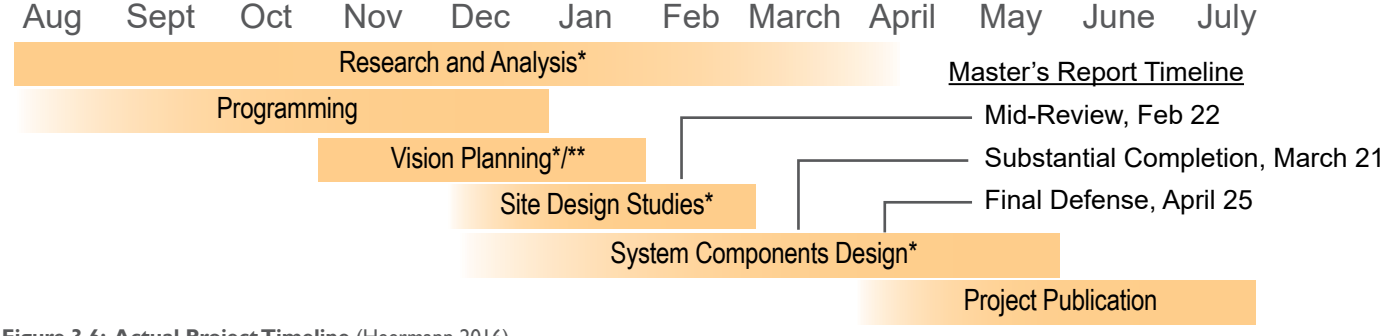


Figure 3.6: Actual Project Timeline (Heermann 2016)

METHODOLOGY SUMMARY

Report Methodology

The observations made while participating in the KCDC studio were used to understand the decision-making processes of the students while working with the feedback from the reviewers. These observations were made by recording the studio's conversations with the advisory committee and professional reviewers as well as several interviews with participants in the project.

Chapter four will explain the design strategies developed by the students with the help of the advisory committee. Chapter five will then explain the observations made during this project development, which were used to identify common themes of the project discussions. Reflections where then made to understand these examples in light of how they led the studio to make decisions.

These takeaways were further reflected upon in chapter six in combination with the theories of community engagement to draw meta-conclusions about what engagement has done and will continue to do for the Downtown Kansas City recycling project.

Timeline of the Project and Report

Because the report occurred alongside the studio project, the report methodology adjusted with the studio's timeline. When the research phase of the project was lengthened and made public design charrettes less likely to occur, the report shifted to focus on the processes of community engagement still occurring in the project. The students quickly realized the complex nature of the recycling industry locally and chose to continue researching, rather than naively moving forward into public charrettes or unfounded designs. This shift in the methodology and approach to community engagement is reflected upon in a critique of the process, found in chapter six.

PROJECT DEVELOPMENT | 04

PROJECT DESIGN STRATEGIES AND DESIGN ELEMENTS

The following pages summarize the three basic strategies of the KCDC recycling project that resulted from collaboration with the advisory committee: clusters, nodes, and links. The project vision framework below originally introduced these three strategies and revealed how the nodes could be further broken down into four types. Throughout the design phase of the second semester, time constraints made it necessary for the KCDC studio to focus on the formal designs of only two of these node types: showcase and organic. The diagram on the opposite page explains how each of these strategies or strategy types address the original project dilemmas of efficiency, accessibility, and education.

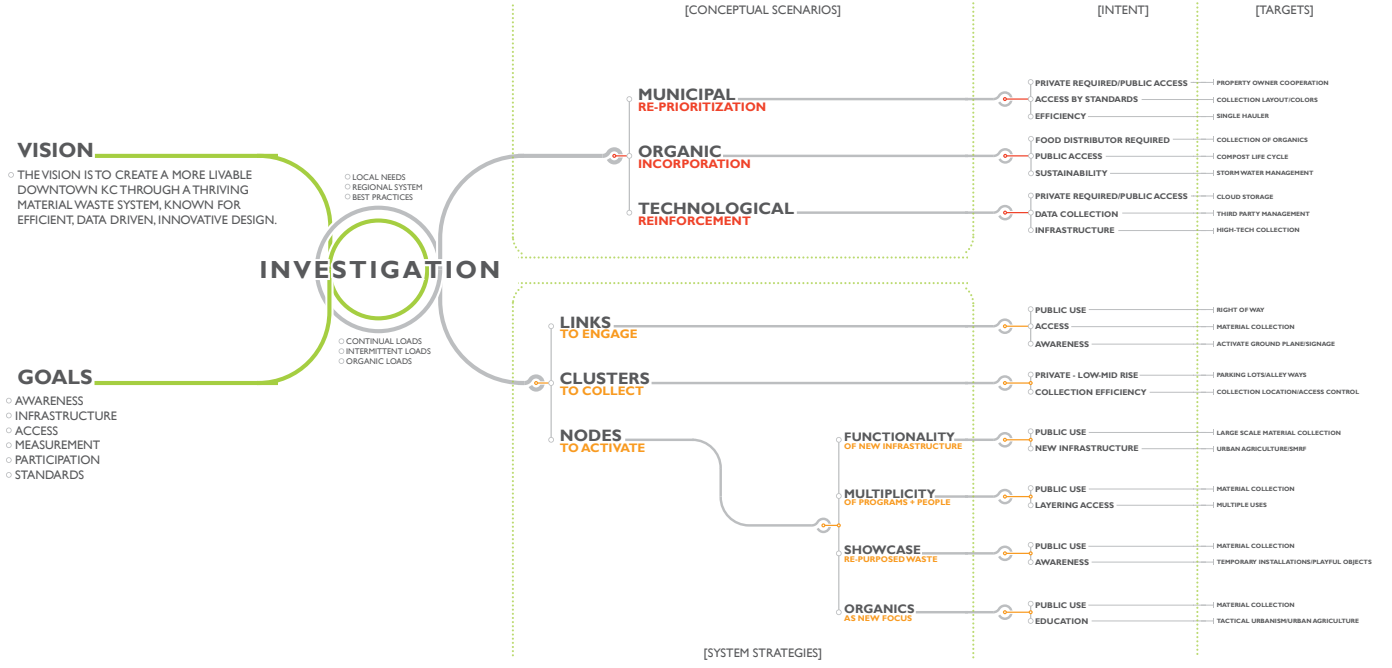


Figure 4.1: Using the Project Vision Framework to Move Forward with Designs (KCDC 2015)

Links to Engage

Links are about engaging the people, bicyclists, and vehicles that are moving through public spaces in highly visible and creative ways. The design elements here make use of ground-plane, signage, and street furniture to make the City's identity and instill pride. They make noticeable statements about recycling in Kansas City and what it can do for the environment and local industries.

Clusters to Collect

Clusters are about efficiently collecting trash, recyclables, and organic waste in the private realm. Businesses and apartments grouped within close proximity to one another can take advantage of the cluster's design elements to free more space in tight areas, leverage bargaining power with waste companies, and make a proud statement about their willingness to participate in sustainable practices.

Nodes to Activate

Nodes are about activating an open space to bring new activity and awareness to a specific issue. Two types of node strategies have been chosen from the original four types proposed in the first semester of the studio project. The showcase node uses art to enhance its surrounding public space and bring people's attention to the topic of recycling. The organic node is a place where the community's organic waste can be collected and broken down into compost that can be used to benefit Kansas City.

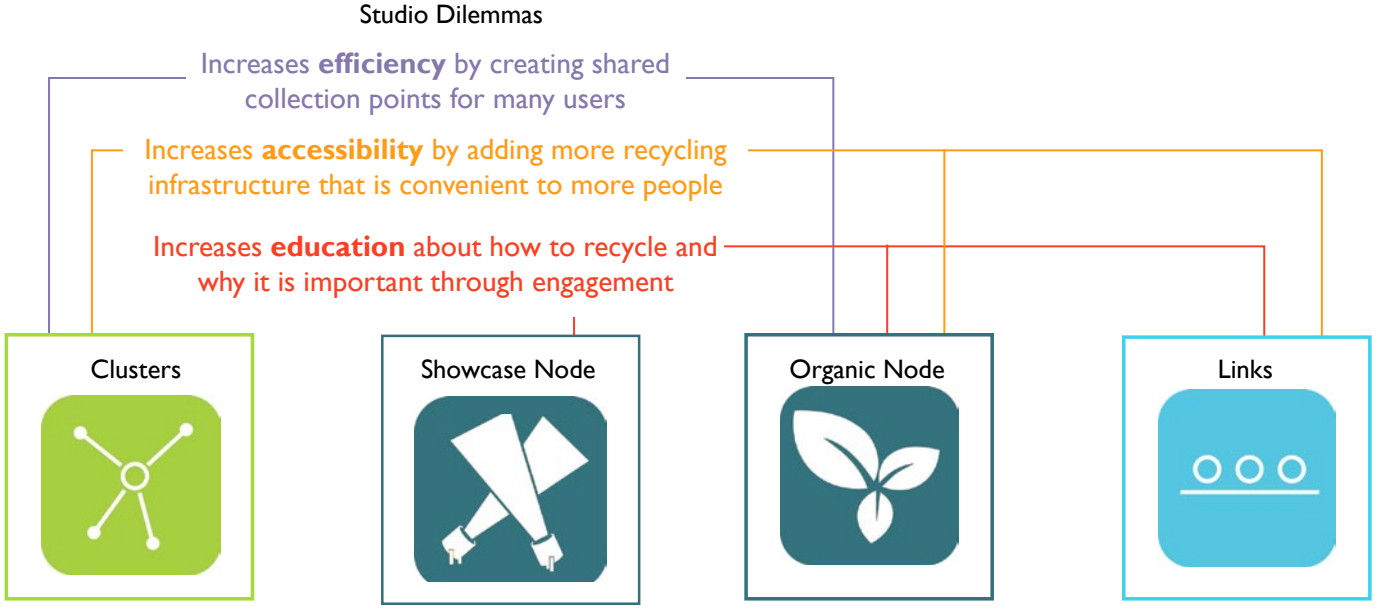


Figure 4.2: How Design Strategies Address the Studio Dilemmas (KCDC 2016)

NODES STRATEGY

The Purpose of Nodes Strategy

Nodes are sites that activate the public realm and create key destinations along the links strategy locations through a variety of purposes such as the collection, removal, and re-purposing of waste. An inventory of current conditions led to specific objectives for the system framework. Two primary objectives for the recycling system are how they function and how they engage the public. To meet these objectives, four types of node strategies were developed. The organic nodes focus on collection of organic waste and use of compost. The showcase nodes display re-purposed recyclable materials. Functional nodes establish new recycling infrastructure. Finally, multiplicity nodes reactivate sites through a layering programmatic activities.

The Organic Node

Organic nodes accommodate composting needs in dense urban areas that may otherwise not be able to compost. Because organic waste is a large part of the overall waste stream, the organic node has been designated to demonstrate the composting process in an urban environment to change current perceptions about the matter. The site demonstrates the collection of organic waste, processing, and use of composted materials. This can promote greater awareness for composting organic waste in the city. The 12th and Holmes site engages the public with new methods of processing organic waste in the city.

The Showcase Node

Showcase nodes are activated with the collaboration of local artist to create artful and interactive displays in areas of high activity. On these sites, artist can be challenged to use locally sourced recycled material to create art that brings awareness and discussion about the proposed recycling system. The selected Truman and Main Street site consists of a light frame structure that will house art instillations, showing the city how their recycled materials can be transformed. The base of the structure will provide social spaces for people to gather and pathways to experience the instillations up close.

The Functional Node

Functional nodes focus on establishing new recycling and composting infrastructure within the public realm. They provide efficient collection areas that educate the public and make the recycling process visible. The City Market location was chosen because it is a well-known destination that can highlight recycling in action and encourage participation. Working with local businesses nearby can offer opportunities for new recycling and composting infrastructure. The site can increase waste diversion rates, while bringing the recycling process into the public realm.

The Multiplicity Node

Multiplicity nodes activate underutilized sites and add to the programmatic features that the public can use. These sites integrate the collection of recyclable waste into the one's everyday routine and increase diversion rates. The multiplicity node design integrates multiple functions on a site to re-activate and better promote a more livable downtown Kansas City. The 17th and Main site will provide interactive public glass recycling to engage and draw the public into a space that will entertain, educate, and inspire people to recycle.

Figure 4.3: Organic Node Design (KCDC 2016)

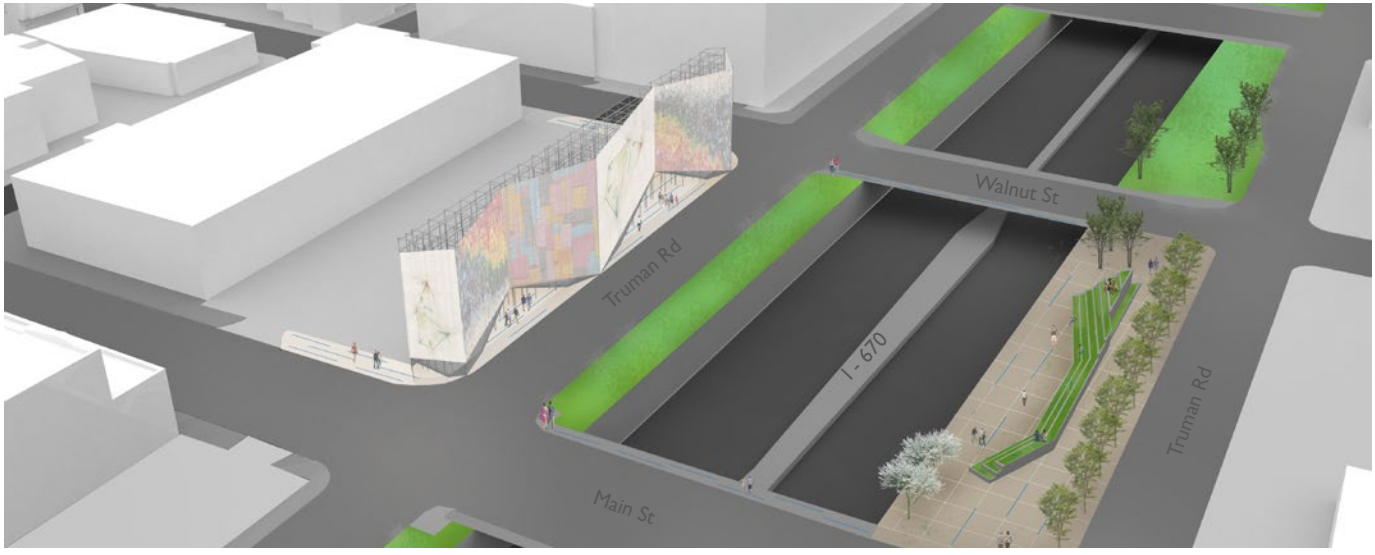


Figure 4.4: Showcase Node Design (KCDC 2016)

CLUSTERS STRATEGY

The Purpose of the Clusters Strategy

Clusters are about efficiently collecting recyclables and other waste among private buildings within proximate areas, such as a city block. Centralized waste collection points that are shared by multiple buildings and users can increase efficiency in several ways.

Broadway Cluster

The cluster shown in the design is located at 7th and Broadway Boulevard in the northwestern portion of the Downtown Business District. The cluster's area includes a wide variety land uses and a high density of buildings, coupled with low operational space. This lack of space in which to place recycling infrastructure and the large scale waste collection needed to service the higher buildings surrounding led to its design intent to free more space on site. Shifting the waste truck's pick-up route to the street allows more room in the parking lot for more amenity or parking.

Each element of the design reflects a specific site requirement or intent to make recycling more convenient and visible. Different colored openings mark the different materials sorted and collected. Because a waste audit was done specifically for the surrounding buildings, bins are sized according to the needs. Solar panels on the roof collect energy that can be used to conveniently open its doors when needed. The cluster design effectively collects waste materials and promotes the behavior of recycling by proudly marking the locations where recycling is happening.

The structure is designed to be ADA accessible, but primarily used by the people who live in the surrounding block or blocks. When multiple apartments or businesses work together to collect their organic waste and recyclables, they may have greater bargaining power with the waste collection companies. Working together to create a cluster, people living near one another can create more space in dense urban areas, save money, and help the environment and local industries.

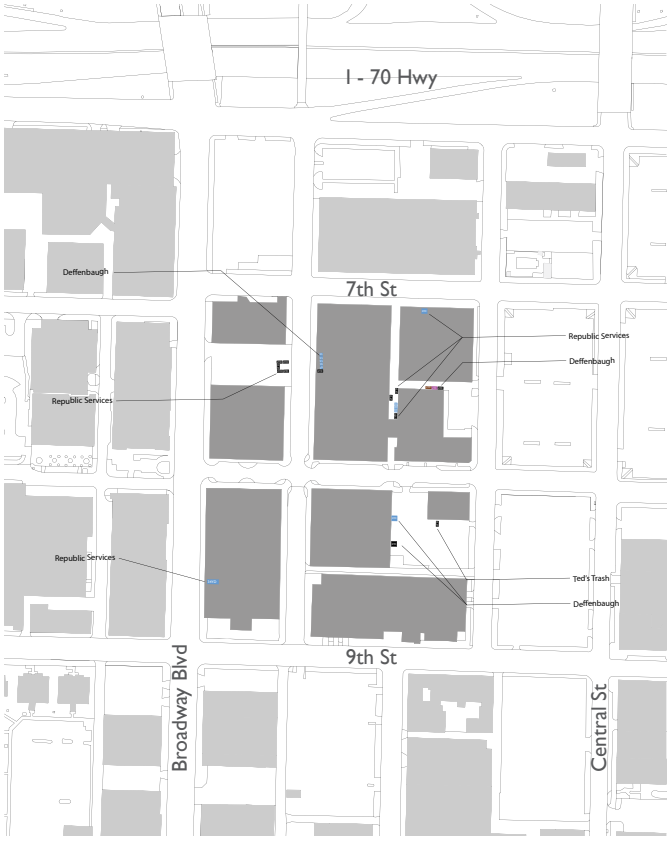


Figure 4.5: Existing Cluster Conditions Thorough inventory was done to understand the current waste collection system on site (KCDC 2016).

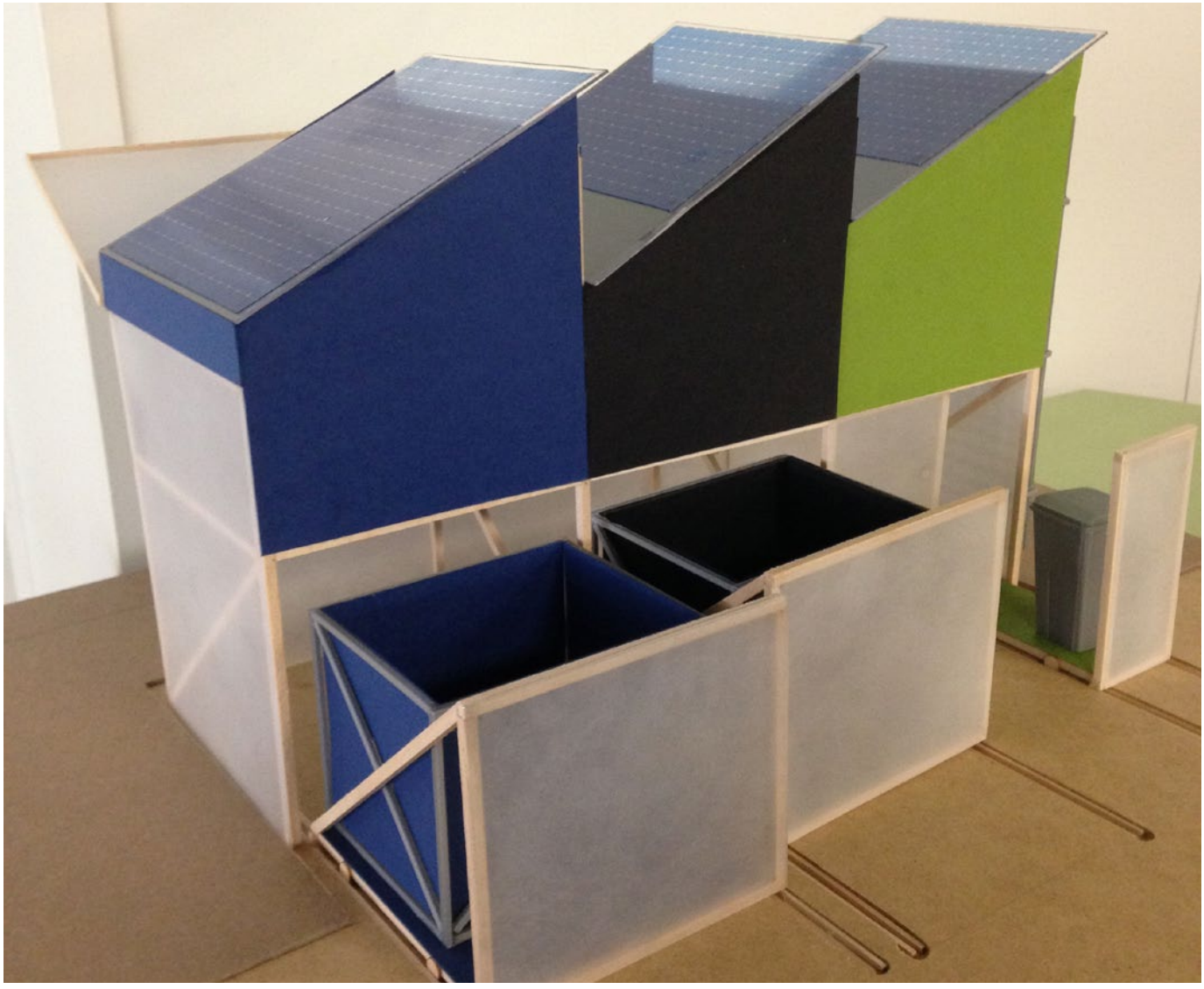


Figure 4.6: Cluster Design A model was made to explain the recycling infrastructure where private waste collection could be improved (KCDC 2016).

LINKS STRATEGY

The Purpose of the Links Strategy

Links connect the areas of activity around town and engage people in the public right of ways to increase awareness and access to recycling.

Creating a Local Industry

Most recyclable materials collected locally are sent to a Material Recovery Facilities (MRF), where they are consolidated and shipped to recycling centers outside the region. A small amount of the city's materials are processed and recovered for local use. Ripple Glass is a prime example of a recovery facility dedicated to creating a closed loop system centered around glass in Kansas City. A new industry could be spurred by the use of recycled plastic street furniture. This industry could create local jobs, a new source of pride, and identity for downtown streets.

Movement Strategies

In addition to standardizing the street furniture, five types of interventions were identified. Each type derived from a series of urban spatial conditions, and are meant to concentrate different types of public amenities with a focus on waste collection and engaging a public in motion.

Slowing

Slowing interventions occur where the right of way expands, offering places for stopping, resting, and socializing. The designed elements offer comfortable spaces to slow one's pace and read signs, sit, park a bike, wait for public transportation, and enjoy being outdoors.

Interrupting

Interrupting interventions are typically placed in areas where a building is setback but adjacent to a narrow right of way. The intervention designs intentionally disrupt the path of pedestrians with playful objects meant to engage the public through interactive features. These objects can include large scale play equipment or touch screen games that come to life when motion sensors in the bins read that recycling is happening. The ground plain uses paint and solar pavers to bring pedestrian attention to the features.

Connecting

Connecting interventions are defined by areas of wide right of way with no buildings on either side of the road. This movement strategy connects pedestrian areas otherwise separated by roadways, bike paths, rail lines, and other obstacles by visually and connecting the pedestrian areas with ground plane paint, signage, educational displays. These interventions each display the recyclable commodity most used in the surrounding blocks. Areas with mostly office uses would display paper products in this strategy, while areas with mostly dining or entertainment might have glass or plastic. The River Market connecting strategy could incorporate a compost display to educate people about the amounts of organic waste created nearby.

Maintaining

Maintaining interventions define a bridge between building facades with similar setbacks. Design elements are arranged to maintain and sometimes screen a defined sidewalk edge. These elements orient pedestrian motion along the sidewalk and create a clearer view of the interface between public space and private zones.

Guiding

Guiding interventions lead people into existing adjacent spaces with the use of street furniture amenities. Once in these spaces, people will find that recycling is still easily accessible and integrated into public space.

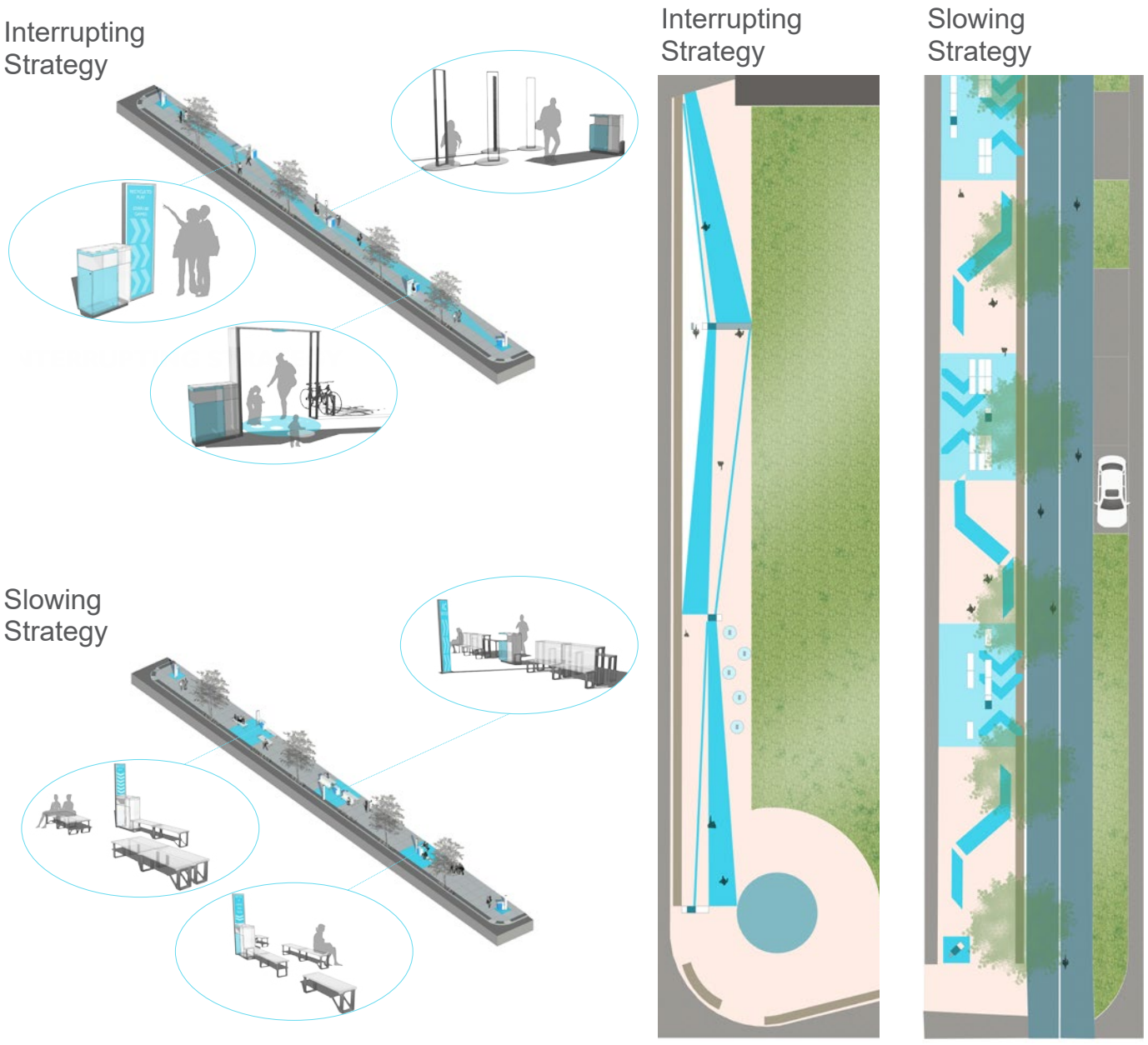


Figure 4.7: Links Design The slowing strategy and interrupting strategy are two ways that the proposed street furniture made of recycled plastics and steel might catch peoples attention and raise awareness about recycling, while also improving accessibility to public recycling amenities (KCDC 2016).

PROJECT DEVELOPMENT SUMMARY

The KCDC's specific design strategies, including the *links*, *clusters*, and *nodes*, as well as the detailed design elements within each strategy were developed with the help of the advisory committee and the professional reviewers. Each of the review sessions allowed for an open exchange of ideas and feedback which spurred further development of the class project.

The next chapter will discuss the takeaways and general conclusions drawn from the studio's experiences and literature review. The main topics of the feedback from each meeting and the reflections of this process from advisory committee members and students can point towards general takeaways and provide specific examples which the theory alone cannot fully describe.

Figure 4.8: Understanding How the System Could Work With Advisory Committee Members (Kraly 2015)

FINDINGS | 05

USING COMMON THEMES TO DRAW CONCLUSIONS

Process of Selecting the Main Topics

The main topics of discussion were drawn from the data through a process of content analysis. These topics were repeated in either the interviews or project reviews and were tabulated in the figure on the right. The purpose of this inventory was to sift through the discussions and identify the most common themes throughout the project and also note where different people's opinions did not align on that topic. This information was synthesized into a set of conclusions about the community engagement during the student project over the course of two and a half semesters. The conclusions are reflected upon in the coming pages and lead to a critique of this particular participatory design process.

Reflecting on the Most Common Themes

The main topics that arose from the conversations during the advisory committee member interviews, student interviews, advisory committee reviews, and professional reviews were first listed and organized into two general categories. The first half of the chart is organized into categories that deal with broader topics, which might have guided the project. The second half of the chart is a list of technical strategies, which may have been important to consider during the project. The final three rows deal with the specific design strategies of nodes, clusters, and links.

Of all these main topics that were touched upon during the discussions, the top five most commonly repeated themes included precedent selection, communication of ideas, infrastructure, finances, management, and policy. These concerns are better explained individually in the list of questions the class continually asked and grappled with throughout the project:

- What are the *comparable cities* after which we should model the system?
- How should the ideas be presented and *communicated*?
- What kind of things should one keep in mind when *designing bins and other recycling infrastructure*?
- How much will it cost to implement what is suggested and who will pay for it?
- Who will *manage* the implementation and long-term maintenance of what we are suggesting and what type of *policies* should be used?

Making Conclusions from the Main Themes for Future Participatory Design Processes

The conclusions from each of the main themes discussed can relate to other future participatory design processes and offer advice when later working with communities. This understanding draws from lessons from the literature review and lessons from the process of designing an improved recycling system for Kansas City with community input.

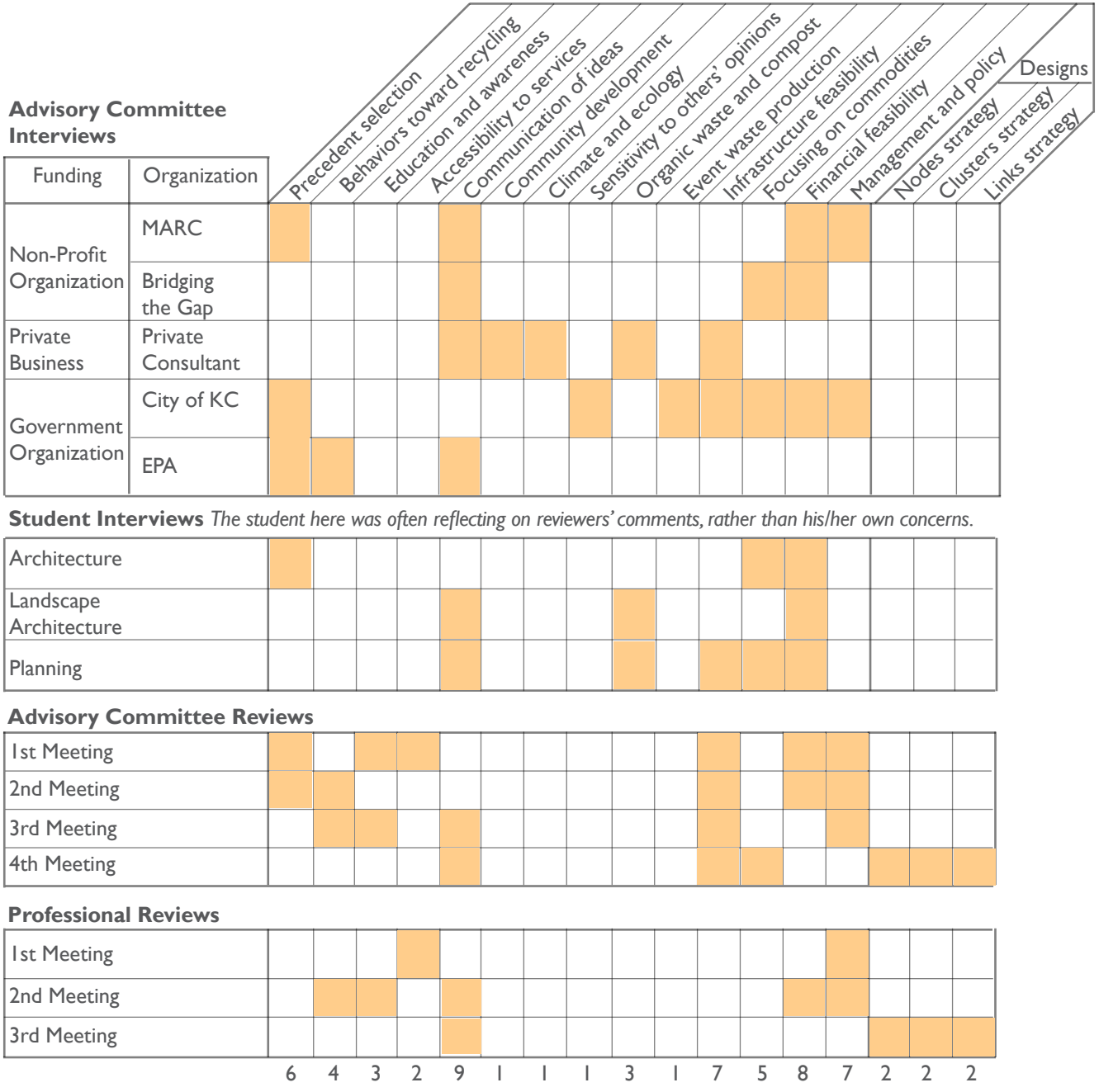


Table 5.1: Inventory of Feedback (Heermann 2016)

FINANCIAL CONCERNS

How Much Will It Cost and Who Will Pay for It?

Differing opinions about the importance of a cost analysis was identified when sifting through the inventory of feedback. The advisory committee consistently brought finances into the discussion at each review. A representative from Bridging the Gap, a non-profit community outreach program, expressed the need for a cost analysis to explain the feasibility and importance to others who would later see the project. Other advisory committee members were less interested in cost breakdowns. Instead, these members believed that having the students investigate costs further may not lead anywhere helpful, saying "Cost concerns can easily become a huge limitation to increase recycling efforts (Appendix 3.1)." If the students' financial research into recycling did not lead to any fruitful answers to the project, it may be a lost effort.

Some attention was paid to the existing finances. The costs that the city pays for recycling per resident in Kansas City was compared to that of other precedent cities (see figure 5.1). There were suggestions to "go more into the costs of trucks, maintenance, and that kind of stuff (Appendix 2.2)." Instead, the students challenged the current waste system with a discussion about alternative scenarios and possible outcomes. Rather than discuss technical details for how the system would be managed and paid, these conceptual scenarios about "municipal re-prioritization" allowed the group to talk about general outcomes, the intent of that municipal change, and who and what would be affected. Figure 4.1 is this vision framework, which was explained to the reviewers.

Students generally agreed to focus on the design rather than technical cost analyses at the start of the design. A student reflected on this process of decision-making.

> *"Although [the question of who was going to pay] was really important, we addressed it from a new point of view with our municipal scenarios approach. We wanted to create an efficient system but not be afraid to suggest that the city is paying for recycling for all residents and businesses. Their concerns in this way were somewhat hindering, but we used them as a jumping point for how to look at it from a different perspective* (Appendix 2.1)."

The comments about how much a recycling program would cost and the concerns about who might pay were important to consider, but the students were more concerned about the limitation this would place on the designs. Rather, they attempted to focus on aspects of the project that would allow them to think in new and creative ways and did not complete a cost study until the end of the design phase.

Finances are Important and Can Put Realistic Limitations on Creativity

The feedback constantly reminded students of the need to think about the project with realistic expectations. It would be safe to say that most real urban design projects prioritize financial concerns in some way. Although an academic project, the research and proposals are rooted in the realities of Kansas City's public space and recycling industry, which affects real places and real people. The financial concerns would definitely be important in the implementation of any recycling program, given the need for long-term feasibility. For this reason, a study of the cost and materials needed to build the pieces in the links design strategy was done (see Figure 5.2). Although this study did not affect the final design proposals, it was an important final step in communicating the value of the design to the community.

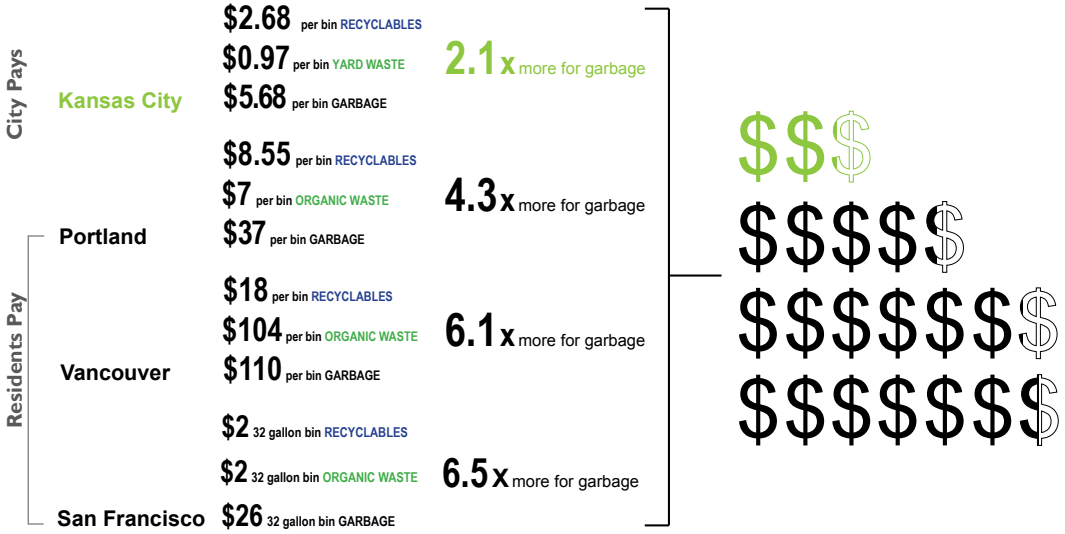


Figure 5.1: Financial Incentives Increase Recycling Participation Costs were compared among exemplary recycling systems, and it was noted that financial incentives can increase participation (KCDC 2015).

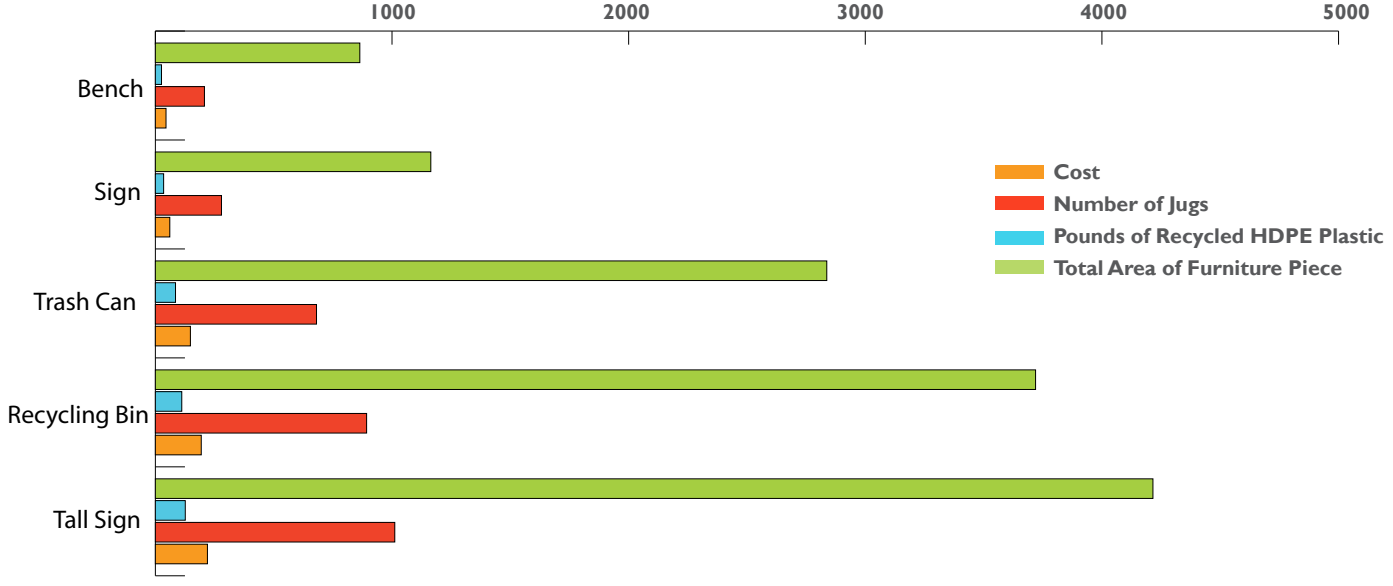


Figure 5.2: Cost and Materials of the Design A thorough study of costs and amounts of recycled material to build each peice of street furntiure in the links strategy may allow the community to see the value of recycled materials and the outcomes of the industry (KCDC 2016).

COMMUNICATION OF IDEAS

Orient the Audience and Tell Them Why the Project Matters Most

Orienting the audience to research and maps at each meeting may be difficult for designers to remember. Although this project required a close understanding of the recycling industry and potential impacts locally, it also required that the ideas be easily communicated to a broader audience who may not fully understand the industry.

Several comments were made by the advisory committee, professional reviewers, and the students about the need to reframe or more clearly explain the research so that everyone understood its importance. The need to complete the project through large scale planning and abstract mapping, then bringing the focus to a human scale, and later relaying that information to a broader audience in meaningful ways was a difficult task.

> *"Lay people are more interested in the so-what and the results. If you get focused on a discussion of process, even if it shows different points of engagement from your perspective, others might not feel like it makes sense and they might not feel qualified to join in the discussion and engage...When talking to a broader audience, focus less on the process and more on translating things as simply as possible (Appendix 1.2)."*

Urban designers may sometimes be placed in a situation where the implications of a design are not fully understood. It is the duty of designers to fully research and communicate the project purpose and outcomes to a client, which can be done through a set of precedent images or story-telling.

State It Simply for the Audience With Precedent Images or Story-Telling

The presentation is equally important to the research and ideas (Potteiger and Purinton 1998). For the ideas to be received well by members of the audience, students needed to carefully plan the methods that the work was explained through computer renderings, diagrams, or verbal explanations.

Precedent images were used during the KCDC presentations to give the audience something to imagine, even if the design was not fully complete. If this was not done, reviewers admitted they were easily distracted by the need to "think of a physical way to understand [the] abstract ideas (Appendix 4.3)."

Story-telling was suggested during a professional review and was later considered in the March public meeting when the ideas were explained to the larger community. A story can explain how one might engage a space or see its impacts in everyday life. The designs must not only be sold, but they should be clear why the project is important to everyone.

Tying the Research to the Outcomes

Feedback was given to students near the end of the first semester to better explain the gap between the proposed solutions and the problems or dilemmas found in the research. One person commented that, "Solutions [are] inherent in the problem. Take a non-design issue, and make a design out of it. Design three to four really good questions to understand inside and out (Appendix 4.2)." Figure 4.2 attempts to better explain this gap by showing how the clusters, nodes, and links directly address the dilemmas found in the research, such as efficiency, accessibility, and education.

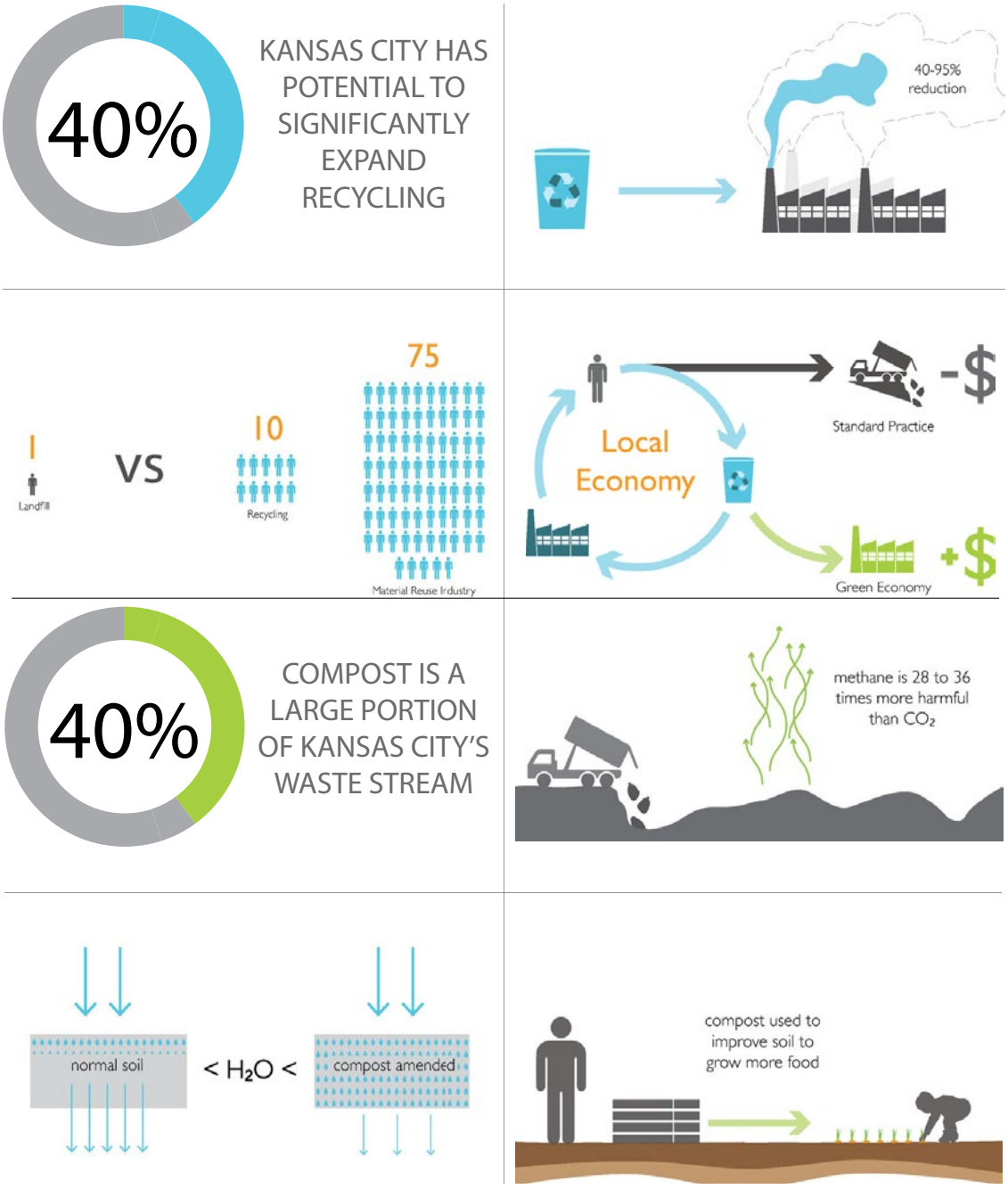


Figure 5.3: Why Recycling Is Important The studio found that reminding the audience of the basic reasons for why recycling is important was vital when also presenting the design ideas (KCDC 2015).

INFRASTRUCTURE CONCERNS

What Should One Keep in Mind When Designing Infrastructure?

The specific design for bins and other recycling infrastructure was brought up by the advisory committee during all meetings and several other conversations. Because several members deal with the realities of recycling and composting on a daily basis, this topic is extremely familiar to them. However, the students were not initially as familiar, and much could still be learned. To get a better idea about what infrastructure the studio would be investigating that exists currently in the Downtown Business District, an in-depth inventory was conducted early on in the project to gain a better understanding (see Figure 5.4).

The advisory committee appreciated this early study and its conclusions because the feasibility from spatial restrictions in the downtown are important realities.

> *"The students did an excellent job identifying the infrastructure and the challenges...You have multifamily houses with small alleys that you cannot serve because that's just not feasible. You can't have collection in the outside parking spaces because it's limited, so you have some challenges to implement the program (Appendix 1.4)."*

The students considered the spatial constraints, but wanted to move beyond an inventory of existing conditions and typical recycling program proposals to design something more inventive. Several advisory committee members developed the grant and original project guidelines with this in mind, saying they wanted the students to create not the usual infrastructure, but more "creative waste management strategies and design... [They are] looking at it with fresh unbiased eyes. They are coming up with unique innovative solutions (Appendix 1.3)."

As the research led to the design phase, students admitted that they felt outside their realm of expertise in the challenge to design larger pieces of recycling infrastructure. There was a struggle to find a middle ground between something too outlandish, large, and different, which could be seemingly plopped down out of context and something too minusculely designed, which could be easily overlooked, such as an additional bin every 100 feet of sidewalk.

Expand the Ways of Thinking and the Applications of Good Design

This example of participatory design reveals that people in other professional fields look to designers and planners for creative answers, even when the topic is outside normal architectural expertise. Although one can be trained to design buildings, streetscapes, and other types of traditional spaces, the realm of design is somewhat endless. Design does not need to end at the start of an alleyway. Rather, designers can learn to design in many facets and challenge the way typical infrastructure is created.

A New Take on Bin Designs

Both the cluster and link strategies propose new bin designs for better waste collection and management. Because much of the feedback centered on technical details of waste infrastructure, aspects of public and private bins were reconsidered, such as bin aesthetics, accessibility, and materiality. Figure 5.5 shows the final proposals that address these aspects of recycling infrastructure. Cluster bins efficiently collect recyclables and other waste from adjacent private buildings, requiring less space, and creating greater bargaining power towards collection companies. Bins along the links are standardized and made of recycled materials that will spur a new recycling industry, create jobs, engage, educate, and provide consistent recycling access to pedestrians.

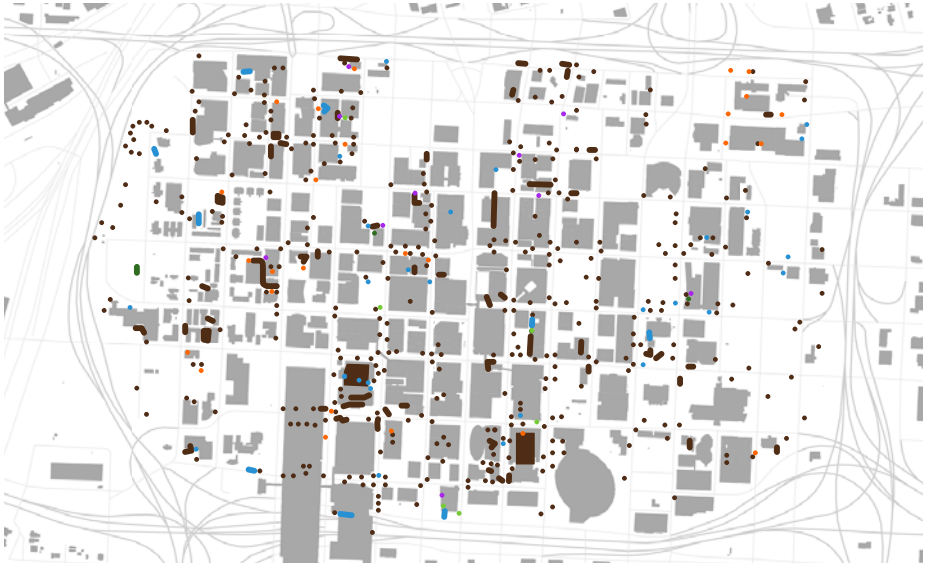


Figure 5.4: Downtown Bin Inventory (KCDC 2015)

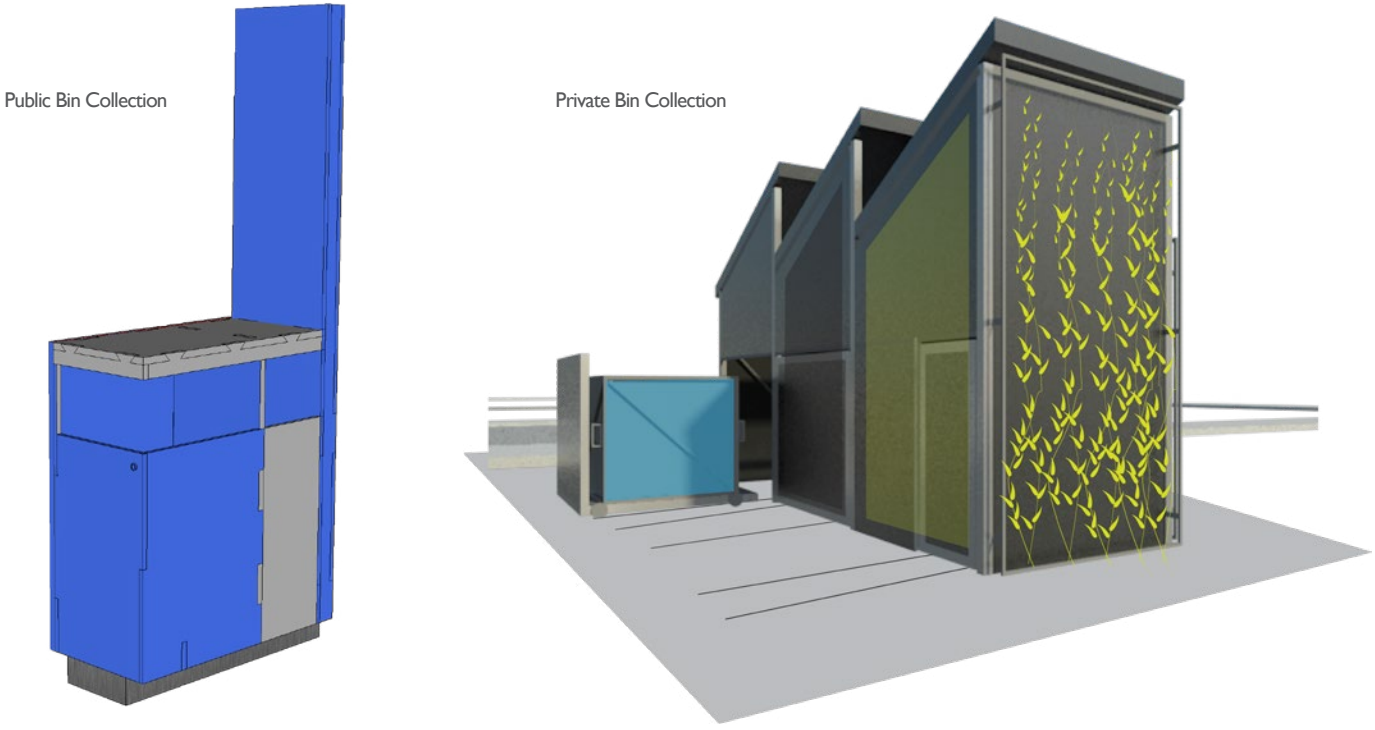


Figure 5.5: Proposed Bin Designs for Public and Private Recycling Collection (KCDC 2016)

PRECEDENT SELECTION

After What Precedents Should the System Be Modeled?

Choosing a precedent to model the recycling system after was an extremely important topic to the advisory committee early in the research phase. The students chose to first research cities with the best practices from which to learn. Yet there were several pushes from some advisory committee members to select more realistic precedents in comparison to size and culture, despite whether those cities are actually much more successful with their recycling program.

> *"When case studies were chosen from Europe, Canada, and the West Coast cities, there was confusion. There are substantial differences between the Midwest and those places that would not make them a good [precedent] culturally and behaviorally (Appendix 1.1)."*

The students ended their pursuit of the perfect precedent and decided that it would be better to move on and begin thinking about other helpful investigations for recycling and composting Kansas City. An interesting comment was made by the representative from the city's waste management department:

> *"It is difficult to find a city where you can compare apples to apples with the same payment, the same size, the same everything... Even though [the cities] were not comparable, they provided an insight as to what works and what doesn't (Appendix 1.4)."*

Even if another city is much larger and has a much different policy and waste management system, there are still interesting pieces from which Kansas City could learn. One student commented, "you can't compare them apples to apples, but they do have progressive ideas that are working in some ways. We can take those ideas and think about them for Kansas City (Appendix 2.2)."

Create a New Example When No Best Practices or Precedents Can Be Offered

In any participatory design process, one may be challenged to design something new for an entire community that they nor anyone in their neighborhood, city, or region has before considered. In the case of Kansas City's recycling system, there was no perfect precedent to follow. Instead the project demanded that a new example be created, unlike anything else before it. Some time can be spent searching for a comparable example, but when none could be found, the designer must choose whether to continue searching or make a new path in the direction of creating something unprecedented.

Designed in Context

The final proposals reflect the contextual needs of Kansas City because the culture, local industry, and current policies of the city were carefully considered throughout the design phase. In the case of the links strategy, regional recycling industries were investigated to find where the largest need for locally produced materials could be met and the largest demand could be created to preserve its possible business overtime (see Figure 5.6). This investigation of local needs and opportunities led to the proposal that all standardized street furniture be made of recycled HDPE plastic. The City's specific waste loads were calculated to find how many pieces of furniture could be created and to reveal the economic value in a material often trashed or sent to other regional recycling markets.

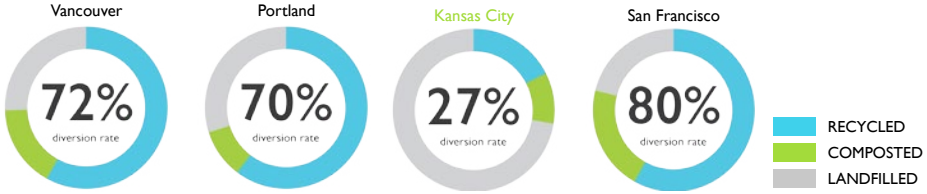


Figure 5.6: Waste Diversion Rates of Other Cities (KCDC 2015)

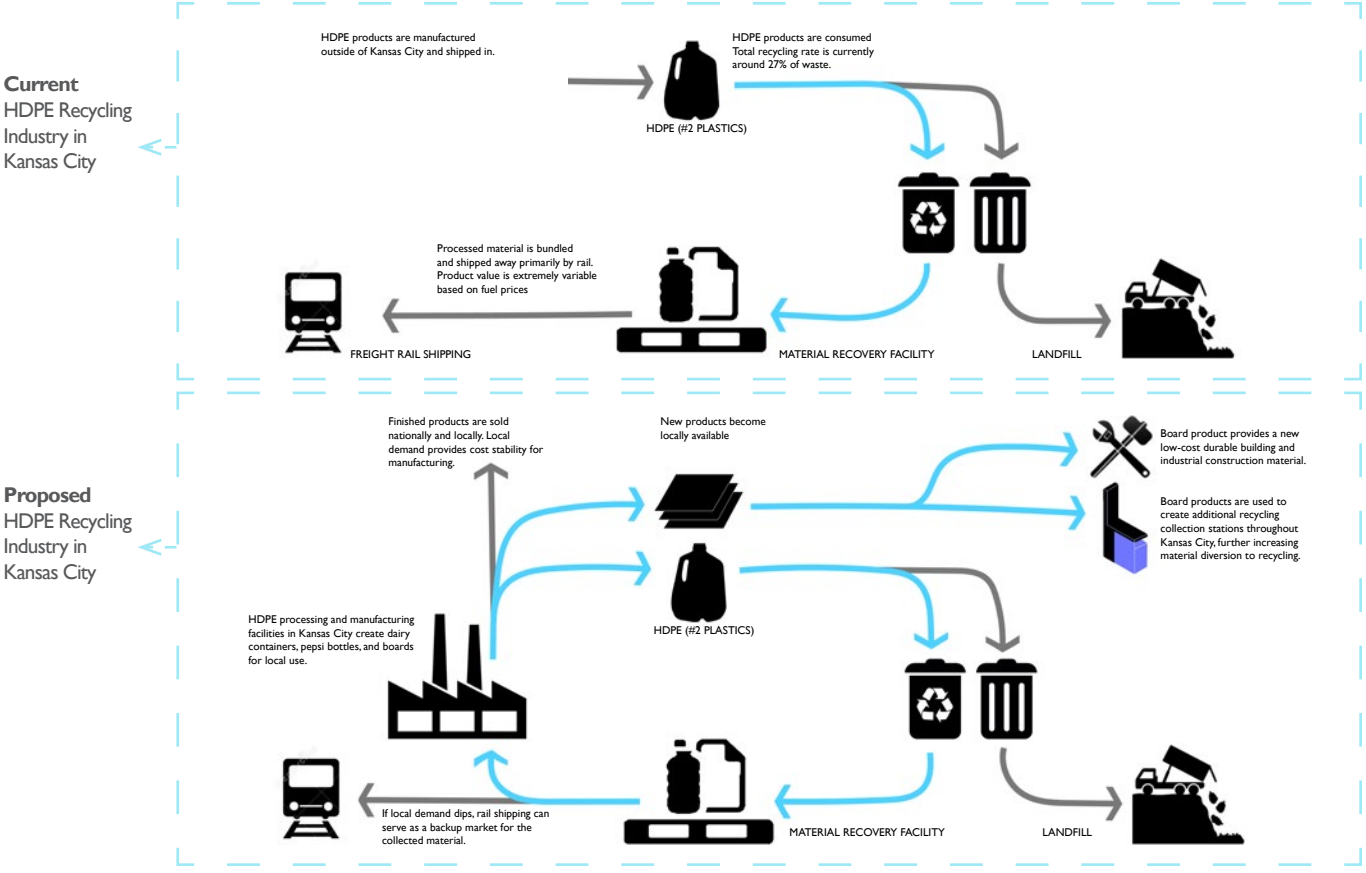


Figure 5.7: Investigating Kansas City's Recycling Industry Opportunities (KCDC 2016)

FINDINGS SUMMARY

Content Analysis, Main Topics, and Takeaways

The content analysis of the community engagement discussions led to four main topics and takeaways. These four main were topics frequently discussed and reflected upon by advisory committee members, professional reviewers, and students committed to the project.

How these Examples Affected the Project Outcomes

Each of the main topics and takeaways impacted the research and design process as well as final designs in several ways. First, the advisory committee's concerns about finances exemplified a community reaction that may be very common, and therefore cost impacts were important considerations in the final weeks of the studio's design work. Second, constant feedback was given for students to reconsider how they shared the ideas with the audience, which led students to carefully execute the final presentation format and design descriptions. The discussions about recycling infrastructure pushed students to design new waste collection bins and challenged them to address the user needs in ways that may not have otherwise been considered. Finally, the search for the perfect precedent conducted by students reveals that the final designs may have not been totally inspired by previous examples, but they were designed specifically for the context of Kansas City.

The takeaways from these topic examples during the project led to broader conclusions in the next chapter about what community engagement has done for this project and what it can continue to do for it in the future.

Figure 5.8: Presentation Day with the Advisory Committee (Kraly 2015)

CONCLUSION | 06

The final conclusions in this chapter take the findings from the content analysis in the previous chapter and connect them back to findings from the studio designs and to the broader aims of this study.

Figure 6.1: Getting Feedback (Kraly 2015)

CONNECTING PROJECT EXAMPLES BACK TO THEORY

Hester's Definition of Design with Community

Using the definitions from the literature of Randolph Hester, this project has been a design process *with* the community. The students interacted with the advisory committee, considered their feedback, and strategically designed the project to fit their needs. The advisory committee and professional review group provided guidance of the project, but they did not produce any of its pieces, which would mean it was a project *by the people*.

It could be argued that the project wavered between a design *with people* and *for people*. Although the students chose not to follow some advice of the advisory committee or professional reviewers at times, they did always have the best interest of the community in mind. The project should be considered as a design *with people* because the careful consideration of how the project would affect all locals.

Arnstein's Levels of Community Participation

Sherry Arnstein's Ladder of Participation could also be used to define the community engagement during the KCDC recycling project. This project has mostly been a *partnership* between designer and community, however, at times the relationship did descend on the ladder towards *placation*. This is because the class allowed them to advise, but retained the power and right to judge the feasibility of the advice, given the studio's priorities.

Examples for how the feedback shaped the student work can be seen in the way the project addressed the main themes of discussion from the reviewers, such as financial concerns, communication of ideas, infrastructure, and precedent selections.

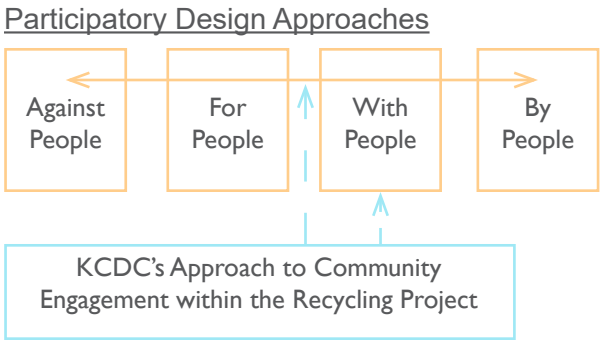


Figure 6.2: Hester's Range of Participatory Approaches (Hester 1974; Heermann 2016)

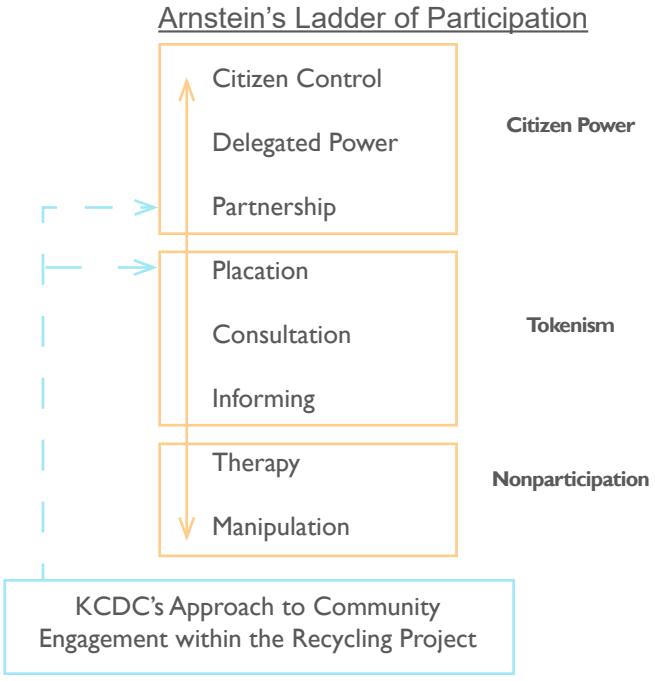


Figure 6.3: Arnstein's Ladder of Participation and the KCDC Project (Arnstein 1969; Heermann 2016)

Figure 6.4: Common Themes Lead to Studio Takeaways (Heermann 2016)

CONCLUSIONS ABOUT COMMUNITY ENGAGEMENT

Drawing Conclusions from the Analysis

The following three conclusions were generated when considering what community engagement does for the Downtown Kansas City Recycling project. The examples and takeaways from the studio project led to meta-takeaways that address the need to catalyze the project, carry it forward, and create buy-in.

Catalyzing the Project

The idea for a recycling study to be done in the Greater Downtown Area first started among a few people at the MARC Solid Waste Division, including Tom Jacobs, the Environmental Planning Director. Together with the KCDC, the grant creation committee began the process of selecting advisory committee members, who would provide critical feedback on behalf of the larger Kansas City population. The community engagement that took place between this committee and the students allowed for many innovative and unconventional ideas that may otherwise never have occurred. As several committee members commented, "Anytime you vision forward, you push the needle forward and you expand the concept (Appendix 1.2)." Although they may have been simply academic studies, the research by the students led to conversations that could later bring further innovation and adoption of a recycling program downtown.

Carrying the Project Forward

If more people with power to make crucial decisions are brought to the table, the student recycling project may pick up more momentum. Thus far, key experts in local waste management on the advisory committee have participated in the project development and delivery. Some of them have suggested the final report be shared with "not only city council people" but also "relevant city department heads," including be Micheal Shaw and Marlene Leonce from the Solid Works Division (Appendix 1.5).

Creating More Buy-In

After the KCDC presents its final research findings and studio design reports, broader community engagement should be conducted to give more people the opportunity to learn more, voice more opinions, and spark more interest. With an increase in stakeholders committed to the project, the recycling plan can better serve more people.

A new recycling program will depend on re-prioritization from municipal policy and leaders, backing from private businesses, and individual willingness to change from residents and workers. The plan must not only be designed well, but it must allow for public and private buy-in. If most Kansas Citians want a local recycling program to be successful, then they may be more likely to collectively make it more successful by participating in recycling behaviors at home, at school, or at their workplace.

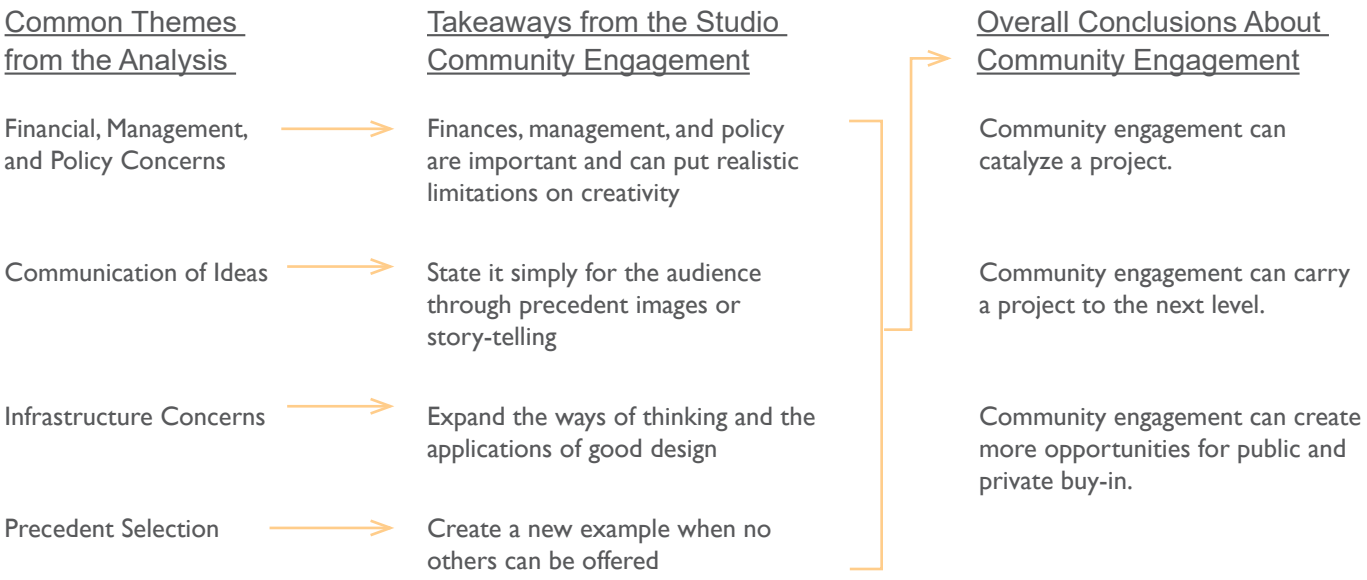


Figure 6.5: Common Themes Lead to Studio Takeaways and Overall Conclusions (Heermann 2016)

A CRITIQUE OF THE PROCESS

Keeping the Committee Informed on Key Decisions and Changes

Generally speaking, the process of community engagement conducted at the Kansas City Design Center throughout this project was successful. According to the advisory committee members interviewed, there was a good level of communication and a successful presentation format in a group setting.

However, improvements can always be made. Recommendations were given that students should recap before each meeting and inform the audience which suggestions were helpful from the previous meeting in the project development and which suggestions were not (Appendix 1.5). "If you don't take people's advice, explain why (Campbell 2016)." For the advisory committee to be fully participating, they should be fully informed on the progress and decision-making.

Prioritizing Research Over Public Participation at the Start

Four public design charrettes were originally scheduled in the project's grant description. Such meetings would have allowed anyone from the public to participate in an attempt to increase the opportunities for locals to react, spread the word, and improve the plans. However, these meetings never occurred due to the underestimated amount of research needed to understand the existing recycling system in Kansas City. The more information was discovered on the topic, the broader the project grew. Less priority was placed on the need for public participation at this time because a strong foundation in the research was more important in the long-term outlook. It was believed that the help of the advisory committee's feedback was sufficient community engagement at that point.

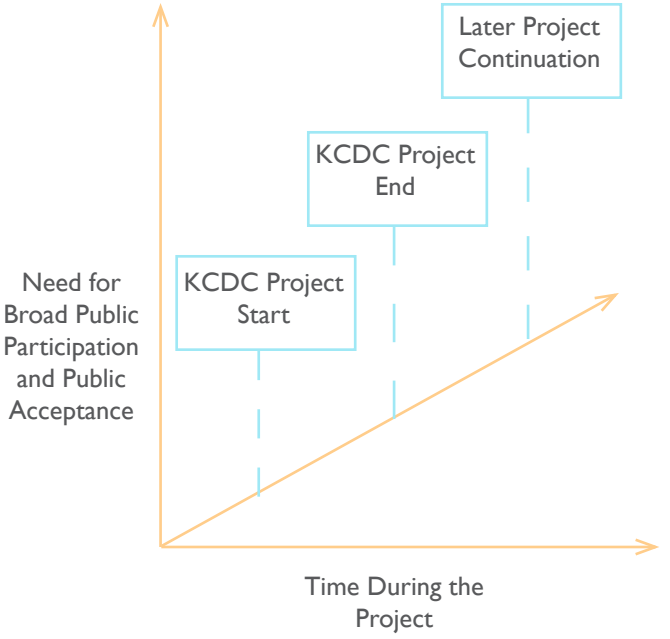


Figure 6.6: Increasing Need for Broad Public Participation (Heermann 2016)

As the project develops past the help of the KCDC, more public participation may be necessary. This idea is further explored in the following pages.

Research Limitations

The process of participatory design that occurred during this studio project could have been further aided by several factors.

When presentation skills fell short of the reviewers' expectations, the feedback sometimes reverted to confused questions or unrelated topics, rather than direct comments on the research or designs. Stronger emphasis on the students' verbal presentation could have facilitated better conversations between the students and advisory committee. Although the graphics may have fully described a thought process or research, the presentation alone sometimes distracted from the intended message when students were less than prepared to speak.

Students often spent several days or weeks in the early stages of the project attempting to find data that either did not exist or was not readily available to the public. Although the realization that local data on waste management is not sufficiently recorded or shared was a conclusion to the first semester research, stronger conclusions could have been made and communicated with the advisory committee. Only once local data is recorded and shared, will it be truly useful to planners and designers who try to make sense of its meaning. Sharing this data with the community will further educate the importance of recycling and composting and persuade more people that a strong recycling program is needed.

Figure 6.7: Communicating the Ideas (Kraly 2015)

QUESTIONS FOR FURTHER RESEARCH

Further research should be done to ensure adequate forms and amount of community engagement are properly conducted throughout the implementation of any Downtown recycling project in Kansas City. Choosing the best people to target through community engagement should also be carefully considered to ensure the program's follow-through and success.

Choosing the Target Users

To increase the amount of waste that is being properly recycled, it would be best to target the users, including residents or businesses, that can contribute to the most change. The studio at KCDC proposed to increase waste diversion rates in Kansas City by targeting all multifamily housing units and businesses alike because they are not currently receiving public recycling services. However many multifamily housing units and businesses operate under different circumstances. An additional study may be helpful to understand which types of apartments or condominiums and office or commercial spaces would be best candidates for starting an city-wide recycling system. Many private complexes downtown currently offer such services and are successful in doing so. A greater understanding of the financial structure, building structure, and other circumstances around these businesses and dwelling units may lead to better decisions about who should be targeted first when conducting a pilot study or later full project implementation.

Understanding the Target Demographics

Future community engagement may require an in-depth understanding of the people who will be affected by the recycling program. Their current opinions about waste services will be helpful for gaining trust, communicating a clear vision plan, creating an open dialogue, and conducting a transparent decision-making process to the community. A 2008 study was conducted to understand local perceptions about recycling and composting, however the demographics in downtown Kansas City are changing (SCS Engineers 2008). With more young diverse populations, more people may have changing concerns about what is best in the realm of recycling.

Choosing the Best Participatory Design Techniques

Community engagement can take a number of forms, and there is no one-form-fits-all approach. Depending on the type of issue at hand and the number of people and businesses involved, community engagement can include pilot studies, on-line forums, public meetings, and advisory committees. Perhaps an additional advisory committee with more people with different backgrounds may be helpful for local residents and business owners to have a say. Because a downtown recycling program will affect many diverse users with diverse interests, a combination of participatory design techniques may be necessary to assure more people have access to joining the conversation in the correct way and at the correct times.

A true participatory process should consider the needs of people who are not able to attend public meetings or who may not normally be tuned into local issues. Online forums may provide greater access of information and avenues for public discussion. Commercial campaigns and social media may also be creative ways to get people's attention and invite them to participate in local discussions. Whatever is found to be the best methods of outreach and community engagement, a strong effort should be made in any future study to understand how to best reach the most people in the most effective ways.

CITY

Missouri Organic will privately contract with the city for organic collection to restaurants, grocery stores, multifamily and single-family housing. By offering compost services to all of these land use types, waste diversion to the landfills will increase. All organic collections will be picked-up by the contracted hauler and taken to composting sites to be managed. Missouri Organic will be responsible for checking all collections to make sure only organic material is being collected. This will also help decrease contamination rates. All restaurants and grocery stores will be fined by the hauler if improper disposal of material is found.

RESTAURANTS + GROCERY STORES

The city privately contracts with Missouri Organic and requires organic collection for all restaurants and grocery stores. Organic collection is available to multi-family and single family collection. The city will provide education and training for restaurants and grocery stores and will be responsible for providing a "How To" document for multi-family and single family housing. As part of the mandate of organic collection, the City will issue a set of design standards that all restaurants and grocery stores must comply with. By participating in organic collection the city will be able to use the compost produced for street landscaping throughout the city.

MULTI-FAMILY HOUSING

Multi-family housing is not required to collect organics. Collection of organic will be made available by hauler. The city will issue a "How To" document that will be available for those who choose to participate in the collection of organics. Although organic collection is not required property owners will have the choice of either contracting with Missouri Organic or deliever organic to a community compost facility (if available) to reuse in urban agriculture or community gardens. Community gardens are to be take care of by community volunteers or a selected ambassador with significant knowlege and training to maintain a sufficent community compost garden.

SINGLE FAMILY HOUSING

Collection of organics will not be required but offered to single family housing. Single-family housing will have the choice of either contracting with Missouri Organic for collection of organics, follow "How To" document to properly compost at home, or deliever organics to community garden. Compost soil will be available by hauler for hose who wish to begin compost at home. Individual compost soil is also accepted if delievered to Missouri Organic. Community gardens are to be managed by community volunteers or selected ambassador with sufficent education and training to provide efficient management for community garden.

HAULER

Missouri Organic will privately contract with the city for organic collection to restaurants, grocery stores, multifamily and single-family housing. By offering compost services to all of these land use types, waste diversion to the landfills will increase. All organic collections will be picked-up by the contracted hauler and taken to composting sites to be managed. Missouri Organic will be responsible for checking all collections to make sure only organic material is being collected. This will also help decrease contamination rates. All restaurants and grocery stores will be fined by the hauler if improper disposal of material is found.

Hauler

Visitor

Multi-Family & Commercial Property Owner

City Official

Single-Family Home Owner

Multi-Family Tenant

Figure 6.8: Considering the Users and Those Affected by the Recycling Project The KCDC studio considered who would be affected and their possible reactions to a downtown recycling program, but no formal study was done to survey people of their current opinions (KCDC 2015).

APPLICATION TO DESIGN PRACTICE IN A CAREER

A Designer's Role as Spokesperson

The role of architects, landscape architects, and planners can be broad depending on the demands of a project. Although not often considered the primary role, these professionals "may be challenged to contribute as spokesperson for their projects or as commentators on community design and environment issues (*Architecture Student's Handbook* 2009, p.23)." Students who graduate from design fields can benefit from participating in academic projects that expose them to community engagement because students will be better prepared to manage public relations and community outreach.

Academic Settings With Real World Experiences

The KCDC provides opportunities for student and community collaborations to occur. These experiences in an academic setting can not only simulate but actually perform successful participatory processes. As students learn about these real world situations, they learn what is appropriate to communicate, how to take on design challenges, such as recycling infrastructure, how to prepare for difficult questions, such as finances and management, and how to present the ideas in a way that makes the most sense. Overall, students learn how to make sense of a wide array of feedback and better appease stakeholders or clients.

The Real World Could Use More Community Engagement

If more people considered the benefits of participatory design, perhaps better projects would be implemented with greater success in Kansas City. Controversy over tax financing, architectural aesthetics, and construction inconveniences can often damage both public and private endeavors. Misconceptions about what factors lead to better public environments, stronger economies, safer neighborhoods, and more sustainable material waste systems can stem from a lack of knowledge and a lack of communication from those who make the decisions. According to some local professionals, "participatory processes are almost nonexistent in Kansas City (Campbell 2016)." If this is the case, perhaps a stronger effort for transparent decision-making processes and open exchanges of information could be made.

The Need for Flexibility

Many instances required students to be flexible in their academic research and methodology. However, the challenges encountered in this project that related to design, timelines, and communication may be similar to those found in a professional setting. As one discovers new circumstances, one must adapt and continue to research the information needed to complete the task. This process, as noted from the observations of this studio, is not linear. It may often be necessary to revisit research, reframe design iterations, and reconsider the goals and methods.

Figure 6.9: The Process of Getting Feedback from the Community (Kraly 2015)

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Figure 1.1: Kraly, Sarah. Conversations with Advisory Committee Members. 2015. Kansas City Design Center, Kansas City, MO

Figure 2.1 Heermann, Lauren. Community Engagement in Theory and Practice. 2016. Kansas City Design Center, Kansas City, MO.

Figure 2.2: Kraly, Sarah. Community Meeting Presentation. 2015. Kansas City Design Center, Kansas City, MO.

Figure 2.3 Kansas City Design Center. Vision Mission and Goals. 2016. Kansas City, MO.

Figure 2.4 Kraly, Sarah. Advisory Committee Meetings. 2015. Kansas City Design Center, Kansas City, MO.

Figure 2.5 Kansas City Design Center. Project Goals. 2015. Kansas City, MO.

Figure 2.6 Kansas City Design Center. Project Vision Framework. 2015. Kansas City, MO.

Figure 2.7 Heermann, Lauren. Key Collaborators. 2016. Kansas City Design Center, Kansas City, MO.

Figure 2.8: Kraly, Sarah. Professional Review Feedback. 2015. Kansas City Design Center, Kansas City, MO.

Figure 3.1: Kraly, Sarah. Professional Review Meeting. 2015. Kansas City Design Center, Kansas City, MO.

Figure 3.2: Heermann, Lauren. Current and Projected Project Development with the Points of Community Engagement. 2016. Kansas City Design Center, Kansas City, MO.

Figure 3.3: Kraly, Sarah. Getting Feedback from the Community. 2015. Kansas City Design Center, Kansas City, MO.

Figure 3.4: Heermann, Lauren. Methodology. 2016. Kansas City Design Center, Kansas City, MO.

Figure 3.5: Heermann, Lauren. Proposed Project Timeline. 2016. Kansas City Design Center, Kansas City, MO.

Figure 3.6: Heermann, Lauren. Actual Project Timeline. 2016. Kansas City Design Center, Kansas City, MO.

Figure 4.1: Kansas City Design Center. How Design Strategies Address the Studio Dilemmas. 2016.

Figure 4.2: Kansas City Design Center. Organic Node Design. 2016. Kansas City, MO.

Figure 4.3: Kansas City Design Center. Showcase Node Design. 2016. Kansas City, MO.

Figure 4.4: Kansas City Design Center. Existing Cluster Conditions. 2016. Kansas City, MO.

Figure 4.5: Kansas City Design Center. Cluster Design. 2016. Kansas City, MO.

Figure 4.6: Kansas City Design Center. Links Design. 2016. Kansas City, MO.

Figure 4.7: Kraly, Sarah. Understanding How the System Could Work With Advisory Committee Members. 2015. Kansas City Design Center, Kansas City, MO.

Figure 5.1: Kansas City Design Center. Financial Incentives Increase Recycling Participation. 2015. Kansas City, MO.

Tables

APPENDIX | 06

APPENDIX 1:
ADVISORY COMMITTEE INTERVIEWS

Interview 1.1

Environmental Protection Agency Representative
An interview was held on February 2, 2016 at the KCDC studio and lasted 30 minutes.

1. *What is your role as a member of the Kansas City Design Center's advisory committee?*

   As a federal government employee, I cannot technically be a member of an advisory committee. Rather, I can act as a technical and programmatic resource. For instance, I do not vote or help in putting together a grant proposal, but instead I can share the knowledge of technical expertise.

2. *How would you briefly describe the project to someone who doesn't yet know about it?*

   It is the downtown Kansas City recycling feasibility study. There is a hope that this could lead to a model for other communities.

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   Work that was completed since previous meetings is presented. Further studies are presented in areas that the research or advisory committee comments have led.

4. *In your opinion, did the KCDC studio address the opinions that you or others may have voiced throughout the research and design process?*

   The progress of the project has occurred as expected.

5. *Could you give an example of when the studio did or did not address these opinions?*

   When case studies were chosen from Europe, Canada, and West Coast cities, there was confusion. There a substantial differences between the Midwest and those places that would not make them a good case study culturally and behaviorally. The West Coast has many more mandates than we do in the Midwest. Later though, more comparable cities, such as in Texas, were selected to learn from, which made more sense.

6. *Do you believe the research or final designs will help future progress of Kansas City? If so, could you give an example for how they might be helpful?*

   It would be helpful to understand a new model that could also help other cities in the Midwest and the four-state region that I represent in the EPA. There is a national team that shares feasible models as well. In this area, we are probably not going to get any mandates that have worked for other cites. But to be able to demonstrate that it can be done on a voluntary type basis could be powerful. That sends a message that there is something else people value, besides the punitive aspects. There are other benefits economically, socially, environmentally, that are driving people to put things in the right bins. The government is not about to mandate recycling at any level in this area any time soon. The hope is that business and the market will drive the efforts to increase recycling. Once people see the money they can save and the benefits of re-using materials in a business, they may recycle more. If people see the value of the materials, when the demand for them is high, when reusing local materials outweighs transportation costs to buy materials produced far away, and when the quality and quantity of recyclable materials

increases, then there is a greater opportunity. If the behavior change gets going, then the contamination rates will go down. All of these aspects are key to making recycling work. It was somewhat clear that the students understood that, but perhaps not all understood.

7. *Do you believe it was necessary for the students to work within the clearly defined scope of research and design first outlined in the grant funding application to the Mid America Regional Council Solid Waste Management District?*

   It is necessary to follow the grant outline because if someone is paying money for work to be done, then the expectation is there to do that task.

8. *Under what conditions do you believe it may have been helpful for the studio to stray from the grant description of the project?*

   If the project steered in other directions, it was because the advisory committee and even the members of the grant funding organization helped to guide the research focus in those directions. In that case, it is fine.

9. *Do you have any further opinions about the work or process of work done by the students with the advisory committee?*

   If there was a way for the studio to spend more time with the advisory committee, it could have been helpful. However, for many advisory members, there is not always the time to meet, and often there were members that could not show up. There may have been too much of a jump to go straight to recycling. There could be more ideas about how to reduce materials at the source. This conversation about recycling will be ongoing for a while. If the city takes one step at a time. Emphasize the benefits to individuals, whether it is economically or socially. A business-owner wants a clean streetscape because it will attract more business. A person that makes a business around the convention center will want to provide recycling for visitors who are used to those services.

Interview 1.2

- Tom Jacobs, Environmental Program Director, MARC
- Lisa McDaniel, Solid Waste Program Manager, MARC
- Nadja Karpilow, Environmental Planner, MARC

This interview was held at the interviewees' office downtown on February 11, 2016. It lasted thirty minutes and was a joint interview because all three people represented the same entity, MARC.

1. *What is your role as a member of the Kansas City Design Center's advisory committee?*

   To provide guidance from a perspective of having many years of experience with solid waste and recycling. To give guidance of where project should go and to assess progress. Helped originate the idea and helped develop the grant proposal with the KCDC. Interested in civic dialogue and how KCDC positions itself within the civic community to advance environmental concerns.

2. *How would you briefly describe the project to someone who doesn't yet know about it?*

   The project is being conducted by a group of talented people that can boost recycling downtown through creative waste management strategies and design. A group of students who are evaluating the downtown recycling system and looking at it with fresh, unbiased eyes. They are coming up with unique, innovative solutions.

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   There has been a good level of communication. There was more communication in the beginning of the research phase, but it's nice to see that the students have taken what ideas were provided and run with it. Like the opportunity to meet and give reviews, as that has not always been an opportunity in previous grant projects [with other organizations]. The student group has been very responsive to the guidance given.

4. *In your opinion, did the KCDC studio address the opinions that you or others may have voiced throughout the research and design process?*

   In some instances yes, and in some instances not sure. Reviews have not always revisited previous work, so there is uncertainty in whether the mistakes were corrected as the studio moved forward. Would appreciate the chance to review a written report of the project early on to verify the original research mistakes were corrected.

5. *Could you give an example of when the studio did or did not address these opinions?*

   A comparison of benchmark percentages on recycling rates in other cities was once researched, but comments were made about the need to compare apples to apples. There was once a studio suggestion early on to raise the landfill tipping fee, but this was also an incorrect assumption to think the city could do that to increase recycling. We are relying on the studio to make sure those corrections are made, and the final documents will tell whether or not that was done.

6. *Do you believe the research or final designs will help future progress of Kansas City? If so, could you give an example for how they might be helpful?*

   There are a lot of needs of the city, and multi-family

recycling is especially not being addressed. The project will generate viable solutions that may move the needle on that. There is not a lot out there in the literature on recycling and urban design. The idea of making it transparent and integral is exciting. In some places in the world you see recycling, and in some places you don't. There is the opportunity to generate a new model that people look towards. This new model is based on collaboration and looking at it from a different perspective. Most cities currently address recycling through ordinances to say you will provide it. While the project may recommend this, you also have the idea of grouping of buildings together to see what makes sense from that perspective. Although calling them "clusters" is planners' speak. That idea is something which no one has explored, and even if nothing happens in the short term, it may generate some conversations. Really hoping that Kansas City will take some leadership to move the needle. If Kansas City doesn't take the lead, perhaps another city in the four-state EPA area will. Transferability is valued in projects. For example, funding in one project locally could be tailored and spur something else in the Midwest.

7. *Do you believe it was necessary for the students to work within the clearly defined scope of research and design first outlined in the grant funding application to the Mid America Regional Council Solid Waste Management Division?*

   It is important to follow the grant outline because grant selection processes are competitive. When we commit funding, we commit it based on what was said that would be done. As things progress, there is room for course correction along the way.
   The grant was framed to give flexibility on purpose. The deliverable was not so specific to suggest a drop-off or recycling center, but instead alternatives would be evaluated. This was more of a research project, so the measurable was that the studio would produce a final document and meetings would be held along the way. Projects have to be bound somewhere but in the spirit of holistic thinking, it is good to have the opportunity to connect the dots and the studio was framed it that way from the outset, as a student research project.

8. *Under what conditions do you believe it may have been helpful for the studio to stray from the grant description of the project?*

   It was supposed to be have a downtown recycling focus, but based on your research, you had an *ah-ha* moment, where you realized how much of the city's trash is organic. So for us, compost fit within our understanding of waste diversion. Exploring policy ideas was acceptable too because policy and waste diversion goes hand-in-hand. If one discusses a policy you have to explain it in a context. Minimal design ideas go with a policy design. You cannot get away from policy. Any policy will have to work in a design world. You cannot just say that people should have a dumpster, and then in the real world, there may not be room for a dumpster. We did not go into the process with any expectations because there is no fast model for how to make recycling downtown work.

9. *Do you have any further opinions about the work or process of work done by the students with the advisory committee?*

   Expected to see something that would give KC a takeaway to give to their planners for zoning and design guidelines. When plans are submitted for a site permit, there is a checklist of things to consider and elements to include, such as storm water management techniques, but there could be a recycling checklist when building.

Interview 1.3

Lydia Gibson, Independent Waste Management Consultant
An interview was held on February 18, 2016 at the KCDC studio and lasted 45 minutes.

1. *What is your role as a member of the Kansas City Design Center's advisory committee?*

   Using my experience in the past three years in Kansas City working with large waste projects. Introducing zero waste and composting projects.

2. *How would you briefly describe the project to someone who doesn't yet know about it?*

   You are looking at the downtown loop and the waste generations and the techniques you can use for visible infrastructure techniques and engagement techniques in terms of looking at its waste structure.

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   The presentation and feedback format. Reviewing the work done and asking for responses on things that may not jive with reality or to point out things that unless you've been in the field, you may not think about. it's a call and response. For example, our conversation about 5% organic matter additive to soil turned into a deeper conversation about how to use organics in soil. That was a clear area where everyone in the committee meeting was learning about soil. You can go up pretty high from 5% compost mix into soil. Composting council has a slogan, "Strive for Five," which is a minimum percentage. The percentage of compost mix depends on each soil and the purpose for each.

4. *In your opinion, did the KCDC studio address the opinions that you or others may have voiced throughout the research and design process?*

   Yes.

5. *Could you give an example of when the studio did or did not address these opinions?*

   There are many examples, such as when we discussed the difference between composting and recycling as far as the containers for each. Organic dumpsters have to have a seal on them. We also talked about compactors and how that can affect the volumes of collection. That is all the technical information that unless you work with the companies and the dumpsters for a few years, you don't necessarily know about. Some of it is not a huge deal, but it does point out and clarify in some ways how in the MARC Solid Waste Management District grant the focus is really on recycling, which misses the food waste portion. This comes back to the vision of keeping waste out of the landfill. It has different looks, depending on what different categories you look at. Defining composting within recycling gets into the semantics. When you say "food waste recycling," it sounds like dumpster diving. Sometimes the semantics don't overlap. Composting is about recycling the nutrients, rather than the recycling process. It needs to be distinguished because it is so often not included in the conversation. For example, it was not implied that composting was included in the grant. My initial reaction when reading the grant, was "where is the compost?!" Especially in the disciplines of landscape architecture and architecture, there are some sweet connections that you can make between using that waste and

water retention and detention and overall stormwater management. What kind of better connection would you want that creates that full loop and understanding that brings you back around to something that seems like it may not have anything to do with what you've been studying. But the pieces then come back around to create a system. That will answer what my goals are for this project: to really bring composting into the conversation and make that connection. For street trees. You can look out the window and see an unhappy soil tree. One of our hurdles in this sector is awareness by public figures. When Lisa McDaniel talks about that and having our cares represented to a public figure that we wish we could reach with our message, that is when we talk about making a really big difference. It is one thing for me to come in and tell people to compost, but when the class comes down to three main categories it is really rewarding. That's two-thirds of what I've been doing the last couple years of my life between the special events and the organics. It is a clear reinforcement that those are two really big things. It gives me confidence when a group of talented individuals discovers the same thing that I have. I might have nudged you in different directions, but I don't think I gave a full on shove in that direction. Somebody that wants to individually go deeper into the topic of stormwater research does change the conversation. Although it might seem small, it is a big barrier of awareness and education. This conversation might ideally start a new line of employment, where people begin to care about this issue and want to take things to the next level. That is where I am trying to lay a foundation for a new industry. As an undergraduate student, I wish I had put a hard and fast value to the waste audit service I offered to a private company. To show the value of this work is important. It is an interesting dynamic where people are currently attempting to start businesses and provide services for potential clients that did not get free services from Bridging the Gap. Bridging the Gap is providing waste consulting services to about 5 businesses each year, including Cisco, a billion dollar company in town. If you've got something out there for free, why would you pay for it? There is also no regulation for these large companies to recycle. However, being a very millennial corporation, they would want the reputation that recycling gives them. Burns and McDonnell and Hallmark take advantage of that idea. We are still trying to build that piece of value for large companies. As you heard in our last meeting, the EPA sees this as a paradigm shift. There is a difference in perspectives between some people that represents the EPA, who makes the financial case behind things under the current status quo. My perspective is that the values we are currently focusing on don't have a tangible monetary value in a lot of cases. You can try to assign value to environmental quality, but it is complex. However when you are trying to get the dollars and cents to work out in a system that is not designed to put all the costs in, you will never come out on top. You are fighting a losing battle. When I work with a problem, I come from a position that we are experiencing an abrupt climate change. This issue is important for a different set of reasons that are not economic. This is how we change our climate to survive. Think about stormwater and what it has seen over the last few years and knowing that we have tools to mitigate them and they are so low-tech and simple, yet some people aren't using them. It's a mindset about what's important and what functions do things like soil provide. That's the shift that I want to advocate for, the quality of community life. The financial stuff does have to align for businesses, and recycling will save money in some ways. The deeper motivations where the programs have been successful, such as at Boulevard, the attitudes are matching the paradigm.

Those are big picture observations. What you hear from the committee are different perspectives. MARC, for example, is funded from the Missouri side, and the perspective leans more toward where the state of Missouri is. Kansas does not have any money to provide programs like this. They don't do the grant things. The studio has come to a good balance with the different directions and feedback, given the many perspectives of the advisory committee. I often see recycling campaigns as stuck in the 80's. Compost is what's new and hip. It's tough because of the disciplinary background. Some of the critiques have been about the language and talking about the process. What are the nodes and links? There is an inherent bias toward what the physical does in the city, and we will see how it forms out in the studio. We connect with what we know about the physical environment with the behaviors, and pull from behavioral psychology in to inform what you do with the physical. I have long been a proponent of the change that physical infrastructure can make in behaviors, such as visual cues on recycling containers. All the research I've looked at, that has always been the clearest message. As you talk about getting deeper into more complex engagement things, you've got to be conscience about how people relate to their trash and interact with it. The research in behavioral research is totally key. A lot of things are totally opposite of what you would think. For example, decreasing trash cans decreases litter on New York subways. If you hadn't researched that, you would have never known. Connect the design with the research otherwise you'll have mismatched results. Connect the human element with the physical design.

6. *Do you believe the research or final designs will help future progress of Kansas City? If so, could you give an example for how they might be helpful?*

   Anytime you vision forward, you push the needle forward and you expand the concept.

7. *Do you believe it was necessary for the students to work within the clearly defined scope of research and design first outlined in the grant funding application to the Mid America Regional Council Solid Waste Management Division?*

   When you get grant money, you have to play by the game. To me, it did not hamper your work. The grant did not mention composting directly, but it gets back to how you want to define recycling.

8. *Under what conditions do you believe it may have been helpful for the studio to stray from the grant description of the project?*

   If you want to define composting separately, then yes, composting should have been in the grant. That discussion about putting the waste of the community back into the hard infrastructure, and making sure the local street trees don't die. That's what I've keyed into, which the grant may not have given you enough initial leeway in the way you were thinking that may have a stronger disciplinary connection than just designing a physical recycling space.

9. *Do you have any further opinions about the work or process of work done by the students with the advisory committee?*

   There were parts of the process and graphics that I questioned the methodology and the time spent to come to some conclusions. Not having legends also

crosses a line for the blue collar work I am in. Waste is blue collar. I can roll with the links and nodes as well, because I had planning classes where we did those exercises in school. I understand you making connections and looking and the density of those connections in town, but some of those things might be mismatched with the topic. It's like putting lipstick on a pig. We are still talking about trash. The studio's language and presentation of the methodology can create an exclusionary barrier to thinking about the outcome. Lay people are more interested in the "so what" and the results. If you get focused on a discussion of process, even if it shows different points of engagement from your perspective, others might not feel like it makes sense and they might not feel qualified to join in the discussion and engage. When talking to professionals in the blue collar waste industry, it can create a potential barrier. When talking to a broader audience, focus less on the process and more on translating things as simply as possible. You've got your studio and reviews back in the academic space, where the sky is the limit. Use your heavy-hitting language and talk about big picture ideas. But when out in front of a different audience, you will have to throw that through a filter for the people who live in firm reality of day-to-day. Hone down the "so what" and what does that mean. For example, a link is how someone might walk to work and what they might see. What they see matters because it influences how they behave. The translation breaks down those ideas that are embedded in your higher level terminology. Think about unpacking the denser ideas into parts. Think about a node and how you reached the idea of a node. What other metaphorical examples make sense and how did we get to that terminology? Use that way of how you got there to explain the idea. Is it really about metaphorical examples and do people need to see the design to understand it? Yes. Some of these communication problems come easily from how the maps are presented to the audience, whether they have legends and if north is directed up. The academic thinking has to be turned down when talking to a larger audience. You could spend thousands and millions of dollars trying to create civic engagement opportunities for a community, the same way that a banana peel could on its own. You spend a lot of money on a fancy park, but you may find that an abandoned lot in an older neighborhood has way more engagement because of the type of activity that composting and urban gardening can provide. People can get way more out of the activity, such as food and sense of community, than you could ever get out of a million dollar park structure.

Interview 1.4

Kristin Riott, Executive Director of Bridging the Gap
An interview was held on February 26, 2016 at the KCDC studio and lasted 25 minutes.

Bridging the Gap is an environmental non-profit based in Kansas City. I'm responsible for everything that happens at the non-profit, including the funding, the financial, legal, and completion of mission. I supervise the hiring and management of the personnel. The mission of Bridging the Gap is connecting environment, economy, and community. We work with about 1,500 volunteers every year to physically improve our environment and to educate people about our environment. We are one of the more broad based non-profits in this area in terms of our program array. We have a recycling program, tree planting program, prairie restoration program, green business network for sustainability, a monarch butterfly program, water conservation programs, and general education programs.

1. *What is your role as a member of the Kansas City Design Center's advisory committee?*

   With this topic that the KCDC took on this year with solid waste, Bridging the Gap has the longest history with this topic of solid waste in the community, since we have been working with it since 1992. The invitation to join the committee was a nod to getting the community engaged with recycling. I assume that Bridging the Gap was asked to join the advisory committee because of our historical aspect, our expertise, and also our involvement with citizen engagement with recycling.

2. *How would you briefly describe the project to someone who doesn't yet know about it?*

   The project has involved exploring how we can increase recycling rates in downtown Kansas City in part, because it is recognizing that there is demand for it downtown and that the resources to recycle downtown are fairly limited, even though the population growth there is strong.

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   Usually it is a presentation by several students in the form of a power point and sometimes there is a model on display, which shows they have been thinking of issues downtown, and in this case it is recycling. Usually there is a panel of people who ask question and give feedback based on their expertise with the topic.

4. *In your opinion, did the KCDC studio address the opinions that you or others may have voiced throughout the research and design process?*

   The linkage between the feedback given the next presentation could be tighter. So for example, one of my recalls from one of the earlier sessions was that there is a strong opportunity for composting in downtown Kansas City. I didn't see that necessarily reflected in the next presentation. Perhaps it was used, but I didn't hear the students recapping what happened last time and then addressing what happened last time. I think it would be helpful to recap and then tell the panel how their remarks from the previous session changed what happened afterwards.

5. *Could you give an example of when the studio did or did not address these opinions?*

I'm sorry to say that the times that elapsed between the sessions is why I really can't remember what happened at the first session that then did or didn't get addressed, other than the issue of composting. This is why we need a refresher. I remember that there was input from the panel, including Lisa McDaniel and Marlene Leonce and others, who felt like some of the figures were not valid that were being used. I deal with so many issues between now and then that it is difficult for me to dredge that up. It's not that there wasn't enough meetings with the advisory council, it's just that there is a real need to recap what happened last time. I think there is a tendency everywhere, and not just with the students here, to not remember that there are people in the room who either weren't there last time or who may have come in late. All of us in modern life are dealing with a gushing flow of information on a daily basis from all corners, and I think it's really helpful to reorient people at the beginning of a talk like that.

I don't think I saw any minutes being sent out, but even then you would still need to recap at the meeting. At Bridging the Gap, we know that when we sent out meeting minutes before hand, they hadn't read it. You have to assume that people haven't read it and you still need to recap the meeting. You can do it quite quickly and crisply, but you've got to do it.

6. *Do you believe the research or final designs will help future progress of Kansas City? If so, could you give an example for how they might be helpful?*

What I would find most helpful is the geographical locals that the students identified where there were particular types of recycling needs. Given the subject at hand, which is how to recycle, I think it would be very helpful to let the city council know where the ripest fruit is in downtown Kansas City is for recycling. I also think it would be important to provide some rough cost estimates because that is what they would be interested in. I would want to make sure that there are not only city council people in the room but that the relevant city department heads are in the room. In the realm of recycling, that is going to be Micheal Shaw and Marlene Leonce from Solid Waste. I think they would be quite interested in the research that shows where the recyclables are, what kind of recyclables there are, and what the students strategic thinking has been about how to tackle it. I think mapping the commodities would be extremely valuable as well as any work you have done about addressing the costs for pick-up and the methods of pick-up.

7. *Do you believe it was necessary for the students to work within the clearly defined scope of research and design first outlined in the grant funding application to the Mid America Regional Council Solid Waste Management Division?*

Because we fulfill grants here everyday, I know it is extremely important for the credibility of the KCDC to fulfill your grant to the letter of the law in every detail necessary. It is important to show that you do and intend to do every detail in the original grant. If there is any change in the original grant, it needs to be cleared with the grantor and it needs to be clear in the final report why you changed it, that you got permission to change it, and show what you did in that changed condition. The fulfillment of the grant in detailed fashion, in a timely manner, preferably ahead of the due dates is a very important part of the ongoing credibility of your organization.

8. *Under what conditions do you believe it may have been helpful for the studio to stray from the grant description of the project?*

   We always try to exceed the requirements of a grant. In fact, you will make your grantor happy if you are not only able to set out in the original scope of the grant, but that you go beyond that. They will be delighted with you.

9. *Do you have any further opinions about the work or process of work done by the students with the advisory committee?*

   I think there has been some very good work done. I think the stumbling block in the last meeting was the use of the various concepts which were less than fully understood by the panel to explain the different kinds of recycling situation that you wanted to show them. In any meeting in working all around Kansas City, there's always a challenge with dealing with high level abstractions, you need to punctuate what you are talking about with some concrete examples. I think we went through that whole presentation and we weren't able to do your work justice because we didn't fully understand what those abstract concepts were. That doesn't mean that there hasn't been good work done, and I think there has been. Another thing that I would suggest, and I think that what we are talking about here is just training in public speaking. I think the students generally do an admirable job in a fairly intimidating situation with experts in the field there sitting around the table with professors and peers. It is an intimidating situation to begin with. There is a fair amount of details to cover, where you are going from abstract thinking down to concrete information about the city. Trying to balance those things and be comfortable, I can see it being valuable to take all the students through a tutorial for public speaking. Part of what is important in that is orienting the audience to the subject and reminding people of where we are, what we are doing, and why are talking about it. Using vivid examples to illustrate your points, such as case studies and storytelling, really helps to keep your audience with you. Because most of you are coming to this without a background in public speaking, it's a great chance to develop those skills as well as developing the skills that are germane the field. I have been working for a long time giving and listening to presentations around the community, so it's a subject I do think a lot about. I do think the students do very well, but I think it would be possible to strengthen the entire program by taking it up to the next level with public speaking in the community. That includes things like having eye contact and speaking with a forceful voice when presenting. All those things can be dealt with. Getting comfortable in front of an audience can be dealt with, such as using an ice breaker. There are lots of techniques, but I do think that is something that would be great for KCDC.

Interview 1.5

Marleen Leonce, Senior Environmental Officer, City of Kansas City, Missouri

An interview was held on March 7, 2016 at the Kansas City Public Works Department and lasted 25 minutes.

1. *What is your role as a member of the Kansas City Design Center's advisory committee?*

   I feel my role was to provide feedback on the research and final document created by the students.

2. *How would you briefly describe the project to someone who doesn't yet know about it?*

   KCDC received the grant from the MARC to conduct the study of recycling in the downtown loop. The study involved looking at the current infrastructure and the existing city's waste and recycling collection downtown, what exists in comparable cities, and try to come up with a solution and a type of program that would work for the downtown loop.

   I serve a double role on the advisory committee. I also sit on the MARC Solid Waste Grant Creation Committee. I was excited about the project because the downtown loop is predominantly a business community with apartment units. As far as single family units, it's all multi-family units, and I know the city does not provide recycling for the downtown loop. I also know the challenge of retrofitting existing structures with a recycling program, so I was interested to see what if there was any recycling happening in a vacuum and how does that look? What creative ways the students would come up with and see what a recycling program would look like for that area. This is not an area the city addresses as a whole so I was interested to see what solutions you all would have. Who would take on the leadership and provide that as a service?

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   The process was very informative in that the students did the research and collectively they came back and presented the research to the advisory committee. It gave the advisory committee the chance to see the benefit of the research and provide feedback as a group. Individually we may have said something, but as a group we were all able to give feedback together so the format worked well for me.

4. *In your opinion, did the KCDC studio address the opinions that you or others may have voiced throughout the research and design process?*

   I think for the most part they did. Recycling in Kansas City is a little challenging in that the city's solid waste services are paid for by the earnings tax. It is difficult to find a comparable city because most city's solid waste services are paid for directly by the residents or through their utility bills or other format, so it is difficult to find a city where you can compare apples to apples with the same payment the same size, the same everything. It's difficult to find that structure because I think there might be only one other city with that same format. So it was interesting to see what other cities the students used as an example and compare it to Kansas City and think about how we should do it.

5. *Could you give an example of when the studio did or did not*

address these opinions?

The cities that the students chose were not comparable to Kansas City, but they did provide a reference as to how recycling should be. So even though they were not comparable, they provided an insight as to what works and what doesn't. I don't think there is any right city when it comes to choosing a city. I think what you all did was adequate in that you gave us a group of varied cities. So in my opinion, there is no way you can compare apples to apples, but if you look at the type of services, how it's been offered, and who's collecting it, and track the data, and who is tracking the data, that's how you can find best practices. By looking at what people do. It does not have to be the same as what you do and the conditions do not have to be the same. You can learn from what they do. I embraced whatever city the students chose because it will never be apples to apples. When it comes to solid waste services, the difference in the level and the quality of services boils down to the budget. How is revenue generated, if any? Even the location also, what infrastructure is in place. The City of Kansas City does not own a landfill, transfer station, or material recovery facility. However because we provide services to our residents, which is about 148,000 households, that puts us at an advantage when we put out an RFP, we can almost put out a guarantee with the contract that says, "Hey we will give you the work, so based on that we want a lower price. We can assure you that you have 96-100,000 houses where you can collect that." Most cities have several contractors doing the same thing, so one contractor may have at most 20,000 residents, compared to Kansas City where we have 100,000. Because of our volume, our prices can remain competitive when we put out requests for proposals.

6. *Do you believe the research or final designs will help future progress of Kansas City? If so, could you give an example for how they might be helpful?*

   It will be helpful if the city ever implements a mandatory recycling policy. Whoever wants to tackle the downtown area will have research to use. Of course they will have to update it, but they will not have to conduct research from scratch. The students did an excellent job identifying the infrastructure and the challenges. I think that is valuable information to anyone trying to implement any type of system downtown. Even the challenges, not just a baseline, but also some of the challenges they will face. You have multi-family houses with small alleys that you cannot serve because that's just not feasible. You can't have collection in the outside parking space because it's limited, so you have some challenges to implement the program. so basically, you would have almost a door to door, customer to customer service, which is very labor intensive. It happens in cities all the time, but it's labor intensive. The only thing that would work would be to have many and not just have one person doing the downtown loop because then they would create a monopoly and the prices would be high. It's going to be labor intensive because first you have to convince everybody to recycle, then to follow the recycling rules you set in place. That alone will be a challenge. Then you have to work almost with the cleaning crew who comes nightly because you cannot interrupt the business hours to come in and recycle. Logistics will be a little challenging.

7. *Do you believe it was necessary for the students to work within the clearly defined scope of research and design first outlined in the grant funding application to the Mid America Regional Council Solid Waste Management Division?*

I don't remember the scope. All I remember is that it was the downtown loop. I don't remember if there was specific outcomes the council was looking for. It was absolutely necessary though to go in other directions of research when needed, however. Because the downtown loop is so diverse, you have schools, apartments, and businesses. The businesses vary. The Sprint Arena can hold about 7,000 people. Bartle Hall can easily have a population in one day. Not only are the businesses diverse, your population varies every day, sometimes every hour. For example, March is Big XII. You have people walking up the streets going to see basketball. There is no constant to say this is an office building to say an x amount of people are coming here everyday and I can prepare for them. The downtown variable change sometimes every hour. It's difficult when you have such a moving target, that your target is so fluid, it's hard to come up with anything for them short of a policy. Your policy is your constant, saying that you have to recycle. Now once you say that you're going to recycle, then you have to say what you want to recycle. You all did the waste study to see what is there. Then you say if all restaurants recycle because 40% of what is there is restaurants, then you have to say what do they produce most- glass and food. So you have to collect glass from them and have some kind of composting program for them. You have to know what you generate and how much then you can implement a program based on the commodities. Composting has to be dealt with. Glass has to be dealt with. All the different commodities have to be dealt with separately or collectively. You know paper is the easiest one because everybody can have a bin at their desk and at the end of the day you put it in a bigger bin, and you move on. Once you start separating everything else, it becomes a little more challenging. Of course because it's a commercial sector, food is your most challenging part. You cannot have food in a bin overnight because of the smell and the leachate when the food decomposes. You also have health restrictions that restrict the type of program you're going to have in a commercial sector. The students did well to consider these things, and you cannot implement a program without looking at all the things you generate. The students did it the right way. That's the way it needs to be done. In my mind, a recycling study you have to consider all the components. You have to know what are we recycling. If all we generate is food, it doesn't make sense for you to recycle plastic and aluminum because you do not have plastic and aluminum. Or perhaps the quantities are so small that it does not even make a difference.

8. *Under what conditions do you believe it may have been helpful for the studio to stray from the grant description of the project?*

   Doing more than the grant asked was the correct thing to do. A study should not just be about recycling. A study is to examine what your products are and how you would incorporate recycling with diversion of the others. Recycling is one type of diversion. Composting is one also. It's knowing what you have and how to divert it appropriately.

9. *Do you have any further opinions about the work or process of work done by the students with the advisory committee?*

   It was a good process. I was happy with the entire process. I'm not sure what the recommendation was. It's like we just did the study and the recommendations are a little fuzzy in my mind. I think the entire process was a good process and a good project to go through

and see what exists and, if needed, can it be improved. The good thing about your committee was that it was diverse. It had someone from the EPA, Bridging the Gap, MARC, and the city. Of the diverse group, the only person who had direct involvement with the collection of waste in Kansas City was the City of Kansas City, Missouri. My perspective would be different from them because I am directly involved with the waste management processes in the city as a whole. Even though the city is not involved with the collection of waste from the commercial sector, we are still aware of what is going on because it's in the city. We know who is collecting, who the waste haulers are, and what has been collected if any. Believe it or not when something goes wrong and someone dumps something on the curb, the first person they call is the city. Even though it is not our responsibility to get rid of it, we have to then find out who put it there and get someone to remove it. We are intimately involved with the collection, process, and illegal dumping. My perspective will be different from some of the other advisory committee members. Like the EPA does not collect. They are only enforcement and policies. My perspective would be completely different even from those at MARC. Because MARC is a quasi-government, they have no authority over policies. I'm the only one who can implement a policy saying that you have to implement recycling in Kansas City. None of the other entities can do that. My perspective will always be different because I have to deal with the political backlash of that that would create. Especially since trash is tied to the earnings tax. A few years ago, the earning tax became something that's renewable every five years, so we are always conscience of the earning tax. The city gets sued all the time for trash services. When it comes to policy, we are exceptionally diligent to being sensitive to implementing policies and what policies we implement. There is always backlash. Always. We are the ones that deal with the lawsuits. I don't take it personally. I try to remember that it's just a job.

APPENDIX 2: STUDENT INTERVIEWS

Interview 2.1

Amanda Santoro, Landscape Architecture Graduate Student, Kansas State University, KCDC
This interview was held at the KCDC studio on February 16, 2016. It lasted 10 minutes and provided a student perspective to compare to that of the advisory committee.

1. *What role do you see the advisory council playing in our studio recycling/composting project, this semester and the last?*

   The advisory committee has given us more resources to look into and led us to think about aspects that we haven't typically thought of. They are a resource for us because we do not typically deal with recycling in any architectural design aspect. It has primarily been a resource and knowledge base of expertise in these categories.

2. *How would you briefly describe the project at KCDC to someone who doesn't know about it?*

   It is a two semester long project given to us by MARC through a grant and it is looking to propose a vision plan for downtown recycling in Kansas City. The second semester is diving deeper into specific sites to see how recycling can engage the public realm. It is about encouraging the idea of recycling that is visible and not just hidden away.

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   Typically, it's been us presenting where we are in the situation so far and the reviewers usually have questions. We go back and discuss different aspects. This discussion is based process is them asking questions, us ask questions, and all of us trying to gain knowledge from each other to see where it can go and where they see it going and where we see it going.

4. *In your opinion, how important has it been for us as students to always address the opinions that were voiced from the advisory council?*

   It has been good to hear what they have to say about their perspective, but as we have gone through this semester, I do not think we always feel like we have to address their opinions. Their opinions may be deep down into the situation, while we are trying to be more innovative about the solution and not having to follow all the existing policies and existing ideas. Their opinions typically hinder that. At the same time, their opinions have pushed us in new directions to think about the project in different ways. So sometimes it has been necessary to think about what they say for our own understanding of what our proposals.

5. *Could you give an example of when the students did or did not address these opinions?*

   One of the discussions that kept coming up what the question of who was going to pay and who was going to manage the project. Although that is really important, we addressed it from a new viewpoint with our municipal scenarios approach. We wanted to create an efficient system but not be afraid to suggest that the city is paying for recycling for all residents and businesses. Their concerns in this way were somewhat hindering, but we used them as a jumping point for how to look at it from a different perspective. The next hardest step will be to make sure what we are saying will make sense

to the advisory council as well as the normal public. This is what we are starting to get at, as well as the design solutions because we are in a lot deeper than we used to be at the beginning of last semester.

Interview 2.2

Sean Tapia, Regional and Community Planning Graduate Student, University of Kansas, KCDC
An interview was held on February 21, 2016 at the KCDC studio and lasted 20 minutes.

1. *What role do you see the advisory council playing in our studio recycling/composting project, this semester and the last?*

   Last semester they were really helpful in setting our focus. For us, in dealing with something that isn't strictly design based, we are looking for direction. They provided that, and they were helpful in narrowing down objectives in the beginning. This semester they won't be as helpful in terms of direction as much as feedback in the things we present. It will be interesting to see how they react toward some of the ideas we hash out, now that we are working towards the design. General feedback would be good.

2. *How would you briefly describe the project at KCDC to someone who doesn't know about it?*

   We are working on the organization of the recycling and overall waste management system for Kansas City, Missouri. The flows, the collection, and how we can provide that as a service for people.

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   In the beginning, it was helpful, but at times it can be frustrating because they think through a lens with the work that they do. When we present an idea that doesn't really work with them, it's difficult to get that point across. When they talk about financial and political constraints, I understand them from a planning perspective. You have to think practically, but at the same time we have to push the bounds, otherwise we would never get anything done. Anytime we try to bring up cost estimates and policy, but those ideas get brushed off. It is difficult to present a fully functional system when there are costs and policy things that go with that that we don't talk about. It is difficult to bring those things up and have them get brushed off. We as a group figured out how we wanted to present the ideas. We heard what they said, but we also figured it out on our own, regardless of what they said. Moving forward at the end of the semester, we figured out what we were pushing for. We will be able to push for more of those things that we think is better, as opposed to some of the things that the council would prefer.

4. *In your opinion, how important has it been for us as students to always address the opinions that were voiced from the advisory council?*

   We addressed their opinions half the time. As much as I appreciate their input and I am glad that we have a council, this is a project that we are putting together and we all have our own expertise. Some of the ideas that they wanted to push on to us seemed minuscule or unnecessary. If we are going to take full ownership of this, then we don't have to do everything they say. I would prefer not to. I do think that we need to have a council, but to address everything they say every time hinders us and what we want to do for the project and actually getting things done. It would have set us back and added extra work that may not have been necessary. The composting aspect is one example of when they pushed an idea on us that went really well, and we were glad for it. Lydia suggested looking more

into composting and it ended up working really well for us. We found that it does make up a large portion of the waste stream and it is something that not many cities address. If we do even a small amount, it will reduce a large amount that is going to the landfills. I am glad that we looked into that more because it pushes our project forward in a way that it wouldn't have in the first place. As far as concepts that the advisory council pushed on us that we didn't address, a few of the members have specific ideas about what is realistic. Their focus is more on putting a baseline of work together, basically a synthesis of what the city already does. We all thought that was a little ridiculous just to end there or to only suggest a few new routes for haulers or places for new infrastructure. We as students agreed that it would be absurd to spend a whole year just looking at what the city is already doing and just suggest some small things. When I speak to them and hear them talk about it, it doesn't sound like they really want to make changes. They want to hear what's happening and maybe in ten years, pick it back up and see what the city can do. We are hoping that we could suggest something that could be done now that would affect what the city is doing and change the way people in the city look at waste management, and change it for the better. With any project, you have to take ownership of it and push it forward outside the spectrum of what you are told to look at, such as the grant parameters. I don't think you could even look at the parameters of the grant without looking at the other things that might affect that or coincide along with it. We did address all the requirements in the grant, but we didn't only stick with them. The entire time we were working on the parameters of the grant, we were also working on other things alongside that were helping the project grow. To an extent, like with the composting, that was way outside what they were looking at in the grant. Policy too, we wanted to look beyond the listing of what the policy states right now and suggest something that the city could do. If we hadn't done more than report on what is existing, then there wouldn't have been much to present to them later. I like to branch out and do things beyond what we should do. That helps us talk about things that other people may not have otherwise considered. It can change things and help the project move forward. For example, with the organic study, you can see where that has happened.

5. *Could you give an example of when the students did or did not address these opinions?*

As far as jargon and basic presentation, we are pretty good about it. We speak in terms that we learned ourselves, so at the beginning that was basic language. The language wasn't anything of a high intelligence level. As we moved forward we began to understand the process of recycling and the whole industry, so we gained the language that is used and the methodology that is taken throughout that. We still managed to make it pretty understandable throughout. One thing we could do with some of the maps we have put together, I wouldn't say change them, but simplify them, such as the vision plan map. There are certain parts of that diagram, where I can see the general public getting lost. If there is a way we can break down some things more simply in basic language. This is something the public is not as educated about, as we are now. Presenting it in a simpler fashion would be good. A way to do that is to hold "planners round tables," where a group of people unrelated to the project are guided through a conversation and are allowed to ask questions about the topic, to gauge how thoroughly they understand the topic presented. This is how planners find out if what they want to discuss is actually being comprehended.

Interview 2.3

Joel Savage, Architecture Graduate Student, Kansas State University, KCDC
An interview was held on March 1, 2016 at the KCDC studio and lasted 10 minutes.

1. *What role do you see the advisory council playing in our studio recycling/composting project, this semester and the last?*

   They provide the professional perspective on our project. Whereas our main objective is the urban design aspect, they have a different approach based on their profession. They bring a more business realistic view to the project. It is our job to combine both.

2. *How would you briefly describe the project at KCDC to someone who doesn't know about it?*

   We have identified three strategies for improving recycling in downtown Kansas City. Links capture waste from the moving public and educate them about it. Then you have clusters for the business side of it, where it's dealing with efficiencies. Then there are nodes, which are attracting the public to these destination points, where something is happening to be around. Through all three of those strategies, it's increasing interest, participation, and diversion rates.

3. *How would you briefly describe the process of reviews and feedback exchanged between the advisory committee and the students?*

   We go through the project and present it, but it's more dialogue and conversational. Sometimes we don't get through all of it first before the conversation happens, just because we have a lot to talk about and that's good. It's just conversational.

4. *In your opinion, how important has it been for us as students to always address the opinions that were voiced from the advisory council?*

   It's always very important because otherwise there wouldn't be a reason for us to have an advisory council. It's also our job to sift out what is important for our vision too. I think there is a point where we just think differently than them. That is probably because we don't have the experience that they do, and they have a different impression of the world. Sometimes in that situation then, we think outside the box more and some of those views don't line up with what the professionals think. Just one example would be when we kept talking about the best examples or best practices. They found it hard to compare Kansas City to some of the better examples about recycling. Whereas, yeah, you can't compare them apples to apples, but they do have progressive ideas that are working in some ways. We can take those ideas and think about them for Kansas City.

   There was another example when Kristin from Bridging the Gap and Lisa were talking about if we should focus more on the costs of the project or focus more on the efficiencies that we can create. That was just two opposing views within the council feedback. Kristin was posing the question if we should go more into the costs of trucks, maintenance, and that kind of stuff. Perhaps it was between her and Marleen, I'm not sure, but there were two opposing views. I don't think we ever actually addressed the financial part of this project, other than the cost per bag versus the recycling and garbage.

5. *Could you give an example of when the students did or did*

not address these opinions?

There was a time when we trying to think about how the city could run the entire recycling, and… I forget who brought it up, but it was the idea of the cluster at that point. He suggested if we could get many businesses in an area to go behind the process and do it themselves then we could get more efficiencies that way, rather than having the responsibility on the city. We went with that idea and came out with the clusters. I think I may have been Tom from MARC, who suggested that. I know he had a conversation with another student about it as well.

APPENDIX 3:
ADVISORY COMMITTEE MEETING NOTES

Meeting Notes 3.1

The first advisory committee meeting was held on September 9th, 2015 at the KCDC.

Financial Concerns

- Recycling is voluntary within Kansas City policy, but policy is the biggest challenge. There may be a need to change the policy to mandate recycling. Often the culture must be changed to enact a policy change.
- KC residents don't pay directly for trash services. It is paid through earning tax of 1%, which is about $9 per person (trash is $5.68 and recycling is $2.68 per household). It costs about $20-$26 per ton to dispose waste at a landfill. The trash and recycling curbside services are provided for single family housing units of up to 6 units or less. An apartment rebate allows apartment owners to receive funding to provide such services as well. The rebate requires monthly proof that tenants are living in the each unit receiving services.
- Cost concerns can easily become a huge limitation to increase recycling efforts.
- There are often limited haulers due to city contracts for residential services. For example, Town and Country is city-contracted.
- No city-paid services are provided to commercial or large apartments.
- Today, Kansas City is at 27% recycling diversion rate, and there has been a reduction in trash of 21% since the recycling policy enactment in 2004.
- Economics will cross all boundaries. KC, Sugarcreek, and Platte City are unique because they are contracted with the cities. Prairie Village does have residential collection within one Home Owners Association (10 household study for Normandy Village).

Education and Awareness About Recycling

- Education and enforcement are needed sides to the recycling triangle Downtown

Accessibility Concerns

- Without a car, there is a challenge to access recycling drop-offs. How can it become more accessible?
- Make visible spaces that show people how recycling can be done, and this may change perceptions.
- Access is a key issue to address.

Case Study Examples

- Be sure to understand what goes into other cities' diversion rates. What is being counted?
- Look at cities of similar size and service costs, rather than international cities or even cities in on the coasts because they have different cultures and market demands. Provide an explanation for why Kansas City's recycling should function as it should for its context in the Midwest. For example, waste-to-energy facilities are not appropriate in the Midwest.
- Terrecycle is an example of a company that makes an undervalued material valuable.
- Look at the Roster's Block for a great example of best practice for good construction waste management.
- The Environmental Protection Agency recommends reducing the waste at its source, recycling what has been produced, and minimizing what is going to landfill or being burned.

Infrastructure Concerns

- Kansas City's infrastructure is not designed for recycling. There are too many bins in the alleys, and there is minimal space for recycling in addition. It may be necessary to retrofit recycling into modern systems.
- Convention Hotel has a standard system with in the building. Building codes, such as these, could be pushed for future development to increase recycling accessibility inside buildings.

- Perhaps there should be uniformity of identity of bins, similar to a street scape standard.
- Design the infrastructure for potential projects. Start with fresh ideas, such as shoots and dumpsters, and think about screening and capacity recommendations.

Management Concerns

- GSA-Federal Building is federally owned but managed by a non-tenant. This division of responsibilities can create conflict where people are not sure who is responsible for waste services. There is complexity of tenants and building ownership. Who owns, who occupies it, and who is responsible?
- How do people determine permanent services for temporary tenants?
- 100-unit complex buildings is the breaking point for recycling systems within buildings. Less than this amount creates a cost issue.
- Look into the benchmarking ordinance for the city.

Next Steps for Research and Reframing the Project Proposal

- A square feet analysis could be done to calculate the waste loads in a particular area. Look into the studies done in California as well to model a methodology after. Consider different factors in this calculation however: potential for growth, vacancy rates, and latency of development.
- Encourage other temporary uses on vacant sites.
- Think about what it means to have a recycling system.
- Recognize the issues of the bi-state split, and how things are not always applicable to the entire community. Refine the study areas, consider more case studies, and look toward some of the future developments. The project needs to be able to tie into the entire community and other cities, however, just because Kansas City adopts a plan doesn't mean other areas will follow. Limit the study at the regional scale because it will likely not be useful to the end product.
- Develop a large event study, and track waste amounts.
- Make recycling a local issue, and prevent some commodities from being shipped internationally. Limit the distance that recycled materials have to travel to reduce costs and other environmental drivers.
- Think about targeting glass, paper, and organic waste. Ripple Glass is only at 10% capacity for what it could be recycling. Paper is 40% of landfill material, but often much of it contaminated. Pilot an industry that recycles a material and show that can be successful. Find out which materials can be most easily recycled.
- Incorporate construction and development waste loads in the analysis of a new development because this is currently a big issue. Push LEED building standards in construction.
- Haulers have issues with time to get in and out of the city to collect. Look at Deffenbaugh routes to consider these constraints.

Meeting Notes 3.2

The second advisory committee meeting was held on October 16, 2015 at the KCDC.

Financial Concerns

- Comments were made about a diagram explaining what the city pays versus what the residents pay.
- The tipping fee is negotiated to be lower because the city wants a lower rate because they are the ones paying for the service. Recycling is about $10 per household, all-considered.
- Ripple Glass and other potential recycling centers are moving towards creating their own hauling fee.
- The value of collected single stream materials is higher than co-mingled waste materials.
- Research funding mechanisms in other cities. Often the earning tax is used differently to pay for recycling services.
- Despite what recycling costs, all people should take responsibility for what it costs.

Management Concerns

- Material recovery facilities can audit a city. In this case, the city could document the Material Recovery Facility and transfer stations.
- There may be opportunities to first set up bids and contracts by the Downtown Council with private haulers to upgrade the hauler services and offer more services to more individuals. The contract would then by honored by the standards we suggest in our research.
- What are the statewide recycling goals versus city recycling goals?

Infrastructure Concerns

- Aesthetically pleasing bins would need to be allowed to be innovative, rather than limiting and restrictive.
- The physical environment and infrastructure for recycling will guide the culture towards recycling.

Behaviors Toward Recycling

- Research demographics to understand who recycles and to target that audience.
- Research the Montgomery County case study, in which behavioral studies proved what was best for their waste system.
- Research the recycling behavioral studies by Florence and Derek Reed, KU behavioral science professors.

Other Comments

- There may be opportunities for organic waste hauling, where there is currently a gap.
- KC Marathon expects and is planning for 10,000 pounds of waste to be produced on race day at the event.
- Be careful of how the words "mandate" and "enforcement" are used, as they may cause many people to turn away from the idea.
- What are the materials that could be recycled locally? How could another local recycling center be suggested in this project?
- What about the 16% contamination rate? The recycling center will not be profitable until the contamination rate decreases.

Meeting Notes 3.3

The third advisory committee meeting was held on February 8, 2016 at the KCDC.

Management Concerns

- Comments were made about the city's previous attempts to to implement recycling at City Market. There were problems due to the types of workers, language barriers, and the physical layout of the market. Thin profit margins for many of the businesses there push the feasibility to hire people to collect and sort waste. Even previous grant money from the city for them to hire people to do so did not work, and the grant money was returned. It came down to a collection and hauling issue. Overall it is highly a management process. Look at who manages, especially on the residential side too. Previous recycling bins were getting trash contamination from outsiders. Residents were the most willing to participate, rather than the businesses. Residents could influence the demand in this area.
- Look at businesses and commodities they produce. Build management towards recycling and into the thinking.
- Paid staff after events is often more cost-effective than recycling education at places like Arrowhead and the Sprint Center. Talking to pre-game tailgaters about how to recycle, however, was somewhat effective.
- Part of the planning process is dealing with an ever-changing environment.

Infrastructural Concerns

- There may be a need for compactors and larger capacities, where some bins currently overflow. Compactors can change capacity storage needs and change costs to pay for hauler pick-ups.
- Organic dumpsters are created differently. People cannot exchange one for the other.
- Come up with a system that adapts based on the user. This could end up being specific bins places out only on market days when more people are around.

Next Steps for Research and Reframing the Project Proposal

- Do not use a lot of planner jargon. For example, "multiplicity node" will lose many people's attention because they will not understand.
- Spell out the rules of what, how, why to recycle because there is a cloud of confusion.
- Show residents the outcomes of the work done and what's in it for them.
- Contact a home association group. Get their mind-share and get them focused on it for more than a few seconds for behavior change.
- Who is the user and what is their primary concern in the space? Create interruptions and prompts there.
- Keep going with this approach. No one has looked at it from this unique perspective before.
- At any point, an open house for the community could be helpful.
- Suggest that the designs could create more efficiency and cost-savings for the public.
- Dead space interventions in a parking lot can be used for signage and collection, but only if it is still accessible and convenient.
- Look at who the uses would be and the end collection. Connect the dots to show how people behave with thrash in hand.
- Consider what commodities you are collecting because each is an entirely different animal. Look at the commodity needs and focus them for how one could go about it.
- Continue mapping site behaviors and commodities around the site.

Behaviors Toward Recycling

- Photographs often work better than words and at eye-level. Place an example of the recyclable item on top of the container.
- Smaller slots and lids are barriers, but there are pros and cons of game-like waste bins.
- Non-uniform designs are confusing.
- People today are often using social media and aren't looking around. Think of a way to creatively catch their attention and get their mind-share so that they think about an issue.
- People's behavior is influenced by others.
- There are transient populations in the City Market that will create higher rates of contamination because they do not understand how to regularly use recycling and organic bins. No variables will influence this problem. Ultimately, there would be a need to hire more people to police the system, sort, and collect trash.

Education and Awareness about Recycling

- The key to success is education and connection with a site's specific need or commodity. This will be different for areas that are mostly residential and different for areas that are mostly visited by visitors to the area.
- Be forward-facing to educate the public. Use repetition so that people can learn the process overtime and change their behavior.
- Expose the public to the idea of composting.
- The more simple the message is to the public, the better it will be received.
- Sell economic benefits first, social benefits second, and environmental benefits last. This has been the most effective to reach people. However, with organics, it helps to hit them with the methane facts first. Also, tell them recycling brings more jobs to the region.

Other Comments

- Needed clarification of site locations, and making the maps larger to read.
- Needed more clarification on what the link, cluster, and nodes are.
- What the class is doing so far is great. 14 students is 14 wins because each person may continue to recycle better.
- The outcomes of this project could be contagious if even one hauler does better in one area.
- As a resident, there are not many public places to recycle when walking around. Depending on the weight or size of the item, one may carry the item home to recycle.
- Wanted to know why the organic node was a previous brownfield and what was the source. It was a petroleum problem according to the EPA brownfield mapper, but it has since been cleaned up. Make sure you look at all cleanups in general near the site, not just brownfields.
- This project could be a model and methodology for recycling in the Midwest.

Meeting Notes 3.4

The fourth advisory committee meeting was held on March 10, 2016 at the KCDC.

Nodes Strategy

- This makes me think of the Union Station exhibits that travel to different cities. There is a chance to really inspire people here.

Nodes Compost

- What about odor sheds? Need an odor management plan.
- There is a need for nurseries in this part of town. There is a current demand that needs to be met for trees.
- The brownfield remediation happened in 2009 and is now clear.
- In Sydney, there was an image taken of the item inserted in a bin and the image moved down like the game of Plinko.
- In glass collection bins, the noise is loud. The glass bin will also weigh a lot and the alley is restricted so the bin has to be lifted by people.
- If natives were planted nearby, perhaps it would keep bees away that would otherwise be attracted to the food residue in the recyclables.
- This is fun and engaging. I makes me think of bowling, ski ball, or bocce ball.

Functionality node

- I like the idea of a MRF in the City Market.
- When the bin is full, they empty them in a secure area, which could be why they were empty when you observed them.
- We can really increase recycling at City Market and it's really about the education of recycling there. I like how they are different and have engaging elements.
- Thinking of a person who lives in the area who wants to recycle, they have to go to different sites. Always think about the accessibility aspect.
- Some can be temporary for infill in the future, but with old infrastructure it's different to incorporate recycling. We need to prevent this problem in the way future buildings are built.
- Need design guidelines, even if it's not here in this project. It could be helpful in the future and something for designers like a checklist to accommodate the needs. Need to create a recycling plan for the builders in the area.

Clusters Strategy

- How is it ADA accessible?
- People are lazy and they may end up putting trash in the recyclables if it is easier.
- It's a fun idea and I like it, but we all have short attention spans. What if people lose excitement after the first few months? Motivation is an issue.
- A positive is the visual to show people how much stuff is flowing around. The visibility aspects get at that silent plea to the people.
- Artists can help these ideas come to life and make it a conversation.
- Plastics and cardboards can be the best commodity to focus on when it comes to the value in the market. It is always better when they are separated.
- There was an artist who made a collage of plastic cups that got thrown away on airlines to show people and make them understand. The need to pay attention to these problems and show people the solutions. Show the resources that went into the production of the materials. There's a great mesh here with the Art in the Loop project.
- You could make an interesting collage of all the trash that gets thrown away.
- Connect with Sadie Gardner in Overland Park to think

about financial organization.

Links Strategy

- This could be great for the education.
- Would hate to maintain this composting idea in City Market.
- I could envision it with plastic bottles, definitely.
- The Nelson Atkins had a sculpture with collaged pieces of everyday objects.

Comments of the Overall Project

- It's making more sense now without all the planners speak and a recap and intro at the beginning.
- It's great that it's made for Kansas City.
- I like that the composting idea is near City Market. Perhaps a private entity could implement it with the city.
- Because it's closely linked with art, bring art funds into the picture.
- It's not on the level we operate as a city government, which is focused on collection and diversion. Instead, perhaps the Downtown Council would be interested since they know they need to attract young people to the city and would be interested in this idea.
- Could the army of yellow-jacketed people be persuaded to transfer small amounts of waste around?
- Money could come from the Downtown Council and private foundations, rather than the city. Organizations such as Bloch.
- With the question of composting, how are we separating the meat and dairy? No need to separate it here.
- Think about cost effectiveness. It needs to be thought about along with the longevity of the idea.

APPENDIX 4:
PROFESSIONAL REVIEW MEETINGS

Meeting Notes 4.1

The first professional review meeting was held on October 28, 2015 at the KCDC.

Management Concerns

- Look at cities with successful recycling programs, as we have done, but to compare them to cities that are doing mediocre, yet more physically and demographically related to Kansas City. What have those cities done to implement recycling programs?

Accessibility Concerns

- What percentage of people have access to recycling services Downtown and in Kansas City?

Framing the Research and Project Proposal

- Explain from where the data is coming from.
- Is this about communism or benevolent capitalism? If we point out the inefficiencies and suggest an alternative, we may undercut the private waste hauler businesses. However, as students, we can frame our research as simply a curious observation, rather than a political or business move.
- Think about suggesting something beyond the common practice, such as data driven research and design that can improve public space and culture. Tesla, for example, exceeds the parameters of typical design and proposes something so functional, yet it is hindered by impractical common practices of the status quo. Streetcars, too, are hindered and wiped out by privatized consumerism for private benefits, which has undermined sustainable designs.

Other Comments

- What about smart technology integrated with waste collection, such as dumpster monitors?

Meeting Notes 4.2

The second professional review meeting was held on December 11, 2015 at the KCDC.

Financial Concerns

- Market demands are necessary to drive costs and benefits. If we do not value the material, is there a way we can make it be valued?
- Consider that we cannot require grocery stores to pay for their own removal of organic waste if it drives up food prices. This would be a social injustice. Shared refrigerators in Germany is an innovative solution to a common problem of wasted food. People can share what they don't need with those who do, so that less is wasted.
- Economics was not a parameter with which the class was encouraged to start, but maybe they still should.

Management Concerns

- The number of haulers is questioned and how the financing is done. The reconfiguration explanation is not capturing the information wanted. Instead, the government waste organizations could be a utility structure that could be looked at.
- Municipal use of compost in stormwater management may require a more forceful approach ,so there is a need for quality control.
- Only until waste streams are separated will the value of the materials increase, so there is first a need for quality control to decrease contamination rates.

Next Steps for Research and Reframing the Project Proposal

- What is meant to be conveyed in the cost analysis diagram? The less numbers one puts on the board, the less discussion will be about details the class did not really want to discuss. Instead, there could be more discussion about things the class intended to discuss.
- The public does not seem to be interested in waste problems, which is a problem too. The project needs to identify the problems to design the system around them. Come up with something we've never thought about.
- Solutions then become inherent in the problem. Take a non-design issue, and make a design out of it. Design 3-4 really good questions to understand inside and out. Intuitive designs can be done without thinking unless you step back to see what you feel about it.
- In the next step, understand the priorities. Take a business approach, choose interventions with the most outcomes with the least amount of input.
- There is a need to explain the meaning of data researched thus far. What do we do with the information? Give a why, or a rationale of why this all was done.
- Maintain an open mind to get a sense of the overall issue. You have the capacity to go beyond the issues you've been told. Go outside the bubble you were given to work with.
- The project can take the government model, made to solve issues of the community.
- Can the project leverage the city to engage with the studio in the future on other projects, such as stormwater management with compost?
- The next step can be about what are the tangible design interventions that the project can address.

Behaviors Toward Recycling

- We need to design congestion to make it difficult for people to be comfortable. How can the project force people to change and encourage change in their behavior?
- Talk about livability versus "how" we live. People aren't dying from the waste issue here, but it does affect how

we live.
- Recycling incentives can address social design injustices. For example, the act of recycling could reward one with an KCATA bus ticket. Design the issue to the design opportunity.
- How do we make it personal? Introduce people to the realities of recycling.

Education and Awareness About Recycling
- Further explanation is needed for how recycling education will expand recycling endeavors in the city because when more people are aware, more people will want to participate.
- If a lack of public awareness and education is the problem, we need to talk to the community to ask them their concerns. Are the barriers related to physical designs of the system or is it about the community needs. This is a limitation that mapping alone cannot identify. One design intervention could be to test how a specific design can affect people.
- Education and awareness is a top priority, but are physical needs still a concern if recycling infrastructure doesn't exist? Focus groups and interviews may be needed to investigate this.
- Waste collection is a huge issue. If this project only gets people talking, it can still be beneficial. In fact, many stakeholders will use the information researched here.

Other Comments
- Should the mission statement be more about responsibility than livability? This then questions social values, and could lead to discussions about city outputs, such as intellectual works, rather than only waste.
- Think about events and simple interventions in large spaces that cost less than open space master plans.
- This project gets at the problem solving practice of designers. It's not about hammers and nails or solutions and issues. It's more like a relationship where one gets to know the issue, nurture it, and care for it. Then one can figure out what it is, own it, and love it.
- Need to diagram the non-physical conversations. Diagram how a person can recycle better.
- Relate the issue to how the 1,000 Rain Gardens addressed the issue of rainwater management in Kansas City. This project at KCDC is an opportunity to begin a new conversation about waste because it is never talked about and the need to view it in a tangible way.
- Increase social benefits of the design.
- A design could be a few distilled in purposeful actions that you propose should happen, such as a policy. The policy recommendation can be a one page document about the value of a theory, a relationship, and way to address an issue.
- It's not a policy, it's a value change.

Meeting Notes 4.3

The third professional review meeting was held on March 9, 2016 at the KCDC.

Site Selections

- Why did you choose these sites and what was the criteria that was used? For example, why was Grand chosen if it doesn't connect any of the sites? Perhaps you are choosing case studies but then why are they connected to each other as if that matters?
- Explain that you chose Grand because of a foot traffic or x,y,z reason.
- Rethink way you display the graphics, by highlighting the thing that was narrowed.

Links Strategy

- Why is KC Live omitted from the events frequency study?
- The different places and times of the day are generating different things. What are those commodities?
- It's okay to morph the links if you find that might be helpful based on what you are finding, or if not, at least address the part where it could perhaps be morphed, such as at Power and Light.
- Use precedents early on when talking about the links strategies because otherwise it is distracting for the viewer when they are trying to think of a physical way to understand your abstract ideas.
- At what point do you stop making doodles on the map to show strategic link movement ideas and is it okay to leave some blank?
- Show the process more when explaining the frequency of interventions overlay.
- Give an example or a "day in the life" story of what you are talking about. Humanize it. Personalize it so that it is meaningful to all audiences. For example, here is how a resident or visitor will start to use it.
- Explore the vertical as well, and the raised connection with composting idea is starting to get at that. The models can be used to think about using the space above the ground plane.
- Your plug-in ideas won't stick around long if they are not loved by the particular community in which they are located.
- There is only one part in the links design strategies where recycling is important. You need more educational content incorporated into the designs.
- Why isn't compost and storm water research more integrated into links concept?
- Could the recycled material design that is a slowing intervention change over time and be swapped out?
- The street interventions need to be selectively strategic. How many merry-go-rounds are too many? We want to avoid have so many that it isn't losing its unique idea of interrupting and catching people. Is it about the kit of parts or more about the specific designs?
- Should the links be presented last because the clusters and nodes provide the most important criteria in waste collection? Links instead are more of a safety net to intervene in providing awareness rather than mass collection.
- The next part is to think about where the kit of parts should be inserted to get the most impact.
- I want to see the texture of the sites and the articulation of facades, the lightness and darkness.
- There is the idea of a meaningful narrative missing. This would tie it to something real and thread a series of stories together.
- Perhaps there are parts of the links where something happens and parts where nothing happens. It needs an idea of dimension, a coherent system of how things fit together, such as paving that turns into a bench. Ask what parts can be manipulated. Think about plug-ins to

the existing site.
- Understand what a typical infill is and what is not.
- What about a gabion wall to show the material?
- There is the strategy to show the idea of the objects and the activity happening there with them.
- Interruptions could show the amounts as well.
- The discovering idea could show the financial, economic incentives and make people feel something like shock at the information you tell them about recycling in Kansas City.
- Create a narrative in terms of the program.
- What are the rituals of people living and working? What can we do to enhance their experience?

Clusters Strategy
- Is this about people who live in larger areas who are using a centralized collection point?
- Make it look more fun. Breaking glass could be therapeutic.
- You say machine and I think of a cartoon ACME place. Make it look more like a machine.
- You need to functionally show and understand how people deposit their things coming from almost a block away.
- Show the various trucks accesses as a technical exercise of space planning.
- How is the material bundled together when collected for the hauler to pick up?
- What is happening at the site when you walk by at 3 pm / 3 am?
- The closest precedent you have is the expanded trash zone at City Market where several businesses share a collection space. If you are suggesting more than something like that, then explain that.
- Present your ideas with key places highlight to save the viewer time in trying to figure it out. Give specific examples of what is happening in specific places that people will recognize.
- Need site photos in site analysis here.
- If you're going to use the wall, make full use of it and the opportunity of gravity.
- The waste loads helped understand which buildings on the site produced more waste and where the design could be placed, but make sure that idea follows through more intentionally.
- Think about the alleyways so that the system is changed rather than design for the current system.
- The designs definitely should show what could happen if the land use changes.
- You didn't address grease collection here.
- Pushing the bins into the street so people can see it isn't enough. There is tension between a need for visibility and the practicality of what that visibility will provide.
- If you stretch the bursts of energy diagram over a longer time period, you may find people are never there to see the collection because it happens in the early morning.
- Show them that they can save money through the clusters and rely on the links to cover the visibility/ awareness issue. How much have you coordinated with the other groups in your class to dovetail the strategies and address all the recycling dilemmas?
- It's not a leap that this could happen because of the smart city movement.
- There could be an on-demand trash collection mechanism that moves around.
- Develop and evaluate the design standards currently.
- An interchangeable waste compactor on a truck could be fun.
- Are you suggesting each cluster select a particular hauler and what does that do to the business? People can change the hauling business if they work together.
- Think about how we manage and pay for this. Provide

examples on how to charge by the load.

Nodes Strategy

- It would be nice to have a section to see the proposal of multiplicity node.
- Is it a temporary site that moves with infill happening? If so, it may need to be made of modules and could be made of recycled materials.
- As things change in the area, the coming of people will change as well.
- Access to the lot for cars could be narrowed to prioritize pedestrian access to above.
- Think about how you can economize the stuff, the recyclables and the materials you build with.
- It's a signboard for the cleaver ideas you have.
- Less sold on the game idea. More sold on the organization of processes and what you're doing in the end.
- Need site photos so that viewers are helped to understand.
- It needs to interact with the front of the facades and the shops there.
- The case studies are extremely helpful. I was thinking of a museum that you could climb onto to see what's happening, and the precedent images are tapping into that.
- Does the color coding mean anything to the waste at each place if they all are producing all types of waste?
- What is produced on the weekend on the interior of the space versus what is happening on the edge of the space all week? This is where the waste stream might be more and it may be steadier. The interior would have a spike on the weekends.
- The premise of the types of workers at City Market relates to the design.
- Where is the waste coming from right now? Find the waste generators on site.
- When things are added to a space, I often question why you can't work with what's existing already.
- Does it need to be taken off site or could it all happen in the dead space on site?
- I am concerned about using the open spaces on site. Do trucks use that zone? Are the trucks helped or hindered by it? You took the space and made it something else that you already have on the site with the overhead planes repeating.
- Think about the scale. Go smaller or go big with a roof over the whole block.
- Check on if the Steamboat Arabia museum is moving.
- Go to the site and ask what's happening so it is more real and less abstract.
- What is the nature of the intervention? Is it one massive and unifying idea? Or is it a light to the touch aspect added to the existing roof?
- Is it made of recycled material?
- Can you go up into it? Why do you need to?
- Does it grow overtime and assemble itself like WALL-E? Make it change, move, develop.
- Dual purpose idea is interesting, similar to the multiplicity node. Keep the parking and provide shade for it.
- Interesting to think about continuation after the building is built there in the future. Could it grow across like a bridge? Like a Slinky?
- Explore the leftover slivers along the highway. This way it offers something to the future developers in a variety of ways.
- Light it up at night.
- How do you see it from the views in perspective?
- Need to figure out what it's made of to a certain amount.
- I'm fascinated with the challenge of the narrow site and determine the height by the structural logic of staying in that space.

- Establish the words that describe the concept, such as "participating billboard." This is the framework and grounding for the design.
- Interstitial space in which people don't know you can do anything with it. For example, Gordon Matta Clark's work with Odd Lots.
- How do we use parts of the city that don't have an obvious use?
- What's the day in the life exercise here? How does a person interact with it and what is the public interface?
- What's the compost flow? Starts here and goes where? Need these flow diagrams to show how the machine works and how people could walk and how the organic chain is happening.
- From an agricultural perspective, how much are you really going to be able to provide with the space?
- How much of what kind of food will it take to support what kind of restaurant?
- Diagram the machine out more as a series of events and steps away from the physical conditions. Everything else feeds from that.
- Why have you played more with some massings and not others? Let the site speak more to the form of the built stuff such as the topography and human experience.
- Don't dress up the site. Dress it down. You don't need to cover the whole site.
- Interfaces for drop-off and pick-up need to be further thought out. Could the space be more about the process and less about the growing of food?
- Can you change regulations if you plan to deal with the smell? But if this thing can't handle the volumes of organic waste at a regional scale, does it mean that you are focusing on education more?
- Are we too quick to be dismissive and not address these issues?
- Say that you embrace 4 or 5 site dilemmas and work with it to prove it can happen.
- If people don't know what it is you're going for then it's difficult for people to get into the project.

Comments of the Overall Project

- What are the primary and secondary aspects of the links, clusters, and nodes? Are the dilemmas they are addressing overlapping?
- Nodes have a density aspect like a cluster, but they also relate to the links. Nodes are a hyper version of both clusters and links.
- When trying to design all parts of the system, to what extent does more tell us more? Can we identify the strategies to its full potential and the relationship to each other in a sense that the set of three strategies will be usefully distinguished and understandable for what counts about each one?
- It helps to have the analysis, but tell the story with the analysis. Storyboard with the most critical diagrams and edit in this process to see if you're getting at the story you want to tell.
- You have great work in the analysis, but where is the connection to the design?
- Tell the intro in an action-packed way. Then narrow down the purpose of each strategy and tell it well.
- The links are about the key points and a safety net spread across the board. They are a little different to narrow down.
- It's okay to state it simply, to really sum it up easily for what you've done.
- How can this project live beyond the final critique and begin to change the way people think?
- Make connections across pieces of the project.